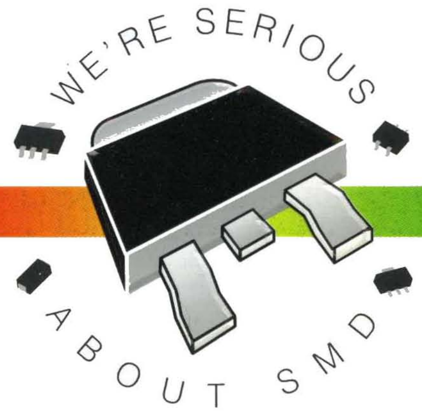
Central™ Semiconductor Corp. SMD DATA BOOK 1997

Central™

Semiconductor Corp.



SMD DATA BOOK

1997

New To This Edition...

SMD DATA BOOK 1997

CMDSH2-3 High Current Schottky Diode in SOD-323 case

A new high current Schottky diode has been added to the offering of low and medium current devices. This new 200mA device is 100% higher in current than what is currently available in the Industry. In addition, packaging in the SUPERmini™ SOD-323 case affords maximum circuit density.

See page 122.

CMDZ5L1 Series of low level, sharp knee SOD-323 Zeners

The first Zener Diode in a SUPERmini™ case! This series of Low Level, high performance devices is specifically designed for super tight real estate applications such as PDA, PC Card, Pager, Cell phone and Notebook computer. Available from 5.1 volts thru 36 volts.

See page 124.

SMA Rectifiers

1.0 Amp rectifiers are now available in the SUPERmini™ SMA case.

This tiny, new package affords space savings of 30% over the SMB case and weight savings of 44% over the MELF case. Central's high speed fully automated assembly process brings SMA pricing nearly at par with the MELF. The flat SMA package offers distinct manufacturing benefits over the cylindrically shaped MELF. Available Technologies are:

General purpose	CMR1-02M Series
Fast Recovery	CMR1F-02M Series
Ultrafast	CMR1U-01M Series
Schottky	CMSH1-20M Series

See pages 220, 222, 226, and 240.

CMSH1-100 Schottky Rectifier, 100 Volts in SMB case

Central expanded the voltage range on its 1.0 amp SMB Schottky. Previously only 20, 40, and 60 volts were available. Now the added 100 volt has been added as a standard product.

See page 238.

New To This Edition... Continued

New SMB Rectifiers with 100% higher current ratings

The SMB case is no longer limited to merely 1.0 Amp. Central engineers managed to squeeze a full 2.0 Amps into this small case. These devices bridge the gap between the 1.0 amp SMB and the 3.0 amp SMC case, which is 2 ½ times larger than the SMB.

Available Technologies are:

General Purpose	CMR2-02 Series
Ultrafast	CMR2U-01 Series
Schottky	CMSH2-20 Series

See pages 228, 230, and 242.

DPAK Rectifiers

Due to intense customer demand Central has developed DPAK Schottky and Ultrafast Rectifiers in order to second source Motorola and IR. The initial offering includes:

Ultrafast 3.0 Amp, 200 Volt	CUD3-02 series
Ultrafast 6.0 Amp, 200 Volt	CUD6-02C series
Schottky 3.0 Amp, 40 thru 60 Volt	CSHD3-40 series
Schottky 6.0 Amp, 40 thru 60 Volt	CSHD6-40C series

See pages 264, 266, 256, and 260.

DPAK Planar Power Transistors

Finally a second source for Motorola's MJD44H11 and MJD45H11 complementary 8.0 Amp Planar bipolar power transistor. These cool running, fast switching "drop on" replacements have the designation CJD44H11 and CJD45H11 respectively.

See page 84.

CXTA27 High Voltage Darlington in SOT-89 case

60 volt Small Signal Darlington transistors have now been packaged into the high performance SOT-89 case. These devices are suitable for various uses such as PC Card (PCMCIA) modems and other Telecom applications.

See page 286.

SOT-23 and SOD-80 low level and low noise Zener Diodes

Central has expanded it's voltage range on the following series of devices to round out its offering. Devices are now available from 1.8V to 43V.

SOT-23 case: CMPZ4614 thru 4627 and CMPZ4678 thru 4717.

SOD-80 case: CLL4614 thru 4627 and CLL4678 thru 4717.

See pages 210, 212, 112, and 114.

Selected, Special, and Custom SMDs

In addition to our standard surface mounted devices, Central Semiconductor is committed to building Selected, Special, and Custom SMDs.

SELECTED SMD

A selected SMD is a standard device that is selected for an additional or tightened electrical parameter(s).

For example:

CMPT2222A selected for higher voltage
The standard BV_{CEO} is 40 volts min and the customer's application requires 60 volts min.

CZT3019 selected for higher gain
The standard h_{FE} is 100 min, 300 max and the customer's special selection is 160 min, 300 max.

CMPZ5240B selected for tighter tolerance
The standard tolerance is ±5% and the customer requires ±2% tolerance.

SPECIAL SMD

A Special SMD is required when a selection of a standard device is not possible. Normally, this is accomplished through a special diffusion of a standard process.

For example:

CMPD2003 with ultra low leakage
A special diffusion is required to yield a leakage level far below the standard I_R of 100nA max.

CXT3904 with extremely high gain
A special diffusion is required to yield a minimum h_{FE} above the standard range of 100 min, 300 max. (example: a range of 320 min, 500 max)

CLLR1U-04 with higher voltage
A special diffusion can be performed to yield a B_{VR} of 600 volts min, instead of 400 volts min.

CUSTOM SMD

A Custom SMD may be developed for a unique customer requirement. Custom devices can be obtained by either assembling one of our standard chips into a different case or by developing a completely new device.

For example:

CXSH-4 is a custom device that was developed for a customer requirement. This device is a Schottky Rectifier (normally built in a MELF or SMB case) assembled into an SOT-89 case to meet a very tight height restriction.

CBR1F-D020S is a custom device. Our standard SMD Bridge Rectifier is built with general purpose chips; this application requires fast recovery chips.

While other manufacturers shy away from Selected and Special and Custom devices, Central is committed to meeting Customer needs for Selected and Special SMDs. Central will review and determine feasibility of Custom devices.

QUALITY POLICY

- Our definition of quality is **Complete Customer Satisfaction 100% of the time.**

- We are dedicated to manufacturing Competitively Priced, **Quality Products** delivered on time and professionally serviced.

- We define **Excellence** as surpassing our customers' expectations.

- Our perpetual challenge is the pursuit of **Achieving Excellence** in everything we do, and we strive to accomplish this by utilizing Ongoing Training for Continuous Improvement in all areas.

- We recognize that customer satisfaction results in **Repeat Business**.

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1N6482	CMR1-06M	EM	48	220
1N6483	CMR1-10M	EM	48	220
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6CWQ03F	CSHD6-40C	EM	51	260
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* Special Order

CE	Closest equivalent (slight to significant electrical and/or mechanical differences)	EM	Exact electrical and mechanical.
SE	Exact mechanical equivalent, slight electrical differences.	SM	Exact electrical equivalent, slight mechanical differences.

Industry Part Number	Central Part Number	Code	Selection Guide	Data Sheet
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* Special Order

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* Special Order

CE	Closest equivalent (slight to significant electrical and/or mechanical differences)	**EM**	Exact electrical and mechanical.
SE	Exact mechanical equivalent, slight electrical differences.	**SM**	Exact electrical equivalent, slight mechanical differences.

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BYM10- 600	CMR1-06M	EM	48	220
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BYM11- 600	CMR1F-06M	EM	49	222
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* Special Order

CE	Closest equivalent (slight to significant electrical and/or mechanical differences)	EM	Exact electrical and mechanical.
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Semiconductor Corp.

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* Special Order

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Industry Part Number	Central Part Number	Code	Selection Guide	Data Sheet
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CMR1-04M			48	220
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CMR1F-04M			49	222
CMR1F-06M			49	222
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CMSH1-20			51	238
CMSH1-20M			51	240
CMSH1-40			51	238
CMSH1-40M			51	240
CMSH1-60			51	238
CMSH1-60M			51	240
CMSH1-100			51	238
CMSH2-20			51	242
CMSH2-40			51	242
CMSH2-60			51	242
CMSH3-20			51	244
CMSH3-40			51	244
CMSH3-60			51	244
CMST2222A			36	246
CMST2907A			36	248
CMST3904			36	250
CMST3906			36	250
CQ89D			53	252
CQ89DS			53	254
CQ89M			53	252
CQ89MS			53	254
CQ89N			53	252
CQ89NS			53	254
CSHD3-40			51	256
CSHD3-60			51	258
CSHD6-40C			51	260
CSHD6-60C			51	262
CUD3-02			50	264
CUD6-02C			50	266
CXSH-4			51	268
CXT2222A			37	270
CXT2907A			37	272
CXT3019			37	274
CXT3904			37	276
CXT3906			37	276
CXT4033			37	278
CXT5401			37	280
CXT5551			37	282
CXTA14			37	284
CXTA27			37	286
CXTA42			37	288
CXTA64			37	284
CXTA92			37	288
CZS5064			53	290
CZSH-4			51	292
CZT 31C			39	294
CZT 32C			39	294
CZT 122			39	296
CZT 127			39	296
CZT 2000			38	298
CZT 2222A			38	300
CZT 2907A			38	302
CZT 2955			39	304
CZT 3019			38	306
CZT 3055			39	304
CZT 3904			38	308
CZT 3906			38	308
CZT 4033			38	310
CZT 5338			39	312
CZT 5401			38	314
CZT 5551			38	316
CZTA14			38	318

* Special Order

CE	Closest equivalent (slight to significant electrical and/or mechanical differences)	EM	Exact electrical and mechanical.
SE	Exact mechanical equivalent, slight electrical differences.	SM	Exact electrical equivalent, slight mechanical differences.

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* Special Order

CE	Closest equivalent (slight to significant electrical and/or mechanical differences)	EM	Exact electrical and mechanical.
SE	Exact mechanical equivalent, slight electrical differences.	SM	Exact electrical equivalent, slight mechanical differences.

Industry Part Number	Central Part Number	Code	Selection Guide	Data Sheet
FMMTA14	CMPTA14	EM	33	198
FMMTA20	CMPT3904	EM	32	172
FMMTA42	CMPTA42	EM	33	204
FMMTA43	CMPTA42	EM	33	204
FMMTA55	CMPTA56	EM	32	196
FMMTA56	CMPTA56	EM	32	196
FMMTA70	CMPT3906	EM	32	172
FMMTA92	CMPTA92	EM	33	204
FMMTA93	CMPTA92	EM	33	204
FTSO 706	CMPT2369	EM	32	160
FTSO 706A	CMPT2369	EM	32	160
FTSO 918	CMPT 918	EM	33	154
FTSO 930	CMPT2484	SE	32	162
FTSO 930A	CMPT2484	SE	32	162
FTSO2218	CMPT2222A	SE	32	158
FTSO2218A	CMPT2222A	SE	32	158
FTSO2219	CMPT2222A	EM	32	158
FTSO2219A	CMPT2222A	EM	32	158
FTSO2221	CMPT2222A	SE	32	158
FTSO2221A	CMPT2222A	SE	32	158
FTSO2222	CMPT2222A	EM	32	158
FTSO2222A	CMPT2222A	EM	32	158
FTSO2369	CMPT2369	EM	32	160
FTSO2369A			—	*
FTSO2484	CMPT2484	EM	32	162
FTSO2904	CMPT2907A	SE	32	164
FTSO2904A	CMPT2907A	SE	32	164
FTSO2905	CMPT2907A	EM	32	164
FTSO2905A	CMPT2907A	EM	32	164
FTSO2906	CMPT2907A	SE	32	164
FTSO2906A	CMPT2907A	SE	32	164
FTSO2907	CMPT2907A	EM	32	164
FTSO2907A	CMPT2907A	EM	32	164
FTSO3563	CMPT 918	SE	33	154
FTSO3638	CMPT4403	SE	32	176
FTSO3638A	CMPT4403	SE	32	176
FTSO3639	CMPT3640	EM	32	168
FTSO3640	CMPT3640	EM	32	168
FTSO3646	CMPT3646	EM	32	170
FTSO3903	CMPT3904	SE	32	172
FTSO3904	CMPT3904	EM	32	172
FTSO3905	CMPT3906	SE	32	172
FTSO3906	CMPT3906	EM	32	172
FTSO4123	CMPT3904	SE	32	172
FTSO4124	CMPT3904	SE	32	172
FTSO4125	CMPT3906	SE	32	172
FTSO4126	CMPT3906	SE	32	172
FTSO4208	CMPT3640	SE	32	168
FTSO4209	CMPT3640	SE	32	168
FTSO4258	CMPT3640	SE	32	168
FTSO4274	CMPT2369	SE	32	160
FTSO4275	CMPT2369	SE	32	160
FTSO4400	CMPT4401	SE	32	176
FTSO4401	CMPT4401	EM	32	176
FTSO4402	CMPT4403	SE	32	176
FTSO4403	CMPT4403	EM	32	176
FTSO5086	CMPT5086	EM	32	178
FTSO5087	CMPT5087	EM	32	178
FTSO5088	CMPT5088	EM	32	180
FTSO5089	CMPT5089	EM	32	180
FTSO5400	CMPT5401	EM	33	184
FTSO5401	CMPT5401	EM	33	184
FTSO5550	CMPT5551	EM	33	186
FTSO5551	CMPT5551	EM	33	186
FTSO5769	CMPT2369	SE	32	160
FTSO5770	CMPT 918	SE	33	154
FTSO5771	CMPT3640	SE	32	168
FTSOA05	CMPTA06	EM	32	196
FTSOA06	CMPTA06	EM	32	196
FTSOA12	CMPTA13	SE	33	198
FTSOA13	CMPTA13	EM	33	198
FTSOA14	CMPTA14	EM	33	198
FTSOA20	CMPT3904	EM	32	172
FTSOA42	CMPTA42	EM	33	204
FTSOA43	CMPTA42	EM	33	204
FTSOA55	CMPTA56	EM	32	196
FTSOA56	CMPTA56	EM	32	196
FTSOA70	CMPT3906	EM	32	172
FTSOL01	CMPT5551	EM	33	186
FTSOL51	CMPT5401	EM	33	184
GF1A	CMR1-02	EM	48	218
GF1B	CMR1-02	EM	48	218
GF1D	CMR1-02	EM	48	218
GF1G	CMR1-04	EM	48	218
GF1J	CMR1-06	EM	48	218
GF1K	CMR1-10	EM	48	218
GF1M	CMR1-10	EM	48	218
GLL4735A thru	CLL4735A thru	EM	45	116
GLL4763A	CLL4763A	EM	45	116
LL4148	CLL 914	EM	40	102
LL4150	CLL4150	EM	40	108
LL4448	CLL4448	EM	40	110
MB2S	CBRHD-02	EM	52	74
MB4S	CBRHD-04	EM	52	74
MB6S	CBRHD-06	EM	52	74
MBAL99	CMPD 914	EM	40	128
MBAS16	CMPD 914	EM	40	128
MBAV70	CMPD2838	EM	40	134

* Special Order

CE	Closest equivalent (slight to significant electrical and/or mechanical differences)	**EM**	Exact electrical and mechanical.
SE	Exact mechanical equivalent, slight electrical differences.	**SM**	Exact electrical equivalent, slight mechanical differences.

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Industry Part Number	Central Part Number	Code	Selection Guide	Data Sheet
MBAV99	CMPD7000	EM	40	144
MBAW56	CMPD2836	EM	40	134
MBRA130	CMSH1-40M	SE	51	240
MBRA140	CMSH1-40M	EM	51	240
MBRA160	CMSH1-60M	EM	51	240
MBRD340	CSHD3-40	EM	51	256
MBRD360	CSHD3-60	EM	51	258
MBRD640CT	CSHD6-40C	EM	51	260
MBRD660CT	CSHD6-60C	EM	51	262
MBRL120	CMSH1-20M	EM	51	240
MBRL130	CMSH1-40M	EM	51	240
MBRL140	CMSH1-40M	EM	51	240
MBRO520	CMDSH2-3	CE	41	122
MBRO530	CMDSH2-3	CE	41	122
MBRO540			—	*
MBRS120	CMSH1-20	EM	51	238
MBRS130	CMSH1-40	EM	51	238
MBRS140	CMSH1-40	EM	51	238
MBRS170	CMSH1-100	EM	51	238
MBRS320	CMR3-02	EM	48	232
MBRS330	CMR3-04	EM	48	232
MBRS340	CMR3-04	EM	48	232
MBRS340TS	CMSH3-40	EM	51	244
MBRS360TS	CMSH3-60	EM	51	244
MJD 31C	CJD 31C	EM	39	80
MJD 32C	CJD 32C	EM	39	80
MJD 41C	CJD 41C	EM	39	82
MJD 42C	CJD 42C	EM	39	82
MJD 47	CJD 47	EM	39	86
MJD 50	CJD 50	EM	39	86
MJD 112	CJD 112	EM	39	88
MJD 117	CJD 117	EM	39	88
MJD 122	CJD 122	EM	39	90
MJD 127	CJD 127	EM	39	90
MJD 200	CJD 200	EM	39	92
MJD 210	CJD 210	EM	39	92
MJD 340	CJD 340	EM	39	94
MJD 350	CJD 350	EM	39	94
MJD 2955	CJD 2955	EM	39	96
MJD 3055	CJD 3055	EM	39	96
MJD13003	CJD13003	EM	39	98
MJD44H11	CJD44H11	EM	39	84
MJD45H11	CJD45H11	EM	39	84
MLL 746A thru	CLL5226B thru	EM	45	118
MLL 972B	CLL5256B	SE	45	118
MLL4001	CMR1-02M	EM	48	220
MLL4002	CMR1-02M	EM	48	220
MLL4003	CMR1-02M	EM	48	220
MLL4004	CMR1-04M	EM	48	220
MLL4625	CLL4625	EM	45	112
MLL4626	CLL4626	EM	45	112
MLL4627	CLL4627	EM	45	112
MLL4678 thru	CLL4678 thru	EM	45	114
MLL4717	CLL4717	EM	45	114
MLL4729A thru	CLL4729A thru	EM	45	116
MLL4764A	CLL4764A	EM	45	116
MLL5226B thru	CLL5226B thru	EM	45	118
MLL5257B	CLL5257B	EM	45	118
MMBD 101	CMPD6263	EM	41	142
MMBD 301	CMPSH-3	SE	41	152
MMBD 352	CMPD6263S	SE	41	142
MMBD 701	CMPD6263	SE	41	142
MMBD 914	CMPD 914	EM	40	128
MMBD2835	CMPD2836	EM	40	134
MMBD2836	CMPD2836	EM	40	134
MMBD2837	CMPD2838	EM	40	134
MMBD2838	CMPD2838	EM	40	134
MMBD6050	CMPD4448	EM	40	138
MMBD6100	CMPD2838	EM	40	134
MMBD7000	CMPD7000	EM	40	144
MMBF4391	CMPF4391	EM	34	146
MMBF4392	CMPF4392	EM	34	146
MMBF4393	CMPF4393	EM	34	146
MMBR2857	CMPT5179	EM	33	182
MMBR5179	CMPT5179	EM	33	182
MMBS5060	CMPS5064	EM	53	150
MMBS5061	CMPS5064	EM	53	150
MMBS5062	CMPS5064	EM	53	150
MMBS5063	CMPS5064	EM	53	150
MMBS5064	CMPS5064	EM	53	150
MMBT 918	CMPT 918	EM	33	154
MMBT2222	CMPT2222A	EM	32	158
MMBT2222A	CMPT2222A	EM	32	158
MMBT2369	CMPT2369	EM	32	160
MMBT2484	CMPT2484	EM	32	162
MMBT2907	CMPT2907A	EM	32	164
MMBT2907A	CMPT2907A	EM	32	164
MMBT3638	CMPT4403	SE	32	176
MMBT3638A	CMPT4403	SE	32	176
MMBT3640	CMPT3640	EM	32	168
MMBT3646	CMPT3646	EM	32	170
MMBT3903	CMPT3904	SE	32	172
MMBT3904	CMPT3904	EM	32	172
MMBT3906	CMPT3906	EM	32	172
MMBT4123	CMPT3904	SE	32	172
MMBT4124	CMPT3904	SE	32	172
MMBT4125	CMPT3906	SE	32	172
MMBT4126	CMPT3906	SE	32	172

* Special Order

CE	Closest equivalent (slight to significant electrical and/or mechanical differences)	EM	Exact electrical and mechanical.
SE	Exact mechanical equivalent, slight electrical differences.	SM	Exact electrical equivalent, slight mechanical differences.

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Industry Part Number	Central Part Number	Code	Selection Guide	Data Sheet
MMBT4401	CMPT4401	EM	32	176
MMBT4403	CMPT4403	EM	32	176
MMBT5086	CMPT5086	EM	32	178
MMBT5087	CMPT5087	EM	32	178
MMBT5088	CMPT5088	EM	32	180
MMBT5089	CMPT5089	EM	32	180
MMBT5401	CMPT5401	EM	33	184
MMBT5551	CMPT5551	EM	33	186
MMBT6427	CMPT6427	EM	33	188
MMBT6428	CMPT6428	EM	32	190
MMBT6429	CMPT6429	EM	32	190
MMBT6517	CMPT6517	EM	33	192
MMBT6520	CMPT6520	EM	33	192
MMBT8099	CMPT8099	EM	32	194
MMBT8599	CMPT8599	EM	32	194
MMBTA05	CMPTA06	EM	32	196
MMBTA06	CMPTA06	EM	32	196
MMBTA13	CMPTA13	EM	33	198
MMBTA14	CMPTA14	EM	33	198
MMBTA20	CMPT3904	EM	32	172
MMBTA27	CMPTA27	EM	33	200
MMBTA42	CMPTA42	EM	33	204
MMBTA43	CMPTA42	EM	33	204
MMBTA44	CMPTA44	EM	33	206
MMBTA56	CMPTA56	EM	32	196
MMBTA63	CMPTA63	EM	33	198
MMBTA64	CMPTA64	EM	33	198
MMBTA70	CMPT3906	EM	32	172
MMBTA92	CMPTA92	EM	33	204
MMBTA93	CMPTA92	EM	33	204
MMBTH10	CMPTH10	EM	33	208
MMBZ15VD	CMPZDA15V	CE	44	216
MMBZ5226 thru	CMPZ5226B thru	EM	44	214
MMBZ5257	CMPZ5257B	EM	44	214
MMST 918	CMPT 918	EM	33	154
MMST-A06	CMPTA06	EM	32	196
MMST-A13	CMPTA13	EM	33	198
MMST-A14	CMPTA14	EM	33	198
MMST-A20	CMPT3904	EM	32	172
MMST-A56	CMPTA56	EM	32	196
MMST-A63	CMPTA63	EM	33	198
MMST-A64	CMPTA64	EM	33	198
MMST-A70	CMPT3906	EM	32	172
MMST2222	CMPT2222A	EM	32	158
MMST2222A	CMPT2222A	EM	32	158
MMST2907	CMPT2907A	EM	32	164
MMST2907A	CMPT2907A	EM	32	164
MMST3904	CMPT3904	EM	32	172
MMST3906	CMPT3906	EM	32	172
MMST4124	CMPT3904	SE	32	172
MMST4126	CMPT3906	SE	32	172
MMST4401	CMPT4401	EM	32	176
MMST4403	CMPT4403	EM	32	176
MMST5086	CMPT5086	EM	32	178
MMST5087	CMPT5087	EM	32	178
MMST5088	CMPT5088	EM	32	180
MMST5089	CMPT5089	EM	32	180
MMSZ2V4	BZV55C2V4	SM		*
MMSZ33	BZV55C33	SM		*
MMSZ4678 thru	CLL4678 thru	SM	45	114
MMSZ4717	CLL4717	SM	45	114
MMSZ5226B thru	CLL5226B thru	SM	45	118
MMSZ5257B	CLL5257B	SM	45	118
MRA4003	CMR1-02M	EM	48	220
MRA4004	CMR1-04M	EM	48	220
MRA4005	CMR1-06M	EM	48	220
MRA4006	CMR1-10M	EM	48	220
MRA4007	CMR1-10M	EM	48	220
MRA4935	CMR1F-02M	EM	49	222
MRA4936	CMR1F-04M	EM	49	222
MRA4937	CMR1F-06M	EM	49	222
MURD320	CUD3-02	EM	50	264
MURD620CT	CUD6-02C	EM	50	266
MURS105	CMR1U-01	EM	50	224
MURS110	CMR1U-01	EM	50	224
MURS115	CMR1U-02	EM	50	224
MURS120	CMR1U-02	EM	50	224
MURS130	CMR1U-04	EM	50	224
MURS140	CMR1U-04	EM	50	224
MURS320T3	CMR3U-02	EM	50	234
MURS340	CMR3U-04	EM	50	234
MURS360	CMR3U-06	EM	50	234
MURS360T3	CMR3U-06	EM	50	234
MXT2222	CXT2222A	EM	37	270
MXT2222A	CXT2222A	EM	37	270
MXT2907	CXT2907A	EM	37	272
MXT2907A	CXT2907A	EM	37	272
MXT3904	CXT3904	EM	37	276
MXT3906	CXT3906	EM	37	276
MXTA14	CXTA14	EM	37	284
MXTA27	CXTA27	EM	37	286
MXTA42	CXTA42	EM	37	288
MXTA43	CXTA42	EM	37	288
MXTA92	CXTA92	EM	37	288
MXTA93	CXTA92	EM	37	288
PMBD 101	CMPD6263	SE	41	142
PMBD 352	CMPD6263S	SE	41	142
PMBD 914	CMPD 914	EM	40	128

* Special Order

CE	Closest equivalent (slight to significant electrical and/or mechanical differences)	**EM**	Exact electrical and mechanical.
SE	Exact mechanical equivalent, slight electrical differences.	**SM**	Exact electrical equivalent, slight mechanical differences.

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Industry Part Number	Central Part Number	Code	Selection Guide	Data Sheet
PMBD2835	CMPD2836	EM	40	134
PMBD2836	CMPD2836	EM	40	134
PMBD2837	CMPD2838	EM	40	134
PMBD2838	CMPD2838	EM	40	134
PMBD6050	CMPD4448	EM	40	138
PMBD6100	CMPD2838	EM	40	134
PMBD7000	CMPD7000	EM	40	144
PMBF4391	CMPF4391	EM	34	146
PMBF4392	CMPF4392	EM	34	146
PMBF4393	CMPF4393	EM	34	146
PMBT2222	CMPT2222A	EM	32	158
PMBT2222A	CMPT2222A	EM	32	158
PMBT2369	CMPT2369	EM	32	160
PMBT2907	CMPT2907A	EM	32	164
PMBT2907A	CMPT2907A	EM	32	164
PMBT3640	CMPT3640	EM	32	168
PMBT3903	CMPT3904	SE	32	172
PMBT3904	CMPT3904	EM	32	172
PMBT3906	CMPT3906	EM	32	172
PMBT4123	CMPT3904	SE	32	172
PMBT4124	CMPT3904	SE	32	172
PMBT4125	CMPT3906	SE	32	172
PMBT4126	CMPT3906	SE	32	172
PMBT4401	CMPT4401	EM	32	176
PMBT4403	CMPT4403	EM	32	176
PMBT5086	CMPT5086	EM	32	178
PMBT5087	CMPT5087	EM	32	178
PMBT5088	CMPT5088	EM	32	180
PMBT5089	CMPT5089	EM	32	180
PMBT5400	CMPT5401	EM	33	184
PMBT5401	CMPT5401	EM	33	184
PMBT5551	CMPT5551	EM	33	186
PMBTA05	CMPTA06	EM	32	196
PMBTA06	CMPTA06	EM	32	196
PMBTA13	CMPTA13	EM	33	198
PMBTA14	CMPTA14	EM	33	198
PMBTA20	CMPT3904	EM	32	172
PMBTA42	CMPTA42	EM	33	204
PMBTA43	CMPTA42	EM	33	204
PMBTA55	CMPTA56	EM	32	196
PMBTA56	CMPTA56	EM	32	196
PMBTA63	CMPTA63	EM	33	198
PMBTA64	CMPTA64	EM	33	198
PMBTA70	CMPT3906	EM	32	172
PMBTA92	CMPTA92	EM	33	204
PMBTA93	CMPTA92	EM	33	204
PMBZ5221B thru	CMPZ5221 thru	EM	44	214
PMBZ5261B	CMPZ5261B	EM	44	214
PMLL4148	CLL 914	EM	40	102
PMLL4150	CLL4150	EM	40	108
PMLL4151	CLL4448	SE	40	110
PMLL4153	CLL4448	SE	40	110
PMLL4446	CLL4448	EM	40	110
PMLL4448	CLL4448	EM	40	110
PMLL5226 thru	CLL5226B thru	EM	45	118
PMLL5257	CLL5257B	EM	45	118
PXT2222	CXT2222A	EM	37	270
PXT2222A	CXT2222A	EM	37	270
PXT2907	CXT2907A	EM	37	272
PXT2907A	CXT2907A	EM	37	272
PXT3904	CXT3904	EM	37	276
PXT3906	CXT3904	EM	37	276
PXT4401	CXT2222A	SE	37	270
PXT4403	CXT2907A	SE	37	272
PXTA14	CXTA14	EM	37	284
PXTA27	CXTA27	EM	37	286
PXTA42	CXTA42	EM	37	288
PXTA64	CXTA64	EM	37	284
PXTA92	CXTA92	EM	37	288
PZT2222	CZT2222A	EM	38	300
PZT2222A	CZT2222A	EM	38	300
PZT2907	CZT2907A	EM	38	302
PZT2907A	CZT2907A	EM	38	302
PZT3904	CZT3904	EM	38	308
PZT3906	CZT3906	EM	38	308
PZTA13	CZTA14	EM	38	318
PZTA14	CZTA14	EM	38	318
PZTA42	CZTA42	EM	38	320
PZTA43	CZTA42	EM	38	320
PZTA63	CZTA64	EM	38	318
PZTA64	CZTA64	EM	38	318
PZTA92	CZTA92	EM	38	320
PZTA93	CZTA92	EM	38	320
RB031B-40	CSHD6-40C	EM	51	260
RB035B-40	CSHD3-40	EM	51	256
RB110C	CXSH-4	EM	51	268
RB160L-40	CMSH1-40M	EM	51	240
RB400D	CMPSH-3	SE	41	152
RB420D	CMPSH-3	SE	41	152
RB421D	CMPSH-3	SE	41	152
RB425D	CMPSH-3C	SE	41	152
RB705D	CMSH1-20	EM	51	238
RD411D	CMPSH-3	SE	41	152
RF1A	CMR1U-01	EM	50	224
RF1B	CMR1U-01	EM	50	224
RF1D	CMR1U-02	EM	50	224
RF1G	CMR1U-04	EM	50	224
RGL41A	CMR1F-02M	EM	49	222

* Special Order

CE	Closest equivalent (slight to significant electrical and/or mechanical differences)	**EM**	Exact electrical and mechanical.
SE	Exact mechanical equivalent, slight electrical differences.	**SM**	Exact electrical equivalent, slight mechanical differences.

Index/Cross Reference (Continued)

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Industry Part Number	Central Part Number	Code	Selection Guide	Data Sheet
SMBT3904	CMPT3904	EM	32	172
SMBT3906	CMPT3906	EM	32	172
SMBT4124	CMPT3904	SE	32	172
SMBT4126	CMPT3906	SE	32	172
SMBT4401	CMPT4401	EM	32	176
SMBT4403	CMPT4403	EM	32	176
SMBT5086	CMPT5086	EM	32	178
SMBT5087	CMPT5087	EM	32	178
SMBT5088	CMPT5088	EM	32	180
SMBTA05	CMPTA06	EM	32	196
SMBTA06	CMPTA06	EM	32	196
SMBTA13	CMPTA13	EM	33	198
SMBTA14	CMPTA14	EM	33	198
SMBTA20	CMPT3904	EM	32	172
SMBTA42	CMPTA42	EM	33	204
SMBTA43	CMPTA42	EM	33	204
SMBTA55	CMPTA56	EM	32	196
SMBTA56	CMPTA56	EM	32	196
SMBTA63	CMPTA63	EM	33	198
SMBTA64	CMPTA64	EM	33	198
SMBTA70	CMPT3904	EM	32	172
SMBTA92	CMPTA92	EM	33	204
SMBTA93	CMPTA92	EM	33	204
SO 517	CMPTA13	EM	33	198
SO 642	CMPTA42	EM	33	204
SO 692	CMPTA92	EM	33	204
SO 918	CMPT918	EM	33	154
SO 930	CMPT2484	SE	32	162
SO1711	CMPT2222A	SE	32	158
SO1893	CMPT2222A	SE	32	158
SO2221	CMPT2222A	SE	32	158
SO2221A	CMPT2222A	SE	32	158
SO2222	CMPT2222A	EM	32	158
SO2222A	CMPT2222A	EM	32	158
SO2369	CMPT2369	EM	32	160
SO2369A			—	*
SO2484	CMPT2484	EM	32	162
SO2894	CMPT3640	EM	32	168
SO2906	CMPT2907A	SE	32	164
SO2906A	CMPT2907A	SE	32	164
SO2907	CMPT2907A	EM	32	164
SO2907A	CMPT2907A	EM	32	164
SO3903	CMPT3904	SE	32	172
SO3904	CMPT3904	EM	32	172
SO3905	CMPT3906	SE	32	172
SO3906	CMPT3906	EM	32	172
SO4401	CMPT4401	EM	32	176
SO4403	CMPT4403	EM	32	176
SO5400	CMPT5401	EM	33	184
SO5401	CMPT5401	EM	33	184
SO5550	CMPT5551	EM	33	186
SO5551	CMPT5551	EM	33	186
SOA05	CMPTA06	EM	32	196
SOA06	CMPTA06	EM	32	196
SOA55	CMPTA56	EM	32	196
SOA56	CMPTA56	EM	32	196
SS12	CMSH1-20M	EM	51	240
SS13	CMSH1-40M	EM	51	240
SS14	CMSH1-40M	EM	51	240
SS15	CMSH1-60M	EM	51	240
SS16	CMSH1-60M	EM	51	240
SS22	CMSH2-20	EM	51	242
SS23	CMSH2-40	EM	51	242
SS24	CMSH2-40	EM	51	242
SS25	CMSH2-60	EM	51	242
SS26	CMSH2-60	EM	51	242
SS32	CMSH3-20	EM	51	244
SS33	CMSH3-40	EM	51	244
SS34	CMSH3-40	EM	51	244
SS35	CMSH3-60	EM	51	244
SS36	CMSH3-60	EM	51	244
SXT2222A	CXT2222A	EM	37	270
SXT2907A	CXT2907A	EM	37	272
SXT3904	CXT3904	EM	37	276
SXT3906	CXT3906	EM	37	276
SXTA42	CXTA42	EM	37	288
SXTA43	CXTA42	EM	37	288
SXTA92	CXTA92	EM	37	288
SXTA93	CXTA92	EM	37	288
TM4729A thru	CLL4729A thru	EM	45	116
TM4752A	CLL4752A	EM	45	116
TMM5226B thru	CLL5226B thru	EM	45	118
TMM5257B	CLL5257B	EM	45	118
TMPD 914	CMPD 914	EM	40	128
TMPD2835	CMPD2836	EM	40	134
TMPD2836	CMPD2836	EM	40	134
TMPD2837	CMPD2838	EM	40	134
TMPD2838	CMPD2838	EM	40	134
TMPD4148	CMPD 914	EM	40	128
TMPD4150	CMPD4150	EM	40	136
TMPD4448	CMPD4448	EM	40	138
TMPD6050	CMPD4448	EM	40	138
TMPD6100	CMPD2838	EM	40	134
TMPD7000	CMPD7000	EM	40	144
TMPF4391	CMPF4391	EM	34	146
TMPF4392	CMPF4392	EM	34	146
TMPF4393	CMPF4393	EM	34	146
TMPT 918	CMPT 918	EM	33	154

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Central™
Semiconductor Corp.

Leaded to Surface Mount Equivalents

LEADED	SMD	CASE	COMMENTS
1N 914	BAS28	SOT-143	Dual, Isolated
	CLL 914	SOD-80	Leadless Switching Diode
	CMPD 914	SOT-23	Single Switching Diode
	CMPD2836	SOT-23	Dual, Common Anode
	CMPD2838	SOT-23	Dual, Common Cathode
	CMPD7000	SOT-23	Dual, In Series
1N 914B	CLL4448	SOD-80	
	CMPD4448	SOT-23	
1N3600	BAS56	SOT-143	Dual High Current Diode, Isolated
	CLL4150	SOD-80	Leadless Switching Diode
	CMPD4150	SOT-23	Single Switching Diode
1N4001	CMR1-02	SMB	
	CMR1-02M	SMA	
1N4002	CMR1-02	SMB	
	CMR1-02M	SMA	
1N4003	CMR1-04	SMB	
	CMR1-04M	SMA	
1N4004	CMR1-04	SMB	
	CMR1-04M	SMA	
1N4005	CMR1-06	SMB	
	CMR1-06M	SMA	
1N4006	CMR1-10	SMB	
	CMR1-10M	SMA	
1N4007	CMR1-10	SMB	
	CMR1-10M	SMA	
1N4148	BAS28	SOT-143	Dual, Isolated
	CLL 914	SOD-80	Leadless Switching Diode
	CMPD 914	SOT-23	Single Switching Diode
	CMPD2836	SOT-23	Dual, Common Anode
	CMPD2838	SOT-23	Dual, Common Cathode
	CMPD7000	SOT-23	Dual, In Series
1N4150	BAS56	SOT-143	Dual High Current Diode, Isolated
	CLL4150	SOD-80	Leadless Switching Diode
	CMPD4150	SOT-23	Single Switching Diode
1N4448	CLL4448	SOD-80	Leadless Switching Diode
	CMPD2836	SOT-23	Dual, Common Anode
	CMPD2838	SOT-23	Dual, Common Cathode
	CMPD4448	SOT-23	Single Switching Diode
	CMPD7000	SOT-23	Dual, In Series
1N4933	CMR1U-01	SMB	
	CMR1U-01M	SMA	

Leaded to Surface Mount Equivalents (Continued)

LEADED	SMD	CASE	COMMENTS
1N4934	CMR1U-01	SMB	
	CMR1U-01M	SMA	
1N4935	CMR1U-02	SMB	
	CMR1U-02M	SMA	
1N4936	CMR1U-04	SMB	
	CMR1U-04M	SMA	
1N4937	CMR1U-06	SMB	
	CMR1U-06M	SMA	
1N5817	CMSH1-20	SMB	
	CMSH1-20M	SMA	
1N5818	CMSH1-40	SMB	
	CMSH1-40M	SMA	
1N5819	CMSH1-40	SMB	
	CMSH1-40M	SMA	
1N6263	CMPD6263	SOT-23	Single Configuration
	CMPD6263A	SOT-23	Dual, Common Anode
	CMPD6263C	SOT-23	Dual, Common Cathode
	CMPD6263S	SOT-23	Dual, In Series
2N 918	CMPT 918	SOT-23	
2N2222A	CMPT2222A	SOT-23	
	CXT2222A	SOT-89	
	CZT2222A	SOT-223	
2N2369	CMPT2369	SOT-23	
2N2484	CMPT2484	SOT-23	
2N2907A	CMPT2907A	SOT-23	
	CXT2907A	SOT-89	
	CZT2907A	SOT-223	
2N3019	CXT3019	SOT-89	
	CZT3019	SOT-223	
2N3904	CMPT3904	SOT-23	
	CXT3904	SOT-89	
	CZT3904	SOT-223	
2N3906	CMPT3906	SOT-23	
	CXT3906	SOT-89	
	CZT3906	SOT-223	
2N4033	CXT4033	SOT-89	
	CZT4033	SOT-223	

Leaded to Surface Mount Equivalents (Continued)

LEADED	SMD	CASE	COMMENTS
2N4391	CMPF4391	SOT-23	
2N4392	CMPF4392	SOT-23	
2N4393	CMPF4393	SOT-23	
2N4401	CMPT4401	SOT-23	
2N4403	CMPT4403	SOT-23	
2N4416A	CMPF4416A	SOT-23	
2N5060 thru 2N5064	CMPS5064	SOT-23	
2N5086	CMPT5086	SOT-23	
2N5087	CMPT5087	SOT-23	
2N5088	CMPT5088	SOT-23	
2N5089	CMPT5089	SOT-23	
2N5179	CMPT5179	SOT-23	
2N5401	CMPT5401	SOT-23	
	CXT5401	SOT-89	
	CZT5401	SOT-223	
2N5460	CMPF5460	SOT-23	Special order, consult factory
2N5461	CMPF5461	SOT-23	Special order, consult factory
2N5462	CMPF5462	SOT-23	Special order, consult factory
2N5485	CMPF5485	SOT-23	Special order, consult factory
2N5551	CMPT5551	SOT-23	
	CXT5551	SOT-89	
	CZT5551	SOT-223	
2N6427	CMPT6427	SOT-23	
2N6428	CMPT6428	SOT-23	
2N6429	CMPT6429	SOT-23	
2N6517	CMPT6517	SOT-23	
2N6520	CMPT6520	SOT-23	
CDSH-4	CMPSH-3	SOT-23	Single Configuration
	CMPSH-3A	SOT-23	Dual, Common Anode
	CMPSH-3C	SOT-23	Dual, Common Cathode
	CMPSH-3S	SOT-23	Dual, In Series

Leaded to Surface Mount Equivalents (Continued)

LEADED	SMD	CASE	COMMENTS
D44H11	CJD44H11	DPAK	
D45H11	CJD45H11	DPAK	
CSSD2003	CLL2003	SOD-80	
	CMPD2003	SOT-23	
MPS650	CBCP68	SOT-223	
	CBCX68	SOT-89	
MPS750	CBCP69	SOT-223	
	CBCX69	SOT-89	
MPS8099	CMPT8099	SOT-23	
MPS8599	CMPT8599	SOT-23	
MPSA06	CMPTA06	SOT-23	
MPSA13	CMPTA13	SOT-23	
MPSA14	CMPTA14	SOT-23	
	CXTA14	SOT-89	
	CZTA14	SOT-223	
MPSA27	CMPTA27	SOT-23	
	CZTA27	SOT-89	
MPSA42	CMPTA42	SOT-23	
	CXTA42	SOT-89	
	CZTA42	SOT-223	
MPSA44	CMPTA44	SOT-23	
	CZTA44	SOT-223	
MPSA56	CMPTA56	SOT-23	
MPSA63	CMPTA63	SOT-23	
MPSA64	CMPTA64	SOT-23	
	CXTA64	SOT-89	
	CZTA64	SOT-223	
MPSA92	CMPTA92	SOT-23	
	CXTA92	SOT-89	
	CZTA92	SOT-223	
MPSH10	CMPTH10	SOT-23	
PN3640	CMPT3640	SOT-23	
PN3646	CMPT3646	SOT-23	

Marking Codes

Marking Code	Part Number
1A	BC846A
1B	BC846B
1E	BC847A
1F	BC847B
1FF	CMPT5551
1G	BC847C
1J	BC848A
1K	BC848B
1L	BC848C
1P	CMDZ18L
18A	CMPZ5221B
18B	CMPZ5222B
18C	CMPZ5223B
18D	CMPZ5224B
18E	CMPZ5225B
2B	BC849B
2C	BC849C
2F	BC850B
2G	BC850C
2P	CMDZ20L
3A	BC856A
3B	BC856B
3E	BC857A
3F	BC857B
3G	BC857C
3J	BC858A
3K	BC858B
3L	BC858C
3P	CMDZ22L
4A	BC859A
4B	BC859B
4C	BC859C
4E	BC860A
4F	BC860B
4G	BC860C
4P	CMDZ24L
5A	BC807.16
5B	BC807.25
5C	BC807.40

Marking Code	Part Number
5E	BC808.16
5F	BC808.25
5G	BC808.40
5P	CMDZ27L
6A	BC817.16
6B	BC817.25
6B	CMPF5484
6B1	CMPF5485
6BG	CMPF4416A
6C	BC817.40
6E	BC818.16
6E	CMPF5460
6E1	CMPF5461
6E2	CMPF5462
6F	BC818.25
6G	BC818.40
6G	CMPF4393
6H	CMPF5486
6J	CMPF4391
6K	CMPF4392
6P	CMDZ30L
6S	CMPFJ176
6T	CMPFJ310
6W	CMPFJ175
6X	CMPFJ174
702	2N7002
7P	CMDZ33L
81A	CMPZ5250B
81B	CMPZ5251B
81C	CMPZ5252B
81D	CMPZ5253B
81E	CMPZ5254B
81F	CMPZ5255B
81G	CMPZ5256B
81H	CMPZ5257B
81J	CMPZ5258B
81K	CMPZ5259B
81L	CMPZ5260B
81M	CMPZ5261B

Marking Code	Part Number
8P	CMDZ36L
A61	BAS28
A82	CMPD2003
A91	CBAS17
AA	BCW60A
AAD	CMPD4448
AB	BCW60B
ABA	CMPD4150
AC	BCW60C
AD	BCW60D
AG	BCX70G
AH	BCX70H
AJ	BCX70J
AK	BCX70K
B2	BSV52
BA	BCW61A
BB	BCW61B
BC	BCW61C
BD	BCW61D
BG	BCX71G
BH	BCX71H
BJ	BCX71J
BK	BCX71K
C 02	CMR1-02
C 02M	CMR1-02M
C 04	CMR1-04
C 04M	CMR1-04M
C 06	CMR1-06
C 06M	CMR1-06M
C 1	BCW29
C 1A	CMPT3904
C 1D	CMPTA42
C 1G	CMPTA06
C 1J	CMPT2369
C 1K	CMPT6428
C 1L	CMPT6429
C 1M	CMPTA13
C 1N	CMPTA14
C 1P	CMPT2222A

Marking Codes (Continued)

Marking Code	Part Number	Marking Code	Part Number	Marking Code	Part Number
C 1Q	CMPT5088	C 8H	CMPZ5233B	CS 20	CMSH1-20
C 1R	CMPT5089	C 8J	CMPZ5234B	CS 20M	CMSH1-20M
C 1U	CMPT2484	C 8K	CMPZ5235B	CS 40	CMSH1-40
C 1V	CMPT6427	C 8L	CMPZ5236B	CS 40M	CMSH1-40M
C 1X	CMPT 930	C 8M	CMPZ5237B	CS 60	CMSH1-60
C 1Z	CMPT6517	C 8N	CMPZ5238B	CS 60M	CMSH1-60M
C 2	BCW30	C 8P	CMPZ5239B	CS100	CMSH1-100
C 2A	CMPT3906	C 8Q	CMPZ5240B	CS220	CMSH2-20
C 2D	CMPTA92	C 8R	CMPZ5241B	CS240	CMSH2-40
C 2F	CMPT2907A	C 8S	CMPZ5242B	CS260	CMSH2-60
C 2G	CMPTA56	C 8T	CMPZ5243B	CS320	CMSH3-20
C 2J	CMPT3640	C 8U	CMPZ5244B	CS340	CMSH3-40
C 2L	CMPT5401	C 8V	CMPZ5245B	CS360	CMSH3-60
C 2P	CMPT5086	C 8W	CMPZ5246B	CU01	CMR1U-01
C 2Q	CMPT5087	C 8X	CMPZ5247B	CU01M	CMR1U-01M
C 2R	CMPT3646	C 8Y	CMPZ5248B	CU02	CMR1U-02
C 2T	CMPT4403	C 8Z	CMPZ5249B	CU02M	CMR1U-02M
C 2U	CMPTA63	C10	CMR1-10	CU04	CMR1U-04
C 2V	CMPTA64	C10M	CMR1-10M	CU04M	CMR1U-04M
C 2W	CMPT8599	C29	CMPTA29	CU06	CMR1U-06
C 2X	CMPT4401	C202	CMR2-02	CU06M	CMR1U-06M
C 2Z	CMPT6520	C204	CMR2-04	CU201	CMR2U-01
C 3A	CMPT3019	C206	CMR2-06	CU202	CMR2U-02
C 3B	CMPT 918	C210	CMR2-10	CU204	CMR2U-04
C 3E	CMPTH10	C302	CMR3-02	CU206	CMR2U-06
C 3Z	CMPTA44	C304	CMR3-04	CU301	CMR3U-01
C 4A	CMPT4033	C306	CMR3-06	CU302	CMR3U-02
C 5C	CMPD7000	C310	CMR3-10	CU304	CMR3U-04
C 5D	CMPD 914	CA2	CMPD2836	CU306	CMR3U-06
C 7	BCF29	CA6	CMPD2838	D 1	BCW31
C 7H	CMPT5179	CF02M	CMR1F-02M	D 2	BCW32
C 8	BCF30	CF04M	CMR1F-04M	D 3	BCW33
C 8A	CMPZ5226B	CF06M	CMR1F-06M	D 7	BCF32
C 8B	CMPZ5227B	CF10M	CMR1F-10M	D 8	BCF33
C 8C	CMPZ5228B	CH1J	CHT2369A	D49	CMPD5001S
C 8D	CMPZ5229B	CH1P	CHT2222A	D53	CMPD2004
C 8E	CMPZ5230B	CH2F	CHT2907A	D76	CMPD6263
C 8F	CMPZ5231B	CH3B	CHT 918	D95	CMPSH-3
C 8G	CMPZ5232B	CKB	CMPT8099	D96	CMPD6263S

Marking Codes (Continued)

Marking Code	Part Number	Marking Code	Part Number	Marking Code	Part Number
D97	CMPD6263C	NP	CMDZ5L6	Y 7	BZX84C20
D98	CMPD6263A	OP	CMDZ6L2	Y 8	BZX84C22
DA	BCW67A	P2D	CMPS5064	Y 9	BZX84C24
DA2	CMPD5001	PP	CMDZ6L8	Y10	BZX84C27
DA5	CMPSH-3S	QP	CMDZ7L5	Y11	BZX84C30
DB	BCW67B	RP	CMDZ8L2	Y12	BZX84C33
DB1	CMPSH-3A	S1	CMDSH-3	YP	CMDZ15L
DB2	CMPSH-3C	S2	CMDSH2-3	YY1	CMPZDA11V
DB6	CMPD2004S	SP	CMDZ9L1	YY2	CMPZDA12V
DC	BCW67C	T1	BCX17	YY3	CMPZDA13V
DF	BCW68F	T2	BCX18	YY4	CMPZDA15V
DG	BCW68G	T7	BSR15	YY5	CMPZDA16V
DH	BCW68H	T8	BSR16	YY6	CMPZDA18V
EA	BCW65A	TP	CMDZ10L	YY7	CMPZDA20V
EB	BCW65B	U1	BCX19	YY8	CMPZDA22A
EC	BCW65C	U2	BCX20	YY9	CMPZDA24V
EF	BCW66F	U7	BSR13	Z1	BZX84C4V7
EG	BCW66G	U8	BSR14	Z2	BZX84C5V1
EH	BCW66H	U9	BSR17	Z3	BZX84C5V6
FD	BCV26	U92	BSR17A	Z4	BZX84C6V2
FE	BCV46	UP	CMDZ11L	Z5	BZX84C6V8
FF	BCV27	VP	CMDZ12L	Z6	BZX84C7V5
FG	BCV47	W 6	BZX84C3V3	Z7	BZX84C8V2
FG	CMPTA27	W 7	BZX84C3V6	Z8	BZX84C9V1
H1	BCW69	W 8	BZX84C3V9	Z9	BZX84C10
H2	BCW70	W 9	BZX84C4V3	ZP	CMDZ16L
H3	BCW89	W10	CMPZDA27V	ZZ1	CMPZDA4V7
H7	BCF70	W11	CMPZDA30V	ZZ2	CMPZDA5V1
K1	BCW71	W12	CMPZDA33V	ZZ3	CMPZDA5V6
K2	BCW72	WW7	CMPZDA3V6	ZZ4	CMPZDA6V2
K3	BCW81	WW8	CMPZDA3V9	ZZ5	CMPZDA6V8
K7	BCV71	WW9	CMPZDA4V3	ZZ6	CMPZDA7V5
K8	BCV72	XP	CMDZ13L	ZZ7	CMPZDA8V2
K9	BCF81	Y 1	BZX84C11	ZZ8	CMPZDA9V1
L20	CMPD1001	Y 2	BZX84C12	ZZ9	CMPZDA10V
L21	CMPD1001S	Y 3	BZX84C13		
L22	CMPD1001A	Y 4	BZX84C15		
L51	BAS56	Y 5	BZX84C16		
LP	CMDZ5L1	Y 6	BZX84C18		

Power dissipation of a surface mounted discrete semiconductor is dependent on many factors among which are, substrate material/ thickness, bonding pad surface area/thickness, and proximity of the device to other components. The most critical of these is substrate material. Due to these variables, power dissipation is listed below as a range.

Power Dissipation

CASE	POWER DISSIPATION RANGE
DPAK	12.5W - 20W
SOT-23	200mW - 400mW
SOT-89	400mW - 1600mW
SOT-143	200mW - 400mW
SOT-223	1000mW - 2000mW
SOD-80	350mW - 600mW
MELF	900mW - 1200mW
SMA	1000mW - 2000mW
SMB	1000mW - 2000mW

The low end of the power dissipation range relates to device dissipation in 'free air @ T_A= 25°C." The upper end of the range relates to optimum dissipation levels which are attainable when the SMD is mounted on an alumina (ceramic) substrate.

Midrange dissipation levels are for traditional glass-epoxy PC boards (FR-4 material).

It is important that the design engineer consider all the factors influencing power dissipation for each application.

Typical Reliability Data, SOT-23 Transistor

TEST	TEST CONDITION	SAMPLE SIZE	UNIT HOURS	NO. FAILURES	FAILURE RATE (1) (%/1000 HRS)
OPERATING LIFE (LOAD LIFE)	T_A=25°C, P=P_D MAX V_{CB}=80% V_{CB} MAX t=1000 hours	1160	$1.16x10^6$	1	0.18
HIGH TEMPERATURE STORAGE LIFE	T_A=150°C t=1000 hours	1160	$1.16x10^6$	0	0.08
HIGH TEMPERATURE REVERSE BIAS LIFE	T_A=125°C V_{CB}=80% V_{CB} MAX t=1000 hours	1160	$1.16x10^6$	2	0.27
HUMIDITY LIFE (MOISTURE RESISTANCE)	T_A=85°C, R.H.=85% MIL-STD 202, Method 103B t=1000 hours, Condition B	1160	$1.16x10^6$	2	0.27
TEMPERATURE CYCLING (THERMAL SHOCK)	T_L=-55°C, T_H=150°C t_L=t_H=30 min $t_{TRANSFER}$=2 min. max @ T_A=25°C 5 cycles	1160	--	1	--
PRESSURE COOKER (MOISTURE RESISTANCE)	T_A=122°C, P=2 atmos. 6 hours per cycle 5 cycles (30 hours total)	1160	--	2	--
SOLDERING HEAT (THERMAL SHOCK)	T_A=260°±5°C, 60Sn/40Pb total immersion $t_{IMMERSION}=10\ ^{+2}_{-0}$ sec	360	--	2	--

(1) 60% CONFIDENCE LEVEL

REL DATA

Typical Reliability Data (Continued)

SOT-23 Silicon Diode

TEST	TEST CONDITION	SAMPLE SIZE	UNIT HOURS	NO. FAILURES	FAILURE RATE (1) (%/1000 HRS)
OPERATING LIFE (LOAD LIFE)	T_A=25°C, I_O=80% I_O Rated V_R=80% V_R Rated t=1000 hours	60	$6x10^4$	0	1.5
HIGH TEMPERATURE STORAGE LIFE	T_A=150°C t=1000 hours	60	$6x10^4$	1	3.4
HIGH TEMPERATURE REVERSE BIAS LIFE	T_A=125°C V_R=80% V_R Rated t=1000 hours	60	$6x10^4$	1	3.4
HUMIDITY LIFE (MOISTURE RESISTANCE)	T_A=85°C, R.H.=85% MIL-STD 202, Method 103B t=1000 hours, Condition B	60	$6x10^4$	0	1.5
TEMPERATURE CYCLING (THERMAL SHOCK)	T_L=-55°C, T_H=150°C t_L=t_H=30 min tTRANSFER=2 min max @ T_A=25°C 5 cycles	60	--	0	--
PRESSURE COOKER (MOISTURE RESISTANCE)	T_A=122°C, P=2 atmos. 6 hours per cycle 5 cycles (30 hours total)	60	--	0	--
SOLDERING HEAT (THERMAL SHOCK)	T_A=260°±5°C, 60Sn/40Pb total immersion tIMMERSION=10^{+2}_{-0}sec	360	--	2	--

(1) 60% CONFIDENCE LEVEL

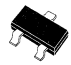
SOT-23 Zener Diode

TEST	TEST CONDITION	SAMPLE SIZE	UNIT HOURS	NO. FAILURES	FAILURE RATE (1) (%/1000 HRS)
OPERATING LIFE	T_A=25°C, P=P_D MAX t=1000 hours	60	$6x10^4$	0	1.5
HIGH TEMPERATURE STORAGE LIFE	T_A=150°C t=1000 hours	60	$6x10^4$	0	1.5
HUMIDITY LIFE (MOISTURE RESISTANCE)	T_A=85°C, R.H.=85% MIL-STD 202, Method 103B t=1000 hours, Condition B	60	$6x10^4$	1	3.4
TEMPERATURE CYCLING (THERMAL SHOCK)	T_L=-55°C, T_H=150°C t_L=t_H=30 min tTRANSFER=2 min max @ T_A=25°C 5 cycles	60	--	0	--
PRESSURE COOKER (MOISTURE RESISTANCE)	T_A=122°C, P=2 atmos. 6 hours per cycle 5 cycles (30 hours total)	60	--	0	--
SOLDERING HEAT (THERMAL SHOCK)	T_A=260°±5°C, 60Sn/40Pb total immersion tIMMERSION=10^{+2}_{-0}sec	360	--	2	--

(1) 60% CONFIDENCE LEVEL

Selection Guide

SELECT GUIDE



Small Signal Transistors U.S. Specification (Preferred Series)

SOT-23 Case, 350mW

TYPE NO.	BV_{CBO}	BV_{CEO} $^*BV_{CES}$	BV_{EBO}	I_{CBO} $^*I_{CES}$	@ V_{CB}	h_{FE}		@ V_{CE}	@ I_C	$V_{CE}(SAT)$	@ I_C	C_{ob}	f_T	NF	t_{OFF}
	(V)	(V)	(V)	(nA)	(V)			(V)	(mA)	(V)	(mA)	(pF)	(MHz)	(dB)	(ns)
	MIN	MIN	MIN	MAX		MIN	MAX			MAX		MAX	MIN	MAX	MAX

General Purpose Amplifier/Switches
Devices are listed in order of descending breakdown voltage.

NPN

CMPT8099	80	80	6.0	100	80	100	300	5.0	1.0	0.4	100	6.0	150	-	-
CMPT930	45	45	5.0	10	45	100	300	5.0	0.01	1.0	10	8.0	30	3.0	-
CMPT2222A	75	40	6.0	10	60	100	300	10	150	1.0	500	8.0	300	4.0	285
CMPT3904	60	40	6.0	50*	30	100	300	1.0	10	0.3	50	4.0	300	5.0	250
CMPT4401	60	40	6.0	100*	35	100	300	1.0	150	0.75	500	6.5	200	-	255

PNP

CMPT8599	80	80	5.0	100	80	100	300	5.0	1.0	0.4	100	4.5	150	-	-
CMPT2907A	60	60	5.0	10	50	100	300	10	150	1.6	500	8.0	200	-	100
CMPT3906	40	40	5.0	50*	30	100	300	1.0	10	0.4	50	4.5	250	4.0	300
CMPT4403	40	40	5.0	100*	35	100	300	2.0	150	0.75	500	8.5	200	-	255

Saturated Switches
Devices are listed in order of descending f_T.

NPN

CMPT2369	40	15	4.5	400	20	40	120	1.0	10	0.25	10	4.0	500	-	18
CMPT3646	40	15	5.0	500*	20	15	-	1.0	300	0.5	300	5.0	350	-	28

PNP

CMPT3640	12	12	4.0	10*	6.0	30	120	0.3	10	0.5	50	3.5	300	-	60

Low Noise Amplifiers
Devices are listed in order of ascending NF.

NPN

CMPT5089	30	25	4.5	50	15	400	1,200	5.0	0.1	0.5	10	4.0	50	2.0	-
CMPT2484	60	60	6.0	10	45	250	-	5.0	1.0	0.35	1.0	6.0	-	3.0	-
CMPT5088	35	30	4.5	50	20	300	900	5.0	0.1	0.5	10	4.0	50	3.0	-
CMPT6428	60	50	6.0	10	30	250	650	5.0	0.1	0.6	100	3.0	100	-	-
CMPT6429	55	45	6.0	10	30	500	1,250	5.0	0.1	0.6	100	3.0	100	-	-

PNP

CMPT5087	50	50	3.0	50	35	250	800	5.0	0.1	0.3	10	4.0	40	2.0	-
CMPT5086	50	50	3.0	50	35	150	500	5.0	0.1	0.3	10	4.0	40	3.0	-

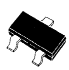
High Current
Devices are listed in order of descending breakdown voltage.

NPN

CMPT3019	120	80	7.0	10	90	100	300	10	150	0.5	500	12	100	4.0	-
CMPTA06	80	80	4.0	100	80	50	-	1.0	100	0.25	100	-	100	-	-

PNP

CMPT4033	80	80	5.0	50	60	100	300	5.0	100	0.5	500	20	100	-	-
CMPTA56	80	80	4.0	100	80	50	-	1.0	100	0.25	100	-	50	-	-



Small Signal Transistors U.S. Specification (Preferred Series)
SOT-23 Case, 350mW (Continued)

TYPE NO.	BV_{CBO} (V) MIN	BV_{CEO} $^*BV_{CES}$ (V) MIN	BV_{EBO} (V) MIN	I_{CBO} $^*I_{CES}$ (nA) MAX	@ V_{CB} (V)	h_{FE} MIN	h_{FE} MAX	@ V_{CE} (V)	@ I_C (mA)	$V_{CE(SAT)}$ (V) MAX	@ I_C (mA)	C_{ob} (pF) MAX	f_T (MHz) MIN	NF (dB) MAX	t_{OFF} (ns) MAX

High Voltage
Devices are listed in order of descending breakdown voltage.

NPN

TYPE NO.	BV_{CBO}	BV_{CEO}	BV_{EBO}	I_{CBO}	@ V_{CB}	h_{FE} MIN	h_{FE} MAX	@ V_{CE}	@ I_C	$V_{CE(SAT)}$	@ I_C	C_{ob}	f_T	NF	t_{OFF}
CMPTA44	450	400	6.0	100	400	30	200	10	10	0.75	50	7.0	20	-	-
CMPT6517	350	350	5.0	50	250	30	200	10	30	1.0	50	6.0	40	-	-
CMPTA42	300	300	6.0	100	200	40	-	10	30	0.5	20	3.0	50	-	-
CMPT5551	180	160	6.0	50	120	80	250	5.0	10	0.2	50	6.0	100	8.0	-

PNP

TYPE NO.	BV_{CBO}	BV_{CEO}	BV_{EBO}	I_{CBO}	@ V_{CB}	h_{FE} MIN	h_{FE} MAX	@ V_{CE}	@ I_C	$V_{CE(SAT)}$	@ I_C	C_{ob}	f_T	NF	t_{OFF}
CMPT6520	350	350	5.0	50	250	30	200	10	30	1.0	50	6.0	40	-	-
CMPTA92	300	300	5.0	250	200	25	-	10	30	0.5	20	6.0	50	-	-
CMPT5401	160	150	5.0	50	120	60	240	5.0	10	0.5	50	6.0	100	8.0	-

RF Oscillator
Devices are listed in order of descending f_T.

NPN

TYPE NO.	BV_{CBO}	BV_{CEO}	BV_{EBO}	I_{CBO}	@ V_{CB}	h_{FE} MIN	h_{FE} MAX	@ V_{CE}	@ I_C	$V_{CE(SAT)}$	@ I_C	C_{ob}	f_T	NF	t_{OFF}
CMPT5179	20	12	2.5	20	15	25	250	1.0	3.0	0.4	10	1.0	900	4.5	-
CMPTH10	30	25	3.0	100	25	60	-	10	4.0	0.5	4.0	0.7	650	-	-
CMPT918	30	15	3.0	10	15	20	-	1.0	3.0	0.4	10	1.7	600	6.0	-

Darlington
Devices are listed in order of descending h_{FE}.

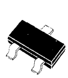
NPN

TYPE NO.	BV_{CBO}	BV_{CEO}	BV_{EBO}	I_{CBO}	@ V_{CB}	h_{FE} MIN	h_{FE} MAX	@ V_{CE}	@ I_C	$V_{CE(SAT)}$	@ I_C	C_{ob}	f_T	NF	t_{OFF}
CMPT6427	40	40	12	50	30	20,000	200,000	5.0	100	1.5	500	7.0	130	10	-
CMPTA14	30	30*	10	100	30	20,000	-	5.0	100	1.5	100	-	125	-	-
CMPTA13	30	30*	10	100	30	10,000	-	5.0	100	1.5	100	-	125	-	-
CMPTA27	60	60*	10	100	50	10,000	-	5.0	100	1.5	100	-	125	-	-
NEW CMPTA29	100	100	12	100	80	10,000	-	5.0	100	1.5	100	8.0	125	-	-

PNP

TYPE NO.	BV_{CBO}	BV_{CEO}	BV_{EBO}	I_{CBO}	@ V_{CB}	h_{FE} MIN	h_{FE} MAX	@ V_{CE}	@ I_C	$V_{CE(SAT)}$	@ I_C	C_{ob}	f_T	NF	t_{OFF}
CMPTA64	30	30*	10	100	30	20,000	-	5.0	100	1.5	100	-	125	-	-
CMPTA63	30	30*	10	100	30	10,000	-	5.0	100	1.5	100	-	125	-	-

Shaded areas indicate Darlington.



Small Signal MOSFET
SOT-23 Case

TYPE NO.	$r_{DS(ON)}$ (Ω) MAX	@ I_D (A)	$V_{GS(th)}$ (V) MIN	$V_{GS(th)}$ (V) MAX	BV_{DSS} (V) MIN	C_{iss} (pF) MAX	C_{rss} (pF) MAX	t_{on} (ns) MAX	t_{OFF} (ns) MAX
2N7002	7.5	0.5	1.0	2.5	60	50	5.0	20	20

SELECT GUIDE

Junction FETs

SOT-23 Case

Amplifiers

N Channel

TYPE NO.	BV_{GSS} (V) MIN	I_{DSS} (mA) MIN	I_{DSS} (mA) MAX	$V_{GS(OFF)}$ (V) MIN	$V_{GS(OFF)}$ (V) MAX	$r_{DS(ON)}$ (Ω) MAX	NF **TYP (dB) MAX	t_{OFF} (ns) MAX
CMPF4416A	35	5.0	15	2.5	6.0	-	2.0	-
CMPF5484*	25	1.0	5.0	0.3	3.0	-	3.0	-
CMPF5485	25	4.0	10	0.5	4.0	-	2.0	-
CMPF5486*	25	8.0	20	2.0	6.0	-	2.0	-
CMPFJ310*	25	24	60	2.0	6.5	-	1.5**	-

P Channel

TYPE NO.	BV_{GSS} (V) MIN	I_{DSS} (mA) MIN	I_{DSS} (mA) MAX	$V_{GS(OFF)}$ (V) MIN	$V_{GS(OFF)}$ (V) MAX	$r_{DS(ON)}$ (Ω) MAX	NF **TYP (dB) MAX	t_{OFF} (ns) MAX
CMPF5460*	40	1.0	5.0	0.75	6.0	-	2.5	-
CMPF5461*	40	2.0	9.0	1.0	7.5	-	2.5	-
CMPF5462*	40	4.0	16	1.8	9.0	-	2.5	-

Switches / Choppers

N Channel

TYPE NO.	BV_{GSS} (V) MIN	I_{DSS} (mA) MIN	I_{DSS} (mA) MAX	$V_{GS(OFF)}$ (V) MIN	$V_{GS(OFF)}$ (V) MAX	$r_{DS(ON)}$ (Ω) MAX	NF **TYP (dB) MAX	t_{OFF} (ns) MAX
CMPF4391	40	50	150	4.0	10	30	-	20
CMPF4392	40	25	75	2.0	5.0	60	-	35
CMPF4393	40	5.0	30	0.5	3.0	100	-	50

P Channel

TYPE NO.	BV_{GSS} (V) MIN	I_{DSS} (mA) MIN	I_{DSS} (mA) MAX	$V_{GS(OFF)}$ (V) MIN	$V_{GS(OFF)}$ (V) MAX	$r_{DS(ON)}$ (Ω) MAX	NF **TYP (dB) MAX	t_{OFF} (ns) MAX
CMPFJ174*	30	2.0	100	5.0	10	85	-	-
CMPFJ175*	30	7.0	60	3.0	6.0	125	-	-
CMPFJ176*	30	2.0	25	1.0	4.0	250	-	-

*Available on special order, consult factory.

Transistors SOT-23 Case Proelectron Series 350mW

TYPE NO.	DESCRIPTION	BV_{CBO} (VOLTS) MIN	BV_{CEO} (VOLTS) MIN	BV_{EBO} (VOLTS) MIN	I_{CBO} (nA) MAX	@ V_{CB} (VOLTS)	h_{FE} MIN	h_{FE} MAX	@ V_{CE} (VOLTS)	@ I_C (mA)	V_{CE} (SAT) (VOLTS) MAX	@ I_C (mA)	C_{ob} (pF) MAX	f_T (MHz) TYP	NF (dB) MAX	t_{OFF} (ns) MAX	MARKING CODE	SIMILAR LEADED DEVICE
BC807	PNP HIGH CURRENT	50*	45	5.0	100	20	100	600	1.0	100	0.70	500	8.0	100	—	—		BC327
BC807.16	PNP HIGH CURRENT	50*	45	5.0	100	20	100	250	1.0	100	0.70	500	8.0	100	—	—	5A	BC327.16
BC807.25	PNP HIGH CURRENT	50*	45	5.0	100	20	160	400	1.0	100	0.70	500	8.0	100	—	—	5B	BC327.25
BC807.40	PNP HIGH CURRENT	50*	45	5.0	100	20	250	600	1.0	100	0.70	500	8.0	100	—	—	5C	BC327.40
BC808	PNP HIGH CURRENT	30*	25	5.0	100	20	100	600	1.0	100	0.70	500	8.0	100	—	—		BC328
BC808.16	PNP HIGH CURRENT	30*	25	5.0	100	20	100	250	1.0	100	0.70	500	8.0	100	—	—	5E	BC328.16
BC808.25	PNP HIGH CURRENT	30*	25	5.0	100	20	160	400	1.0	100	0.70	500	8.0	100	—	—	5F	BC328.25
BC808.40	PNP HIGH CURRENT	30*	25	5.0	100	20	250	600	1.0	100	0.70	500	8.0	100	—	—	5G	BC328.40
BC817	NPN HIGH CURRENT	50*	45	5.0	100	20	100	600	1.0	100	0.70	500	5.0	200	—	—		BC337
BC817.16	NPN HIGH CURRENT	50*	45	5.0	100	20	100	250	1.0	100	0.70	500	5.0	200	—	—	6A	BC337.16
BC817.25	NPN HIGH CURRENT	50*	45	5.0	100	20	160	400	1.0	100	0.70	500	5.0	200	—	—	6B	BC337.25
BC817.40	NPN HIGH CURRENT	50*	45	5.0	100	20	250	600	1.0	100	0.70	500	5.0	200	—	—	6C	BC337.40
BC818	NPN HIGH CURRENT	30*	25	5.0	100	20	100	600	1.0	100	0.70	500	5.0	200	—	—		BC338
BC818.16	NPN HIGH CURRENT	30*	25	5.0	100	20	100	250	1.0	100	0.70	500	5.0	200	—	—	6E	BC338.16
BC818.25	NPN HIGH CURRENT	30*	25	5.0	100	20	160	400	1.0	100	0.70	500	5.0	200	—	—	6F	BC338.25
BC818.40	NPN HIGH CURRENT	30*	25	5.0	100	20	250	600	1.0	100	0.70	500	5.0	200	—	—	6G	BC338.40
BC846	NPN LOW NOISE	80	65	6.0	15	30	110	450	5.0	2.0	0.60	100	2.5	300	10	—		BC546
BC846A	NPN LOW NOISE	80	65	6.0	15	30	110	220	5.0	2.0	0.60	100	2.5	300	10	—	1A	BC546A
BC846B	NPN LOW NOISE	80	65	6.0	15	30	200	450	5.0	2.0	0.60	100	2.5	300	10	—	1B	BC546B
BC847	NPN LOW NOISE	50	45	6.0	15	30	110	800	5.0	2.0	0.60	100	2.5	300	10	—		BC547
BC847A	NPN LOW NOISE	50	45	6.0	15	30	110	220	5.0	2.0	0.60	100	2.5	300	10	—	1E	BC547A
BC847B	NPN LOW NOISE	50	45	6.0	15	30	200	450	5.0	2.0	0.60	100	2.5	300	10	—	1F	BC547B
BC847C	NPN LOW NOISE	50	45	6.0	15	30	420	800	5.0	2.0	0.60	100	2.5	300	10	—	1G	BC547C
BC848	NPN LOW NOISE	30	30	5.0	15	30	110	800	5.0	2.0	0.60	100	2.5	300	10	—		BC548
BC848A	NPN LOW NOISE	30	30	5.0	15	30	110	220	5.0	2.0	0.60	100	2.5	300	10	—	1J	BC548A
BC848B	NPN LOW NOISE	30	30	5.0	15	30	200	450	5.0	2.0	0.60	100	2.5	300	10	—	1K	BC548B
BC848C	NPN LOW NOISE	30	30	5.0	15	30	420	800	5.0	2.0	0.60	100	2.5	300	10	—	1L	BC548C
BC849	NPN LOW NOISE	30	30	5.0	15	30	200	800	5.0	2.0	0.60	100	2.5	300	4.0	—		BC549
BC849B	NPN LOW NOISE	30	30	5.0	15	30	200	450	5.0	2.0	0.60	100	2.5	300	4.0	—	2B	BC549B
BC849C	NPN LOW NOISE	30	30	5.0	15	30	420	800	5.0	2.0	0.60	100	2.5	300	4.0	—	2C	BC549C
BC850	NPN LOW NOISE	50	50	5.0	15	30	200	800	5.0	2.0	0.60	100	2.5	300	3.0	—		BC550
BC850B	NPN LOW NOISE	50	50	5.0	15	30	200	450	5.0	2.0	0.60	100	2.5	300	3.0	—	2F	BC550B
BC850C	NPN LOW NOISE	50	50	5.0	15	30	420	800	5.0	2.0	0.60	100	2.5	300	3.0	—	2G	BC550C
BC856	PNP LOW NOISE	80	65	5.0	15	30	75	800	5.0	2.0	0.65	100	4.5	150	10	—		BC556
BC856A	PNP LOW NOISE	80	65	5.0	15	30	125	250	5.0	2.0	0.65	100	4.5	150	10	—	3A	BC556A
BC856B	PNP LOW NOISE	80	65	5.0	15	30	220	475	5.0	2.0	0.65	100	4.5	150	10	—	3B	BC556B
BC857	PNP LOW NOISE	50	45	5.0	15	30	75	800	5.0	2.0	0.65	100	4.5	150	10	—		BC557
BC857A	PNP LOW NOISE	50	45	5.0	15	30	125	250	5.0	2.0	0.65	100	4.5	150	10	—	3E	BC557A
BC857B	PNP LOW NOISE	50	45	5.0	15	30	220	475	5.0	2.0	0.65	100	4.5	150	10	—	3F	BC557B
BC857C	PNP LOW NOISE	50	45	5.0	15	30	420	800	5.0	2.0	0.65	100	4.5	150	10	—	3G	BC557C
BC858	PNP LOW NOISE	30	30	5.0	15	30	75	800	5.0	2.0	0.65	100	4.5	150	10	—		BC558
BC858A	PNP LOW NOISE	30	30	5.0	15	30	125	250	5.0	2.0	0.65	100	4.5	150	10	—	3J	BC558A

*BV_{CES}

SMD Transistors SOT-23 Case 350mW
Proelectron Series—Cont'd

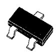
TYPE NO.	DESCRIPTION	BV_{CBO} (VOLTS) MIN	BV_{CEO} (VOLTS) MIN	BV_{EBO} (VOLTS) MIN	I_{CBO} (nA) MAX	@ V_{CB} (VOLTS)	h_{FE} MIN	h_{FE} MAX	@ V_{CE} (VOLTS)	@ I_C (mA)	V_{CE} (SAT) (VOLTS) MAX	@ I_C (mA)	C_{ob} (pF) MAX	f_T (MHz) TYP	NF (dB) MAX	t_{OFF} (ns) MAX	MARKING CODE	SIMILAR LEADED DEVICE
BC858B	PNP LOW NOISE	30	30	5.0	15	30	220	475	5.0	2.0	0.65	100	4.5	150	10	—	3K	BC558B
BC858C	PNP LOW NOISE	30	30	5.0	15	30	420	800	5.0	2.0	0.65	100	4.5	150	10	—	3L	BC558C
BC859	PNP LOW NOISE	30	30	5.0	15	30	125	800	5.0	2.0	0.65	100	4.5	150	4.0	—		BC559
BC859A	PNP LOW NOISE	30	30	5.0	15	30	125	250	5.0	2.0	0.65	100	4.5	150	4.0	—	4A	BC559A
BC859B	PNP LOW NOISE	30	30	5.0	15	30	220	475	5.0	2.0	0.65	100	4.5	150	4.0	—	4B	BC559B
BC859C	PNP LOW NOISE	30	30	5.0	15	30	420	800	5.0	2.0	0.65	100	4.5	150	4.0	—	4C	BC559C
BC860	PNP LOW NOISE	50	45	5.0	15	30	125	800	5.0	2.0	0.65	100	4.5	150	3.0	—		BC560
BC860A	PNP LOW NOISE	50	45	5.0	15	30	125	250	5.0	2.0	0.65	100	4.5	150	3.0	—	4E	BC560A
BC860B	PNP LOW NOISE	50	45	5.0	15	30	230	475	5.0	2.0	0.65	100	4.5	150	3.0	—	4F	BC560B
BC860C	PNP LOW NOISE	50	45	5.0	15	30	420	800	5.0	2.0	0.65	100	4.5	150	3.0	—	4G	BC560C
BCF29	PNP LOW NOISE	32	32	5.0	100	32	120	260	5.0	2.0	0.30	10	4.5	150	4.0	—	C7	—
BCF30	PNP LOW NOISE	32	32	5.0	100	32	215	500	5.0	2.0	0.30	10	4.5	150	4.0	—	C8	—
BCF32	NPN LOW NOISE	32	32	5.0	100	32	200	450	5.0	2.0	0.25	10	2.5	300	4.0	—	D7	—
BCF33	NPN LOW NOISE	32	320	5.0	100	32	420	800	5.0	2.05	0.25	105	2.5	300	4.0	—	D8	—
BCF70	PNP LOW NOISE	50	45	5.0	100	20	215	500	5.0	2.0	0.30	10	4.5	150	4.0	—	H7	—
BCF81	NPN LOW NOISE	50	45	5.0	100	20	420	800	5.0	2.0	0.25	10	2.5	300	4.0	—	K9	—
BCV26	PNP DARLINGTON	40	30	10	100	30	20,000	—	5.0	100	1.0	100	3.5	220	—	—	FD	MPSA64
BCV27	NPN DARLINGTON	40	30	10	100	30	20,000	—	5.0	100	1.0	100	3.5	220	—	—	FF	MPSA14
BCV46	PNP DARLINGTON	80	60	10	100	30	10,000	—	5.0	100	1.0	100	3.5	220	—	—	FE	MPSA77
BCV47	NPN DARLINGTON	80	60	10	100	30	10,000	—	5.0	100	1.0	100	3.5	220	—	—	FG	MPSA27
BCV71	NPN LOW NOISE	80	60	5.0	100	20	110	220	5.0	2.0	0.25	10	2.5	300	10	—	K7	—
BCV72	NPN LOW NOISE	80	60	5.0	100	20	200	450	5.0	2.0	0.25	10	2.5	300	10	—	K8	—
BCW29	PNP LOW NOISE	32	32	5.0	100	32	120	260	5.0	2.0	0.30	10	4.5	150	10	—	C1	—
BCW30	PNP LOW NOISE	32	32	5.0	100	32	215	500	5.0	2.0	0.30	10	4.5	150	10	—	C2	—
BCW31	NPN LOW NOISE	32	32	5.0	100	32	110	220	5.0	2.0	0.25	10	2.5	300	10	—	D1	—
BCW32	NPN LOW NOISE	32	32	5.0	100	32	200	450	5.0	2.0	0.25	10	2.5	300	10	—	D2	—
BCW33	NPN LOW NOISE	32	32	5.0	100	32	420	800	5.0	2.0	0.25	10	2.5	300	10	—	D3	—
BCW60	NPN LOW NOISE	32*	32	5.0	20	32	130	630	5.0	2.0	0.55	50	2.5	250	6.0	—		—
BCW60A	NPN LOW NOISE	32*	32	5.0	20	32	120	220	5.0	2.0	0.55	50	2.5	250	6.0	—	AA	—
BCW60B	NPN LOW NOISE	32*	32	5.0	20*	32	180	310	5.0	2.0	0.55	50	2.5	250	6.0	—	AB	—
BCW60C	NPN LOW NOISE	32*	32	5.0	20*	32	250	460	5.0	2.0	0.55	50	2.5	250	6.0	—	AC	—
BCW60D	NPN LOW NOISE	32*	32	5.0	20*	32	380	630	5.0	2.0	0.55	50	2.5	250	6.0	—	AD	—
BCW61	PNP LOW NOISE	32*	32	5.0	20*	32	120	630	5.0	2.0	0.55	50	4.5	180	6.0	—		—
BCW61A	PNP LOW NOISE	32*	32	5.0	20*	32	120	220	5.0	2.0	0.55	50	4.5	180	6.0	—	BA	—
BCW61B	PNP LOW NOISE	32*	32	5.0	20*	32	180	310	5.0	2.0	0.55	50	4.5	180	6.0	—	BB	—
BCW61C	PNP LOW NOISE	32*	32	5.0	20*	32	250	460	5.0	2.0	0.55	50	4.5	180	6.0	—	BC	—
BCW61D	PNP LOW NOISE	32*	32	5.0	20*	32	380	630	5.0	2.0	0.55	50	4.5	180	6.0	—	BD	—
BCW65	NPN HIGH CURRENT	60	32	5.0	20	32	100	630	1.0	100	0.70	500	6.0	170	—	—		—
BCW65A	NPN HIGH CURRENT	60	32	5.0	20	32	100	250	1.0	100	0.70	500	6.0	170	—	—	EA	
BCW65B	NPN HIGH CURRENT	60	32	5.0	20	32	160	400	1.0	100	0.70	500	6.0	170	—	—	EB	—
BCW65C	NPN HIGH CURRENT	60	32	5.0	20	32	250	630	1.0	100	0.70	500	6.0	170	—	—	EC	—
BCW66	NPN HIGH CURRENT	75	45	5.0	20	45	100	630	1.0	100	0.70	500	6.0	170	—	—		—
BCW66F	NPN HIGH CURRENT	75	45	5.0	20	45	100	250	1.0	100	0.70	500	6.0	170	—	—	EF	—
BCW66G	NPN HIGH CURRENT	75	45	5.0	20	45	160	400	1.0	100	0.70	500	6.0	170	—	—	EG	—
BCW66H	NPN HIGH CURRENT	75	45	5.0	20	45	250	630	1.0	100	0.70	500	6.0	170	—	—	EH	—
BCW67	PNP HIGH CURRENT	45	32	5.0	20	32	100	630	1.0	100	0.70	500	6.0	200	—	—		—
BCW67A	PNP HIGH CURRENT	45	32	5.0	20	32	100	250	1.0	100	0.70	500	6.0	200	—	—	DA	—
BCW67B	PNP HIGH CURRENT	45	32	5.0	20	32	160	400	1.0	100	0.70	500	6.0	200	—	—	DB	—
BCW67C	PNP HIGH CURRENT	45	32	5.0	20	32	250	630	1.0	100	0.70	500	6.0	200	—	—	DC	—
BCW68	PNP HIGH CURRENT	60	45	5.0	20	45	100	630	1.0	100	0.70	500	6.0	200	—	—		—
BCW68F	PNP HIGH CURRENT	60	45	5.0	20	45	100	250	1.0	100	0.70	500	6.0	200	—	—	DF	—
BCW68G	PNP HIGH CURRENT	60	45	5.0	20	45	160	400	1.0	100	0.70	500	6.0	200	—	—	DG	—
BCW68H	PNP HIGH CURRENT	60	45	5.0	20	45	250	630	1.0	100	0.70	500	6.0	200	—	—	DH	—
BCW69	PNP LOW NOISE	50	45	5.0	100	20	120	260	5.0	2.0	0.30	10	4.5	150	10	—	H1	—
BCW70	PNP LOW NOISE	50	45	5.0	100	20	215	500	5.0	2.0	0.30	10	4.5	150	10	—	H2	—
BCW71	NPN LOW NOISE	50	45	5.0	100	20	110	220	5.0	2.0	0.25	10	2.5	300	10	—	K1	—
BCW72	NPN LOW NOISE	50	45	5.0	100	20	200	450	5.0	2.0	0.25	10	2.5	300	10	—	K2	—
BCW81	NPN LOW NOISE	50	45	5.0	100	20	420	800	5.0	2.0	0.25	10	2.5	300	10	—	K3	—
BCW89	PNP LOW NOISE	80	60	5.0	100	20	120	260	5.0	2.0	0.30	10	4.5	150	10	—	H3	—
BCX17	PNP HIGH CURRENT	50*	45	5.0	100	20	100	600	1.0	100	0.62	500	8.0	100	—	—	T1	—
BCX18	PNP HIGH CURRENT	50*	25	5.0	100	20	100	600	1.0	100	0.62	500	8.0	100	—	—	T2	—
BCX19	NPN HIGH CURRENT	50*	45	5.0	100	20	100	600	1.0	100	0.62	500	5.0	200	—	—	U1	—
BCX20	NPN HIGH CURRENT	30*	25	5.0	100	20	100	600	1.0	100	0.62	500	5.0	200	—	—	U2	—
BCX70	NPN LOW NOISE	45	45	5.0	20*	45	120	630	5.0	2.0	0.55	50	2.5	250	6.0	—		—
BCX70G	NPN LOW NOISE	45*	45	5.0	20*	45	120	220	5.0	2.0	0.55	50	2.5	250	6.0	—	AG	—
BCX70H	NPN LOW NOISE	45*	45	5.0	20*	45	180	310	5.0	2.0	0.55	50	2.5	250	6.0	—	AH	—
BCX70J	NPN LOW NOISE	45*	45	5.0	20*	45	250	460	5.0	2.0	0.55	50	2.5	250	6.0	—	AJ	—
BCX70K	NPN LOW NOISE	45*	45	5.0	20*	45	380	630	5.0	2.0	0.55	50	2.5	250	6.0	—	AK	—
BCX71	PNP LOW NOISE	45*	45	5.0	20*	45	120	630	5.0	2.0	0.55	50	4.5	180	6.0	—		—
BCX71G	PNP LOW NOISE	45*	45	5.0	20*	45	120	220	5.0	2.0	0.55	50	4.5	180	6.0	—	BG	—
BCX71H	PNP LOW NOISE	45*	45	5.0	20*	45	180	310	5.0	2.0	0.55	50	4.5	180	6.0	—	BH	—
BCX71J	PNP LOW NOISE	45*	45	5.0	20*	45	250	460	5.0	2.0	0.55	50	4.5	180	6.0	—	BJ	—
BCX71K	PNP LOW NOISE	45*	45	5.0	20*	45	380	630	5.0	2.0	0.55	50	4.5	180	6.0	—	BK	—
BSR13	NPN AMPL/SWITCH	60	40	5.0	30	50	100	300	10	150	1.60	500	8.0	250MIN	—	285	U7	2N2222A
BSR14	NPN AMPL/SWITCH	75	40	6.0	10	60	100	300	10	150	1.00	500	8.0	300MIN	—	285	U8	2N2222A
BSR15	PNP AMPL/SWITCH	60	40	5.0	20	50	100	300	10	150	1.60	500	8.0	200MIN	—	100	T7	2N2907A
BSR16	PNP AMPL/SWITCH	60	60	5.0	10	50	100	300	10	150	1.60	500	8.0	200MIN	—	100	T8	2N2907A
BSR17	NPN AMPL/SWITCH	60	40	6.0	50	30	50	150	1.0	10	0.30	50	4.0	250MIN	—	225	U9	—
BSR17A	NPN AMPL/SWITCH	60	40	6.0	50	30	100	300	1.0	10	0.30	50	4.0	300MIN	—	250	U92	—
BSV52	NPN SAT SWITCH	20	12	5.0	100	10	40	120	1.0	10	0.40	50	4.0	500	—	18	B2	2N2369A

$^*BV_{CES}$ $^*I_{CES}$

2/3 The Size of SOT-23 Case!

SUPER™ mini

Small Signal Transistors

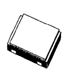


SOT-323 Case, 250mW

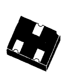
TYPE NO.	DESCRIPTION	BV_{CBO} (V) MIN	BV_{CEO} (V) MIN	BV_{EBO} (V) MIN	I_{CBO} *I_{CEV} (nA) MAX	@ V_{CB} (V)	h_{FE} MIN	h_{FE} MAX	@ V_{CE} (V)	@ I_C (mA)	$V_{CE(SAT)}$ (V) MAX	@ I_C (mA)	C_{ob} (pF) MAX	f_T (MHz) MIN	NF (dB) MAX
CMST2222A	NPN AMPL/SWITCH	75	40	6.0	10	60	100	300	10	150	1.0	500	8.0	300	4.0
CMST2907A	PNP AMPL/SWITCH	60	60	5.0	10	50	100	300	10	150	1.6	500	8.0	200	-
CMST3904	NPN AMPL/SWITCH	60	40	6.0	50*	30	100	300	1.0	10	0.3	50	4.0	300	5.0
CMST3906	PNP AMPL/SWITCH	40	40	5.0	50*	30	100	300	1.0	10	0.4	50	4.5	250	4.0

Transistors

CERSOT-23 Case



Top View



Bottom View

- Hermetically Sealed, Ceramic Leadless Chip Carrier.
- Ultra Miniature Surface Mount Case.
- Mounts Directly on Standard SOT-23 Mounting Pads.
- Includes PrecapVisual - Similar to JANTXV.

TYPE NO.	DESCRIPTION	BV_{CEO} (V) MIN	I_{CBO} *I_{CES} (nA) MAX	@ V_{CBO} (V)	h_{FE} MIN	h_{FE} MAX	@ V_{CE} (mA)	@ I_C (V)	$V_{CE(SAT)}$ (V) MAX	@ I_C (mA)	C_{ob} (pF) MAX	f_T (MHz) MIN	NF (db) MAX	t_{OFF} (ns) MAX
CHT918	NPN RF OSC	15	10	15	20	---	3.0	1.0	0.4	10	1.7	600	6.0	---
CHT2222A	NPN AMPL/SWITCH	40	10	60	35	---	0.1	10	0.3	150	8.0	300	---	285
					50	---	1.0	10	1.0	500				
					75	---	10	10						
					100	300	150	10						
					50	---	150	1.0						
					40	---	500	10						
CHT2369A	NPN SAT SWITCH	15	400*	20	40	120	10	1.0	0.2	10	4.0	500	---	18
					30	---	30	0.4	0.25	30				
					20	---	100	1.0	0.5	100				
CHT2907A	PNP AMPL/SWITCH	60	10	50	75	---	0.1	10	0.4	150	8.0	200	---	100
					100	---	1.0	10	1.6	500				
					100	---	10	10						
					100	300	150	10						
					50	---	500	10						

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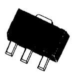

Small Signal Transistors

SOT-89 Case, 1.2W

TYPE NO.	BV_{CBO}	BV_{CEO} $^*BV_{CES}$	BV_{EBO}	I_{CBO} $^*I_{CES}$	@ V_{CB}	h_{FE}		@ V_{CE}	@ I_C	$V_{CE}(SAT)$	@ I_C	C_{ob}	f_T	NF	t_{OFF}
	(V)	(V)	(V)	(nA)	(V)			(V)	(mA)	(V)	(mA)	(pF)	(MHz)	(dB)	(ns)
	MIN	MIN	MIN	MAX		MIN	MAX			MAX		MAX	MIN	MAX	MAX

General Purpose Amplifier/Switches

Devices are listed in order of descending breakdown voltage.

NPN

CXT2222A	75	40	6.0	10	60	100	300	10	150	1.0	500	8.0	300	4.0	285
CXT3904	60	40	6.0	50*	30	100	300	1.0	10	0.3	50	4.0	300	5.0	250

PNP

CXT2907A	60	60	5.0	10	50	100	300	10	150	1.6	500	8.0	200	-	100
CXT3906	60	40	6.0	50*	30	100	300	1.0	10	0.3	50	4.0	300	5.0	250

High Current

Devices are listed in order of descending breakdown voltage.

NPN

CXT3019	140	80	7.0	10	90	100	300	10	150	0.5	500	12	100	4.0	-
CBCX68	25	20	5.0	100	25	85	375	1.0	500	0.5	1,000	-	65	-	-

PNP

CXT4033	80	80	5.0	50	60	100	300	5.0	100	0.5	500	20	100	-	-
CBCX69	25	20	5.0	100	25	85	375	1.0	500	0.5	1,000	-	65	-	-

High Voltage

Devices are listed in order of descending breakdown voltage.

NPN

CXTA42	300	300	6.0	100	200	40	-	10	30	0.5	20	4.0	50	-	-
CXT5551	180	160	6.0	50	120	80	250	5.0	10	0.2	50	6.0	100	8.0	-

PNP

CXTA92	300	300	5.0	250	200	25	-	10	30	0.5	20	6.0	50	-	-
CXT5401	160	150	5.0	50	120	60	240	5.0	10	0.5	50	6.0	100	8.0	-

Darlington

Devices are listed in order of descending h_{FE}.

NPN

CXTA14	30	30*	10	100	30	20,000	-	5.0	100	1.5	100	-	125	-	-
NEW CXTA27	60	60*	10	100	50	10,000	-	5.0	100	1.5	100	-	-	-	-

PNP

CXTA64	30	30*	10	100	30	20,000	-	5.0	100	1.5	100	-	100	-	-

Shaded areas indicate Darlington.

SELECT GUIDE

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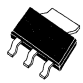


Small Signal Transistors

SOT-223 Case, 2.0W

TYPE NO.	BV_{CBO} (V) MIN	BV_{CEO} $^*BV_{CES}$ (V) MIN	BV_{EBO} (V) MIN	I_{CBO} $^*I_{CES}$ (nA) MAX	@ V_{CB} (V)	h_{FE} MIN	h_{FE} MAX	@ V_{CE} (V)	@ I_C (mA)	$V_{CE(SAT)}$ (V) MAX	@ I_C (mA)	C_{ob} (pF) MAX	f_T (MHz) MIN	NF (dB) MAX	t_{OFF} (ns) MAX

General Purpose Amplifier/Switches

Devices are listed in order of descending breakdown voltage.

NPN

CZT2222A	75	40	6.0	10	60	100	300	10	150	1.0	500	8.0	300	4.0	285
CZT3904	60	40	6.0	50*	30	100	300	1.0	10	0.3	50	4.0	300	5.0	250

PNP

CZT2907A	60	60	5.0	10	50	100	300	10	150	1.6	500	8.0	200	-	100
CZT3906	60	40	6.0	50*	30	100	300	1.0	10	0.3	50	4.0	300	5.0	250

High Current

Devices are listed in order of descending breakdown voltage.

NPN

CZT3019	120	80	7.0	10	90	100	300	10	150	0.5	500	12	100	4.0	-
CBCP68	25	20	5.0	100	25	85	375	1.0	500	0.5	1,000	-	65	-	-

PNP

CZT4033	80	80	5.0	50	60	100	300	5.0	100	0.5	500	20	100	-	-
CBCP69	25	20	5.0	100	25	85	375	1.0	500	0.5	1,000	-	65	-	-

High Voltage

Devices are listed in order of descending breakdown voltage.

NPN

CZTA44	450	400	6.0	100	400	50	200	10	10	0.75	50	7.0	20	-	-
CZTA42	300	300	6.0	100	200	40	-	10	30	0.5	20	4.0	50	-	-
CZT5551	180	160	6.0	50	120	80	250	5.0	10	0.2	50	6.0	100	8.0	-

PNP

CZTA92	300	300	5.0	250	200	25	-	10	30	0.5	200	6.0	50	-	-
CZT5401	160	150	5.0	50	120	60	240	5.0	10	0.5	50	6.0	100	8.0	-

Darlington

Devices are listed in order of descending h_{FE}.

NPN

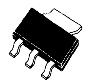
CZTA14	30	30*	10	100	30	20,000	-	5.0	100	1.5	100	-	125	-	-
CZT2000	200	200*	10	500	180	3,000	-	5.0	160	1.1	80	-	-	-	-

PNP

CZTA64	30	30*	10	100	30	20,000	-	5.0	100	1.5	100	-	125	-	-

Shaded areas indicate Darlington.

Note: SOT-223 also mounts directly on DPAK solder pads.



NEW

Power Transistors

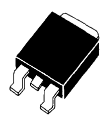
SOT-223 Case

POWER 223™

A Power Transistor Chip in a Small Signal Package!

TYPE NO. NPN	TYPE NO. PNP	DESCRIPTION	I_C (A) MAX	P_D (W)	BV_{CBO} (V) MIN	BV_{CEO} (V) MIN	h_{FE} MIN	h_{FE} MAX	@ I_C (A)	$V_{CE(SAT)}$ (V) MAX	@ I_C (A)	f_T (MHz) MIN
CZT31C	CZT32C	AMPL/SWITCH	3.0	2.0	100	100	10	100	3.0	1.2	3.0	3.0
CZT122	CZT127	DARLINGTON	5.0	2.0	100	100	1,000	---	3.0	4.0	5.0	4.0
CZT3055	CZT2955	AMPL/SWITCH	6.0	2.0	100	70	20	70	4.0	1.1	4.0	2.5
CZT5338		HIGH CURRENT SWITCH	5.0	2.0	100	100	30	120	2.0	1.2	5.0	30

Shaded areas indicate Darlington.



NEW

Power Transistors

DPAK Case

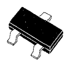
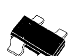
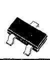
DPAK POWER!™

TYPE NO. NPN	TYPE NO. PNP	I_C (A)	P_D (W)	BV_{CBO} *BV_{CEV} (V)	BV_{CEO} (V)	h_{FE} MIN	h_{FE} MAX	@ I_C (A)	$V_{CE(SAT)}$ (V) MAX	@ I_C (A)	f_T *TYP (MHz) MIN
General Purpose Amplifier/Switches Devices are listed in order of descending breakdown voltage.											
CJD31C	CJD32C	3.0	15	100	100	10	50	3.0	1.2	3.0	3.0
CJD41C	CJD42C	6.0	20	100	100	15	75	3.0	1.5	6.0	3.0
CJD44H11	CJD45H11	8.0	20	80	80	40	---	4.0	1.0	8.0	50*
CJD3055	CJD2955	10	20	70	60	20	100	4.0	1.1	4.0	2.0
CJD200	CJD210	5.0	12.5	40	25	45	180	2.0	1.8	5.0	65
High Voltage Devices are listed in order of descending breakdown voltage.											
CJD13003		1.5	15	700*	400	5.0	25	1.0	3.0	1.5	4.0
CJD50		1.0	15	500	400	30	150	0.3	1.0	1.0	10
CJD340	CJD350	0.5	15	300	300	30	240	0.05	---	---	---
CJD47		1.0	15	350	250	30	150	0.3	1.0	1.0	10
Darlington											
CJD112	CJD117	2.0	20	100	100	1,000	12,000	2.0	2.0	2.0	25
CJD122	CJD127	8.0	20	100	100	1,000	12,000	4.0	4.0	8.0	4.0

Shaded areas indicate Darlington.

SELECT GUIDE

Switching Diodes

TYPE NO.	DESCRIPTION	V_{RRM} (V) MAX	I_O (mA) MAX	V_F @ I_F (V) MAX	(mA)	t_{rr} (ns) MAX
	**SOD-80 Case** Devices are listed in order of ascending breakdown voltage.					
CLL2003	HIGH VOLTAGE SWITCHING DIODE	250	250	1.0	100	50
CLL914	SWITCHING DIODE	100	200	1.0	10	4.0
CLL4448	SWITCHING DIODE	100	200	1.0	100	4.0
CLL4150	HIGH CURRENT,SWITCHING DIODE	50	300	1.0	200	4.0
	**SOT-23 Case** Devices are listed in order of ascending breakdown voltage.					
CMPD4150	SINGLE SWITCHING DIODE	50	300	1.0	200	4.0
CMPD2836	DUAL SWITCHING DIODE, COMMON ANODE	75	200	1.0	50	6.0
CMPD2838	DUAL SWITCHING DIODE, COMMON CATHODE	75	200	1.0	50	6.0
CMPD1001	SINGLE HIGH CURRENT DIODE	90	250	1.0	200	50
CMPD1001A	DUAL HIGH CURRENT DIODE, COMMON ANODE	90	250	1.0	200	50
CMPD1001S	DUAL HIGH CURRENT, IN SERIES	90	250	1.0	200	50
CMPD914	SINGLE SWITCHING DIODE	100	200	1.0	10	4.0
CMPD4448	SINGLE SWITCHING DIODE	100	200	1.0	100	4.0
CMPD7000	DUAL SWITCHING DIODE, IN SERIES	100	200	1.1	100	15
CMPD5001	SINGLE INDUCTIVE LOAD DIODE	120	400	1.0	200	50
CMPD5001S	DUAL INDUCTIVE LOAD DIODE, IN SERIES	120	400	1.0	200	50
CMPD2003	SINGLE HIGH VOLTAGE SWITCHING DIODE	250	200	1.0	100	50
CMPD2004	SINGLE HIGH VOLTAGE SWITCHING DIODE	300	200	1.0	100	50
CMPD2004S	DUAL HIGH VOLTAGE SWITCHING DIODE, IN SERIES	300	200	1.0	100	50
	**SOT-143 Case**					
BAS28	DUAL SWITCHING DIODE, ISOLATED	85	250	1.0	50	6.0
BAS56	DUAL HIGH CURRENT DIODE, ISOLATED	60	200	1.0	200	6.0
SUPER™ mini  NEW	**SOT-323 Case**					
CMSD4448	SINGLE SWITCHING DIODE	100	200	1.0	100	4.0

Schottky Diodes

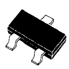
TYPE NO.	CONFIGURATION	V_{RRM} (V) MAX	I_F $*I_O$ (mA) MAX	V_F @ I_F (V) MAX	(mA)	t_{rr} (ns) MAX	CT *TYP (pF) MAX

SUPER™ mini

SOD-323 Case

High Current

CMDSH-3	SINGLE	30	100*	0.55	50	5.0	7.0*
NEW **CMDSH2-3**	SINGLE	30	200*	0.55	200	-	15*



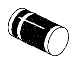
SOT-23 Case

Low Current

CMPD6263	SINGLE	70	15	0.41	1.0	1.0	2.0
CMPD6263A	DUAL, COMMON ANODE	70	15	0.41	1.0	1.0	2.0
CMPD6263C	DUAL, COMMON CATHODE	70	15	0.41	1.0	1.0	2.0
CMPD6263S	DUAL, IN SERIES	70	15	0.41	1.0	1.0	2.0

High Current

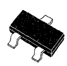
CMPSH-3	SINGLE	30	100	0.45	15	5.0	7.0*
CMPSH-3A	DUAL, COMMON ANODE	30	100	0.45	15	5.0	7.0*
CMPSH-3C	DUAL, COMMON CATHODE	30	100	0.45	15	5.0	7.0*
CMPSH-3S	DUAL, IN SERIES	30	100	0.45	15	5.0	7.0*



Low Leakage Diodes

SOD-80 Case

TYPE NO.	V_{RRM} (V) MAX	I_O (mA) MAX	I_R @ (nA) MAX	V_{RWN} (V)	V_F @ (V) MAX	I_F (mA)	C_T (pF) MAX
CLL457A	70	200	25	60	1.0	100	6.0
CLL459A	200	200	25	175	1.0	100	8.0
CLL3595	150	150	1.0	125	1.0	200	8.0

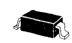


Stabistor Diode

SOT-23 Case

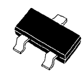
TYPE NO.	V_F (V) MIN	V_F (V) MAX	@ I_F (mA)	V_F (V) MIN	V_F (V) MAX	@ I_F (mA)	V_F (V) MIN	V_F (V) MAX	@ I_F (mA)	V_F (V) MIN	V_F (V) MAX	@ I_F (mA)	V_F (V) MIN	V_F (V) MAX	@ I_F (mA)
CBAS17	0.580	0.680	0.1	0.665	0.760	1.0	0.725	0.820	5.0	0.750	0.840	10	0.870	0.960	100

Zener Diodes

POWER	250mW			
CASE	NEW SUPER™ mini PREFERRED  SOD-323			
ZENER VOLTAGE	INDUSTRY STANDARD	@ I_{ZT} = (mA)	LOW LEVEL SHARP KNEE	@ I_{ZT} = (µA)
1.8				
2.0				
2.2				
2.4	CMDZ5221B	20		
2.5	CMDZ5222B	20		
2.7	CMDZ5223B	20		
2.8	CMDZ5224B	20		
3.0	CMDZ5225B	20		
3.3	CMDZ5226B	20		
3.6	CMDZ5227B	20		
3.9	CMDZ5228B	20		
4.3	CMDZ5229B	20		
4.7	CMDZ5230B	20		
5.1	CMDZ5231B	20	CMDZ5L1	500
5.6	CMDZ5232B	20	CMDZ5L6	500
6.0	CMDZ5233B	20		
6.2	CMDZ5234B	20	CMDZ6L2	500
6.8	CMDZ5235B	20	CMDZ6L8	500
7.5	CMDZ5236B	20	CMDZ7L5	500
8.2	CMDZ5237B	20	CMDZ8L2	500
8.7	CMDZ5238B	20		
9.1	CMDZ5239B	20	CMDZ9L1	500
10	CMDZ5240B	20	CMDZ10L	500
11	CMDZ5241B	20	CMDZ11L	500
12	CMDZ5242B	20	CMDZ12L	500
13	CMDZ5243B	9.5	CMDZ13L	500
14	CMDZ5244B	9.0		
15	CMDZ5245B	8.5	CMDZ15L	500
16	CMDZ5246B	7.8	CMDZ16L	500
17	CMDZ5247B	7.4		
18	CMDZ5248B	7.0	CMDZ18L	500
19	CMDZ5249B	6.6		
20	CMDZ5250B	6.2	CMDZ20L	500
22	CMDZ5251B	5.6	CMDZ22L	500
24	CMDZ5252B	5.2	CMDZ24L	500
25	CMDZ5253B	5.0		
27	CMDZ5254B	4.6	CMDZ27L	500
28	CMDZ5255B	4.5		
30	CMDZ5256B	4.2	CMDZ30L	500
33	CMDZ5257B	3.8	CMDZ33L	500
36	CMDZ5258B	3.4	CMDZ36L	500
39	CMDZ5259B	3.2		
43	CMDZ5260B	3.0		
47	CMDZ5261B	2.7		

SELECT GUIDE

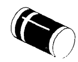
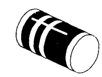
Zener Diodes (Continued)



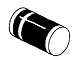
POWER	350mW									
CASE	*PREFERRED*				SOT-23					
ZENER VOLTAGE	INDUSTRY STANDARD	@ I_{ZT} = (mA)	LOW NOISE LOW LEVEL	@ I_{ZT} = (µA)	LOW LEVEL	@ I_{ZT} = (µA)	PROELECTRON SPECIFICATION	@ I_{ZT} = (mA)	DUAL, COMMON ANODE	@ I_{ZT} = (mA)
1.8	CMPZ5221B	20	CMPZ4614*	250	CMPZ4678*	50				
2.0	CMPZ5222B	20	CMPZ4615*	250	CMPZ4679*	50				
2.2	CMPZ5223B	20	CMPZ4616*	250	CMPZ4680*	50				
2.4	CMPZ5224B	20	CMPZ4617*	250	CMPZ4681*	50				
2.7	CMPZ5225B	20	CMPZ4618*	250	CMPZ4682*	50				
3.0	CMPZ5226B	20	CMPZ4619*	250	CMPZ4683*	50				
3.3	CMPZ5227B	20	CMPZ4620*	250	CMPZ4684*	50	BZX84C3V3	5.0		
3.6	CMPZ5228B	20	CMPZ4621*	250	CMPZ4685*	50	BZX84C3V6	5.0	CMPZDA3V6	5.0
3.9	CMPZ5229B	20	CMPZ4622*	250	CMPZ4686*	50	BZX84C3V9	5.0	CMPZDA3V9	5.0
4.3	CMPZ5230B	20	CMPZ4623*	250	CMPZ4687*	50	BZX84C4V3	5.0	CMPZDA4V3	5.0
4.7	CMPZ5231B	20	CMPZ4624*	250	CMPZ4688*	50	BZX84C4V7	5.0	CMPZDA4V7	5.0
5.1	CMPZ5232B	20	CMPZ4625*	250	CMPZ4689*	50	BZX84C5V1	5.0	CMPZDA5V1	5.0
5.6	CMPZ5233B	20	CMPZ4626*	250	CMPZ4690*	50	BZX84C5V6	5.0	CMPZDA5V6	5.0
6.0	CMPZ5234B	20								
6.2	CMPZ5235B	20	CMPZ4627*	250	CMPZ4691*	50	BZX84C6V2	5.0	CMPZDA6V2	5.0
6.8	CMPZ5236B	20			CMPZ4692*	50	BZX84C6V8	5.0	CMPZDA6V8	5.0
7.5	CMPZ5237B	20			CMPZ4693*	50	BZX84C7V5	5.0	CMPZDA7V5	5.0
8.2	CMPZ5238B	20			CMPZ4694*	50	BZX84C8V2	5.0	CMPZDA8V2	5.0
8.7	CMPZ5239B	20			CMPZ4695*	50				
9.1	CMPZ5240B	20			CMPZ4696*	50	BZX84C9V1	5.0	CMPZDA9V1	5.0
10	CMPZ5241B	20			CMPZ4697*	50	BZX84C10	5.0	CMPZDA10V	5.0
11	CMPZ5242B	20			CMPZ4698*	50	BZX84C11	5.0	CMPZDA11V	5.0
12	CMPZ5243B	9.5			CMPZ4699*	50	BZX84C12	5.0	CMPZDA12V	5.0
13	CMPZ5244B	9.0			CMPZ4700*	50	BZX84C13	5.0	CMPZDA13V	5.0
14	CMPZ5245B	8.5			CMPZ4701*	50				
15	CMPZ5246B	7.8			CMPZ4702*	50	BZX84C15	5.0	CMPZDA15V	5.0
16	CMPZ5247B	7.4			CMPZ4703*	50	BZX84C16	5.0	CMPZDA16V	5.0
17	CMPZ5248B	7.0			CMPZ4704*	50	BZX84C18	5.0	CMPZDA18V	5.0
18	CMPZ5249B	6.6			CMPZ4705*	50				
19	CMPZ5250B	6.2			CMPZ4706*	50				
20	CMPZ5251B	5.6			CMPZ4707*	50	BZX84C20	5.0	CMPZDA20V	5.0
22	CMPZ5252B	5.2			CMPZ4708*	50	BZX84C22	5.0	CMPZDA22V	5.0
24	CMPZ5253B	5.0			CMPZ4709*	50	BZX84C24	5.0	CMPZDA24V	5.0
25	CMPZ5254B	4.6			CMPZ4710*	50				
27	CMPZ5255B	4.5			CMPZ4711*	50	BZX84C27	2.0	CMPZDA27V	2.0
28	CMPZ5256B	4.2			CMPZ4712*	50				
30	CMPZ5257B	3.8			CMPZ4713*	50	BZX84C30	2.0	CMPZDA30V	2.0
33	CMPZ5258B	3.4			CMPZ4714*	50	BZX84C33	2.0	CMPZDA33V	2.0
36	CMPZ5259B	3.2			CMPZ4715*	50				
39	CMPZ5260B	3.0			CMPZ4716*	50				
43	CMPZ5261B	2.7			CMPZ4717*	50				

* Available on special order; consult factory.

Zener Diodes (Continued)

POWER	500mW						1.0W	
CASE	*PREFERRED*		 SOD-80				 MELF	
ZENER VOLTAGE	INDUSTRY STANDARD	@ I_{ZT} = (mA)	LOW LEVEL LOW NOISE	@ I_{ZT} = (µA)	LOW LEVEL	@ I_{ZT} = (µA)	GENERAL PURPOSE	@ I_{ZT} = (mA)
1.8			CLL4614*	250	CLL4678	50		
2.0			CLL4615*	250	CLL4679	50		
2.2			CLL4616*	250	CLL4680	50		
2.4			CLL4617*	250	CLL4681	50		
2.7			CLL4618*	250	CLL4682	50		
3.0			CLL4619*	250	CLL4683	50		
3.3	CLL5226B	20	CLL4620*	250	CLL4684	50		
3.6	CLL5227B	20	CLL4621*	250	CLL4685	50	CLL4729A	69
3.9	CLL5228B	20	CLL4622*	250	CLL4686	50	CLL4730A	64
4.3	CLL5229B	20	CLL4623*	250	CLL4687	50	CLL4731A	58
4.7	CLL5230B	20	CLL4624*	250	CLL4688	50	CLL4732A	53
5.1	CLL5231B	20	CLL4625*	250	CLL4689	50	CLL4733A	49
5.6	CLL5232B	20	CLL4626*	250	CLL4690	50	CLL4734A	45
6.0	CLL5233B	20						
6.2	CLL5234B	20	CLL4627*	250	CLL4691	50	CLL4735A	41
6.8	CLL5235B	20			CLL4692	50	CLL4736A	37
7.5	CLL5236B	20			CLL4693	50	CLL4737A	34
8.2	CLL5237B	20			CLL4694	50	CLL4738A	31
8.7	CLL5238B	20			CLL4695	50		
9.1	CLL5239B	20			CLL4696	50	CLL4739A	28
10	CLL5240B	20			CLL4697	50	CLL4740A	25
11	CLL5241B	20			CLL4698	50	CLL4741A	23
12	CLL5242B	20			CLL4699	50	CLL4742A	21
13	CLL5243B	9.5			CLL4700	50	CLL4743A	19
14	CLL5244B	9.0			CLL4701	50		
15	CLL5245B	8.5			CLL4702	50	CLL4744A	17
16	CLL5246B	7.8			CLL4703	50	CLL4745A	15.5
17	CLL5247B	7.4			CLL4704	50		
18	CLL5248B	7.0			CLL4705	50	CLL4746A	14
19	CLL5249B	6.6			CLL4706	50		
20	CLL5250B	6.2			CLL4707	50	CLL4747A	12.5
22	CLL5251B	5.6			CLL4708	50	CLL4748A	11.5
24	CLL5252B	5.2			CLL4709	50	CLL4749A	10.5
25	CLL5253B	5.0			CLL4710	50		
27	CLL5254B	4.6			CLL4711	50	CLL4750A	9.5
28	CLL5255B	4.5			CLL4712	50		
30	CLL5256B	4.2			CLL4713	50	CLL4751A	8.5
33	CLL5257B	3.8			CLL4714	50	CLL4752A	7.5
36					CLL4715	50	CLL4753A*	7.0
39					CLL4716	50	CLL4754A*	6.5
43					CLL4717	50	CLL4755A*	6.0
47							CLL4756A*	5.5
51							CLL4757A*	5.0
56							CLL4758A*	4.5
62							CLL4759A*	4.0
68							CLL4760A*	3.7
75							CLL4761A*	3.3
82							CLL4762A*	3.0
91							CLL4763A*	2.8
100							CLL4764A*	2.5

* Available on special order; consult factory.



Current Limiting Diodes

SOD-80 Case

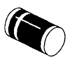
MAXIMUM RATINGS (T_L = 75°C)	**SYMBOL**		**UNITS**
Peak Operating Voltage	POV	100	V
Power Dissipation	P_D	800	mW
Operation and Storage Junction Temperature	T_J, T_{stg}	-65 to + 200	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

TYPE NO.	REGULATOR CURRENT (1) I_P@V_T=25V (mA)			DYNAMIC IMPEDANCE Z_T@V_T=25V (MΩ)	KNEE IMPEDANCE Z_K@V_K=6.0V (MΩ)	LIMITING VOLTAGE V_L @I_L=0.8 I_P MIN (V)
	MIN	NOM	MAX	MIN	MIN	MAX
CCLM0035	0.010	0.035	0.060	8.0	4.00	0.4
CCLM0130	0.050	0.130	0.210	6.0	2.00	0.6
CCLM0300	0.200	0.310	0.420	4.0	1.00	0.8
CCLM0500	0.400	0.515	0.630	2.0	0.50	1.1
CCLM0750	0.600	0.760	0.920	1.0	0.20	1.4
CCLM1000	0.880	1.100	1.320	0.65	0.10	1.7
CCLM1500	1.280	1.500	1.720	0.45	0.07	2.0
CCLM2000	1.680	2.000	2.320	0.35	0.05	2.3
CCLM2700	2.280	2.690	3.100	0.30	0.03	2.7
CCLM3500	3.000	3.550	4.100	0.25	0.02	3.2
CCLM4500	3.900	4.500	5.100	0.20	0.01	3.7
CCLM5750	5.000	5.750	6.500	0.05	0.005	4.5

* The Temperature Coefficient is measured between the following points: +25°C, +50°C

(1) TESTED USING THE PULSED METHOD. $\left(\text{PULSE WIDTH (ms)} = \dfrac{27.5}{I_P \text{ NOM (mA)}}\right)$



High Current, Current Limiting Diodes

SOD-80 Case

MAXIMUM RATINGS ($T_L = 75^oC$)	**SYMBOL**		**UNITS**
Peak Operating Voltage	POV	50	V
Power Dissipation	P_D	800	mW
Operation and Storage Junction Temperature	T_J, T_{stg}	-65 to + 200	^oC

ELECTRICAL CHARACTERISTICS ($T_A = 25^oC$)

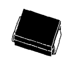
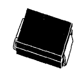
TYPE NO.	REGULATOR CURRENT (1) $I_P @ V_T=25V$ (mA)			DYNAMIC IMPEDANCE $Z_T @ V_T=25V$ (MΩ)	KNEE IMPEDANCE $Z_K @ V_K=6.0V$ (KΩ)	LIMITING VOLTAGE $V_L @ I_L=0.8\ I_P MIN$ (V)
	MIN	NOM	MAX	MIN	MIN	MAX
CCLHM080	6.56	8.2	9.84	0.32	15	3.1
CCLHM100	8.00	10	12	0.17	6.0	3.5
CCLHM120	9.60	12	14.4	0.08	3.0	3.8
CCLHM150	12	15	18	0.03	2.0	4.3

* The Temperature Coefficient is measured between the following points: $+25^oC$, $+50^oC$

(1) TESTED USING THE PULSED METHOD. $\left(\text{PULSE WIDTH (ms)} = \frac{27.5}{I_P\text{NOM (mA)}}\right)$

Rectifiers, General Purpose

1.0 to 3.0 Amperes
200 to 1000 Volts

I_O (AMPS)	1.0		2.0	3.0
@ T_A (°C)	25	25	25	25
I_{FSM} (AMPS)	30	30	60	200
CASE	NEW  SMA	 SMB		 SMC
V_{RRM} (VOLTS)			NEW	
200	CMR1-02M	CMR1-02	CMR2-02	CMR3-02
400	CMR1-04M	CMR1-04	CMR2-04	CMR3-04
600	CMR1-06M	CMR1-06	CMR2-06	CMR3-06
1000	CMR1-10M	CMR1-10	CMR2-10	CMR3-10
V_F MAX @ $I_F = I_O$	1.1V	1.1V	1.1V	1.2V
I_R MAX @ V_{RRM}	5.0µA	10µA	0.5µA	5.0µA

Rectifiers, Fast Recovery

1.0 Ampere
200 to 1000 Volts

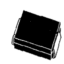
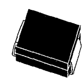
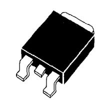
I_O (AMPS)	**1.0**
@ T_A (°C)	25
I_{FSM} (AMPS)	30
CASE	  SMA
V_{RRM} (VOLTS)	
200	CMR1F-02M
400	CMR1F-04M
600	CMR1F-06M
1000	CMR1F-10M

V_F MAX @ $I_F = I_O$	1.3V

I_R MAX @ V_{RRM}	5.0µA
t_{rr} (200V)	150ns
t_{rr} (400V)	150ns
t_{rr} (600V)	250ns
t_{rr} (1000V)	500ns

Rectifiers, Ultra Fast

1.0 to 5.0 Amperes
100 to 600 Volts

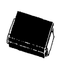
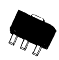
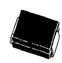
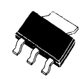
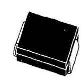
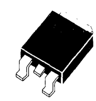
I_O (AMPS)	1.0		2.0	3.0	4.0	5.0
@ T_A (°C)	25	25	25	25	25	25
I_{FSM} (AMPS)	30	30	50	150	70	70
CASE	NEW  SMA	 SMB		 SMC	NEW  DPAK	
V_{RRM} (VOLTS)			NEW			
100	CMR1U-01M	CMR1U-01	CMR2U-01	CMR3U-01		
200	CMR1U-02M	CMR1U-02	CMR2U-02	CMR3U-02	CUD3-02	CUD6-02C
400	CMR1U-04M	CMR1U-04	CMR2U-04	CMR3U-04		
600	CMR1U-06M	CMR1U-06	CMR2U-06	CMR3U-06		

V_F MAX @ $I_F = I_O$						
100V	1.0V	1.0V	1.0V	1.0V		
200V	1.0V	1.0V	1.0V	1.0V	1.25V	1.25V
400V	1.25V	1.25V	1.25V	1.25V		
600V	1.4V	1.4V	1.4V	1.4V		

I_R MAX @ V_{RRM}	5.0μA	5.0μA	10μA	5.0μA	20μA	20μA
t_{rr} (100V thru 200V)	35ns	50ns	50ns	50ns	35ns	35ns
t_{rr} (400V)	50ns	50ns	50ns	50ns		
t_{rr} (600V)	75ns	100ns	50ns	100ns		

Rectifiers, Schottky

1.0 to 6.0 Amperes
20 to 60 Volts

I_O (AMPS)	1.0			2.0		3.0		6.0
@ T_A (°C)	25	25	25	25	25	25	25	25
I_{FSM} (AMPS)	30	30	10	30	10	150	75	75
CASE	 SMA	 SMB	 SOT-89	 SMB	 SOT-223	 SMC	 DPAK	
V_{RRM} (VOLTS)								
20	CMSH1-20M	CMSH1-20		CMSH2-20		CMSH3-20		
40	CMSH1-40M	CMSH1-40	CXSH-4	CMSH2-40	CZSH-4	CMSH3-40	CSHD3-40	CSHD6-40C
60	CMSH1-60M	CMSH1-60		CMSH2-60		CMSH3-60	CSHD3-60	CSHD6-60C
100		CMSH1-100						
V_F MAX @ $I_F = I_O$								
20V	0.5V	0.55V		0.5V		0.5V		
40V	0.5V	0.55V	0.55V	0.5V	0.55V	0.5V	0.84V	0.84V
60V	0.7V	0.7V		0.7V		0.7V	0.65V	0.65V
100V		0.85V						
I_R MAX @ V_{RRM}	500μA	500μA	1000μA	500μA	1000μA	500μA	100μA*	100μA*

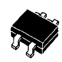
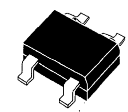
* 40 Volt device

Central™
Semiconductor Corp.

Bridge Rectifiers

Single Phase, Full Wave

0.5 to 1.0 Ampere
100 to 1000 Volts

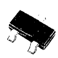
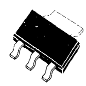
I_O (AMPS)	0.5	1.0		
@ T_A (°C)	25	50	50	25
I_{FSM} (AMPS)	30	50	50	50
CASE	NEW HDBRIDGE™  HD DIP	 SMDIP		NEW
V_{RRM} (VOLTS)	GENERAL PURPOSE	GENERAL PURPOSE	FAST RECOVERY	ULTRA FAST RECOVERY
100				CBR1U-D010S
200	CBRHD-02	CBR1-D020S	CBR1F-D020S	CBR1U-D020S
400	CBRHD-04	CBR1-D040S	CBR1F-D040S	
600	CBRHD-06	CBR1-D060S	CBR1F-D060S	
1000	CBRHD-10*	CBR1-D100S	CBR1F-D100S	

V_F MAX @ I_F	1.0V @ 0.4A	1.1V @ 1.0A	1.3V @ 1.0A	1.05V @ 1.0A
I_R MAX @ V_{RRM}	5.0μA	10μA	10μA	10μA
t_{rr}(100V thru 400V)			200ns	50ns
t_{rr}(600V)			300ns	
t_{rr}(1000v)			500ns	

* Available on special order only, consult factory.

SCRs (Silicon Controlled Rectifiers)

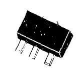
0.8 Ampere RMS
400 Volts

I_T (AMPS)	0.8	
@ T_C (°C)	67	67
I_{TSM} (AMPS)	10	10
CASE	 SOT-23	 SOT-223
V_{RRM} (VOLTS)		NEW
400	CMPS5064	CZS5064

I_{GT}	200μA	200μA
V_{GT}	0.8V	0.8V
I_H	5.0mA	5.0mA

Triacs

2.0 Amperes
400 to 800 Volts

I_T (AMPS)	2.0	
@ T_C (°C)	80	80
I_{TSM} (AMPS)	10	10
CASE	 SOT-89	
V_{RRM} (VOLTS)		
400	CQ89D	CQ89DS
600	CQ89M	CQ89MS
800	CQ89N	CQ89NS

I_{GT} QI	25mA	5.0mA
I_{GT} QII	25mA	5.0mA
I_{GT} QIII	25mA	5.0mA
I_{GT} QIV	25mA	5.0mA
V_{GT} QI - QIV	2.0V	2.0V
I_H	25mA	5.0mA

Detailed Data Sheets

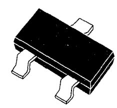
(in alphanumeric order)

DATA SHEET

Central™
Semiconductor Corp.

2N7002

N-CHANNEL ENHANCEMENT-MODE MOSFET



SOT-23 CASE

DESCRIPTION:
The CENTRAL SEMICONDUCTOR 2N7002 type is a N-Channel Field Effect Transistor, manufactured by the N-Channel DMOS Process, designed for high speed pulsed amplifier and driver applications.
Marking Code is 702.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Drain-Source Voltage	V_{DS}	60	V
Drain-Gate Voltage	V_{DG}	60	V
Gate-Source Voltage	V_{GS}	40	V
Continuous Drain Current (T_C=25°C)	I_D	115	mA
Continuous Drain Current (T_C=100°C)	I_D	75	mA
Continuous Source Current (Body Diode)	I_S	115	mA
Maximum Pulsed Drain Current	I_{DM}	800	mA
Maximum Pulsed Source Current	I_{SM}	800	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-55 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

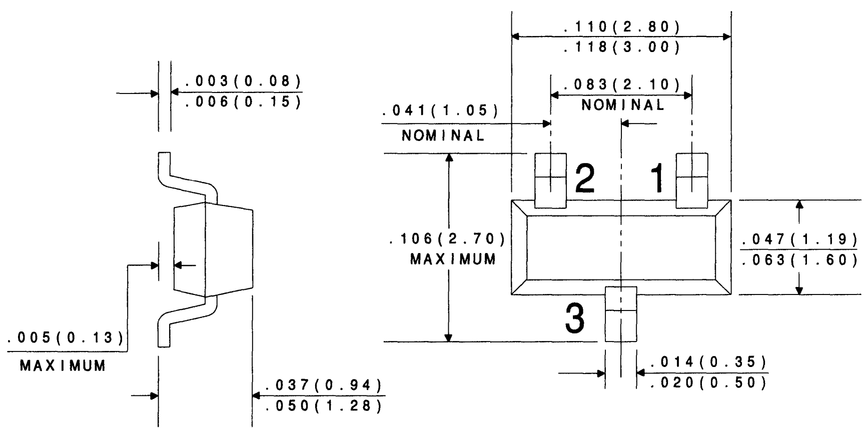
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{GSSF}	V_{GS}=20V			100	nA
I_{GSSR}	V_{GS}=-20V			-100	nA
I_{DSS}	V_{DS}=60V, V_{GS}=0			1.0	μA
I_{DSS}	V_{DS}=60V, V_{GS}=0, T_A=125°C			500	μA
$I_{D(ON)}$	$V_{DS} \geq 2V_{DS(ON)}$, V_{GS}=10V	500			mA
BV_{DSS}	I_D=10μA	60	105		V
$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250μA	1.0	2.1	2.5	V
$V_{DS(ON)}$	V_{GS}=10V, I_D=500mA			3.75	V
$V_{DS(ON)}$	V_{GS}=5.0V, I_D=50mA			1.5	V
$r_{DS(ON)}$	V_{GS}=10V, I_D=500mA		3.7	7.5	Ω

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$r_{DS(ON)}$	V_{GS}=10V, I_D=500mA, T_A=100°C			13.5	Ω
$r_{DS(ON)}$	V_{GS}=5.0V, I_D=50mA		6.2	7.5	Ω
$r_{DS(ON)}$	V_{GS}=5.0V, I_D=50mA, T_A=100°C			13.5	Ω
g_{FS}	$V_{DS} \geq 2V_{DS(ON)}$, I_D=200mA	80			mmhos
C_{rss}	V_{DS}=25V, V_{GS}=0, f=1.0MHz			5.0	pF
C_{iss}	V_{DS}=25V, V_{GS}=0, f=1.0MHz			50	pF
C_{oss}	V_{DS}=25V, V_{GS}=0, f=1.0MHz			25	pF
t_{on}	V_{DD}=30V, I_D=10V, R_G=25Ω, R_L=25Ω			20	ns
t_{off}	V_{DD}=30V, I_D=10V, R_G=25Ω, R_L=25Ω			20	ns
V_{SD}	V_{GS}=0V, I_S=11.5mA			-1.5	V

All dimensions in inches (mm).

TOP VIEW



DATA SHEET

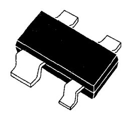
LEAD CODE:

1) GATE
2) SOURCE
3) DRAIN

R1

BAS28

DUAL, ISOLATED HIGH SPEED SWITCHING DIODE



SOT-143 CASE

Central™
Semiconductor Corp.

DESCRIPTION:
The CENTRAL SEMICONDUCTOR BAS28 type is a ultra-high speed silicon switching diode manufactured by the epitaxial planar process, in an epoxy molded surface mount package with isolated dual diodes, designed for high speed switching applications.
Marking code is A61.

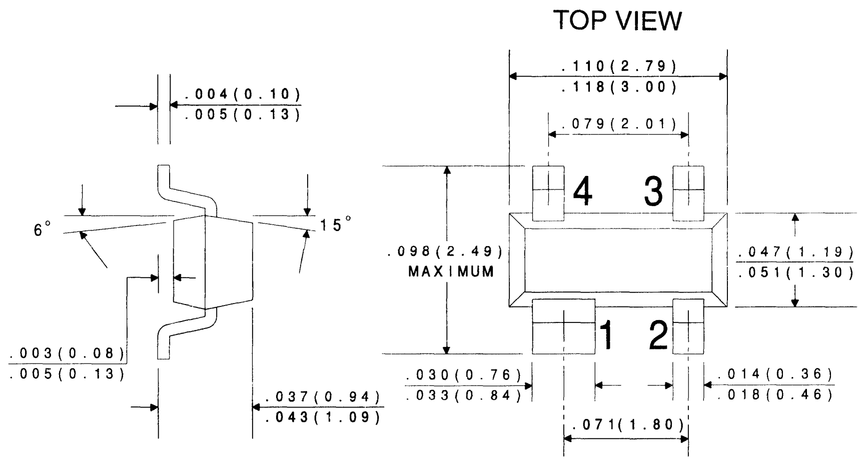
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Continuous Reverse Voltage	V_R	75	V
Peak Repetitive Reverse Voltage	V_{RRM}	85	V
Continuous Forward Current	I_F	250	mA
Peak Repetitive Forward Current	I_{FRM}	250	mA
Forward Surge Current, tp=1 µsec.	I_{FSM}	4000	mA
Forward Surge Current, tp=1 msec.	I_{FSM}	2000	mA
Forward Surge Current, tp=1 sec.	I_{FSM}	1000	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_R	V_R=25V, T_A=150°C		30	µA
I_R	V_R=75V		1.0	µA
I_R	V_R=75V, T_A=150°C		50	µA
V_F	I_F=1.0mA		0.715	V
V_F	I_F=10mA		0.855	V
V_F	I_F=50mA		1.000	V
V_F	I_F=150mA		1.250	V
C_T	V_R=0, f=1 MHz		2.0	pF
t_{rr}	I_F=I_R=10mA, R_L=100Ω, Rec. to 1.0mA		6.0	ns
Q_S	I_F=10mA, V_R=5.0V, R_L=500Ω		45	pC
V_{FR}	I_F=10mA, t_r=20ns		1.75	V

All dimensions in inches (mm).



LEAD CODE:

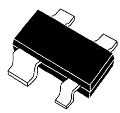
1) ANODE 1
2) ANODE 2
3) CATHODE 2
4) CATHODE 1

DATA SHEET

R2

BAS56

DUAL HIGH CURRENT SWITCHING DIODE



SOT-143 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR BAS56 type is an ultra-high speed silicon switching diode manufactured by the epitaxial planar process, in an epoxy molded surface mount package with isolated dual diodes, designed for high current, high speed switching applications.
Marking code is L51.

MAXIMUM RATINGS (T_A=25°C)

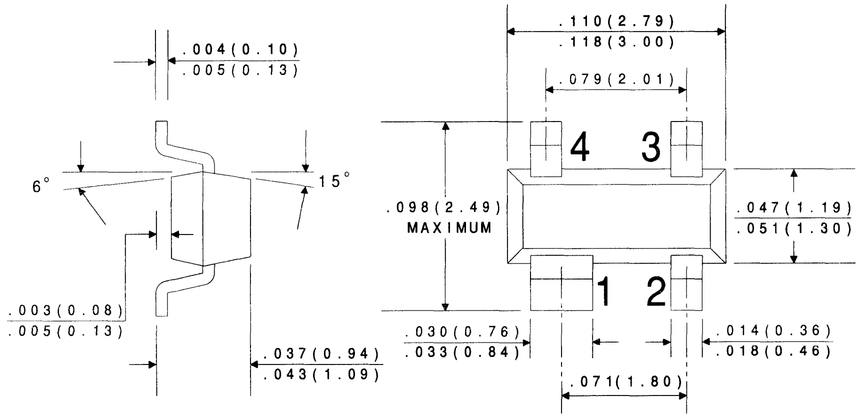
	SYMBOL		UNITS
Continuous Reverse Voltage	V_R	60	V
Peak Repetitive Reverse Voltage	V_{RRM}	60	V
Continuous Forward Current	I_F	200	mA
Peak Repetitive Forward Current	I_{FRM}	600	mA
Forward Surge Current, tp=1 µsec.	I_{FSM}	4000	mA
Forward Surge Current, tp=1 sec.	I_{FSM}	1000	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_R	V_R=60V		100	nA
I_R	V_R=60V, T_A=150°C		100	µA
I_R	V_R=75V		10	µA
V_F	I_F=10mA		0.75	V
V_F	I_F=200mA		1.00	V
V_F	I_F=500mA		1.25	V
C_T	V_R=0, f=1 MHz		2.5	pF
t_{rr}	I_F=I_R=400mA, R_L=100Ω, Rec. to 40mA		6.0	ns
Q_s	I_F=10mA, V_R=5.0V, R_L=500Ω		50	pC
V_{FR}	I_F=400mA, t_r=30ns		1.2	V
V_{FR}	I_F=400mA, t_r=100ns		1.5	V

All dimensions in inches (mm).

TOP VIEW

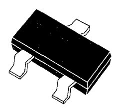


LEAD CODE:

1) ANODE 1
2) ANODE 2
3) CATHODE 2
4) CATHODE 1

BZX84C3V3 THRU BZX84C33

350mW ZENER DIODE
3.3 VOLTS THRU 33 VOLTS
5% TOLERANCE



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

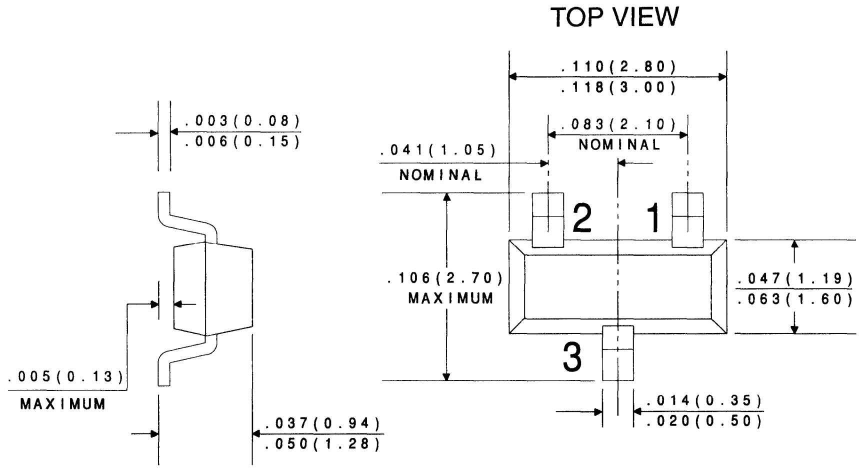
The CENTRAL SEMICONDUCTOR BZX84C3V3 Series Silicon Zener Diode is a high quality voltage regulator for use in industrial, commercial, entertainment and computer applications.

ABSOLUTE MAXIMUM RATINGS	SYMBOL		UNIT
Power Dissipation (@T_A=25°C)	P_D	350	mW
Operating and Storage Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C), V_F=0.9V MAX @ I_F=10mA FOR ALL TYPES.

TYPE	Zener Voltage V_Z@I_{ZT}		Test Current	Maximum Zener Impedance			Maximum Reverse Current		Maximum Zener Current	Maximum ZenerVoltage Temperature Coefficient	Marking Code
	MIN	MAX	I_{ZT}	Z_{ZT}@I_{ZT}	Z_{ZK}@I_{ZK}		I_R@V_R		I_{ZM}	ΘV_Z	
	Volts	Volts	mA	Ω	Ω	mA	μA	Volts	mA	%/°C	
BZX84C3V3	3.1	3.5	5.0	95	600	1.0	5.0	1.0	76	-0.06	W6
BZX84C3V6	3.4	3.8	5.0	90	600	1.0	5.0	1.0	69	-0.06	W7
BZX84C3V9	3.7	4.1	5.0	90	600	1.0	3.0	1.0	64	-0.06	W8
BZX84C4V3	4.0	4.6	5.0	90	600	1.0	3.0	1.0	58	-0.05	W9
BZX84C4V7	4.4	5.0	5.0	80	500	1.0	3.0	2.0	53	-0.03	Z1
BZX84C5V1	4.8	5.4	5.0	60	480	1.0	2.0	2.0	49	0.02	Z2
BZX84C5V6	5.2	6.0	5.0	40	400	1.0	1.0	2.0	45	0.03	Z3
BZX84C6V2	5.8	6.6	5.0	10	150	1.0	3.0	4.0	40	0.04	Z4
BZX84C6V8	6.4	7.2	5.0	15	80	1.0	2.0	4.0	37	0.05	Z5
BZX84C7V5	7.0	7.9	5.0	15	80	1.0	1.0	5.0	33	0.05	Z6
BZX84C8V2	7.7	8.9	5.0	15	80	1.0	0.7	5.0	30	0.06	Z7
BZX84C9V1	8.5	9.6	5.0	15	100	1.0	0.5	6.0	27	0.06	Z8
BZX84C10	9.4	10.6	5.0	20	150	1.0	0.2	7.0	25	0.07	Z9
BZX84C11	10.4	11.6	5.0	20	150	1.0	0.1	8.0	23	0.07	Y1
BZX84C12	11.4	12.7	5.0	25	150	1.0	0.1	8.0	21	0.07	Y2
BZX84C13	12.4	14.1	5.0	30	170	1.0	0.1	8.0	19	0.08	Y3
BZX84C15	13.8	15.6	5.0	30	200	1.0	0.05	10.5	17	0.08	Y4
BZX84C16	15.3	17.1	5.0	40	200	1.0	0.05	11.2	16	0.08	Y5
BZX84C18	16.8	19.1	5.0	45	225	1.0	0.05	12.6	14	0.08	Y6
BZX84C20	18.8	21.2	5.0	55	225	1.0	0.05	14.0	12	0.08	Y7
BZX84C22	20.8	23.3	5.0	55	250	1.0	0.05	15.4	11	0.09	Y8
BZX84C24	22.8	25.6	5.0	70	250	1.0	0.05	16.8	10	0.09	Y9
BZX84C27	25.1	28.9	2.0	80	300	0.5	0.05	18.9	9	0.09	Y10
BZX84C30	28.0	32.0	2.0	80	300	0.5	0.05	21.0	8	0.09	Y11
BZX84C33	31.0	35.0	2.0	80	325	0.5	0.05	23.1	7	0.09	Y12

All dimensions in inches (mm).



LEAD CODE:

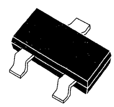
1) ANODE
2) NO CONNECTION
3) CATHODE

DATA SHEET

R2

CBAS17

LOW VOLTAGE STABISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CBAS17 type is a planar epitaxial silicon switching diode, designed for low voltage stabilizing applications.
Marking code is A91.

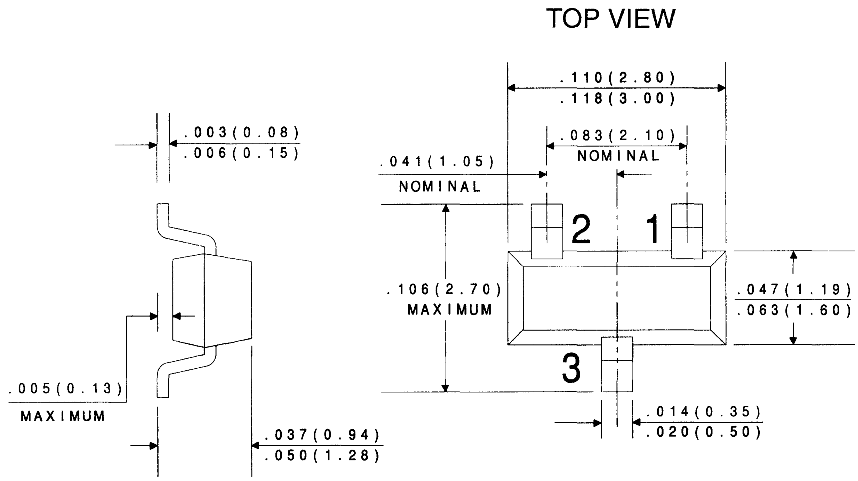
MAXIMUM RATINGS (T_A=25°C)

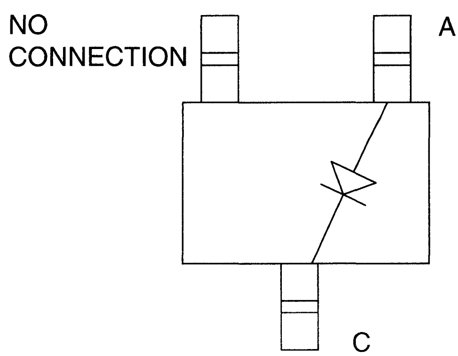
	SYMBOL		UNITS
Peak Repetitive Forward Current	I_{FRM}	250	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
V_F	I_F=0.1mA	.580	.665	.680	V
V_F	I_F=1.0mA	.665	.745	.760	V
V_F	I_F=5.0mA	.725	.805	.820	V
V_F	I_F=10mA	.750	.825	.840	V
V_F	I_F=100mA	.870	.920	.960	V
I_R	V_R=4.0V			5.0	μA
C_T	V_R=0, f=1 MHz			140	pF

All dimensions in inches (mm).



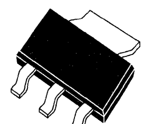


DATA
SHEET

R2

CBCP68 NPN
CBCP69 PNP

SILICON COMPLEMENTARY SMALL SIGNAL TRANSISTORS



SOT-223 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CBCP68, CBCP69 types are complementary silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for applications requiring high current capability.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Emitter Voltage	V_{CES}	25	V
Collector-Emitter Voltage	V_{CEO}	20	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	1.0	A
Collector Current-Peak	I_{CM}	2.0	A
Base Current	I_B	100	mA
Base Current-Peak	I_{BM}	200	mA
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

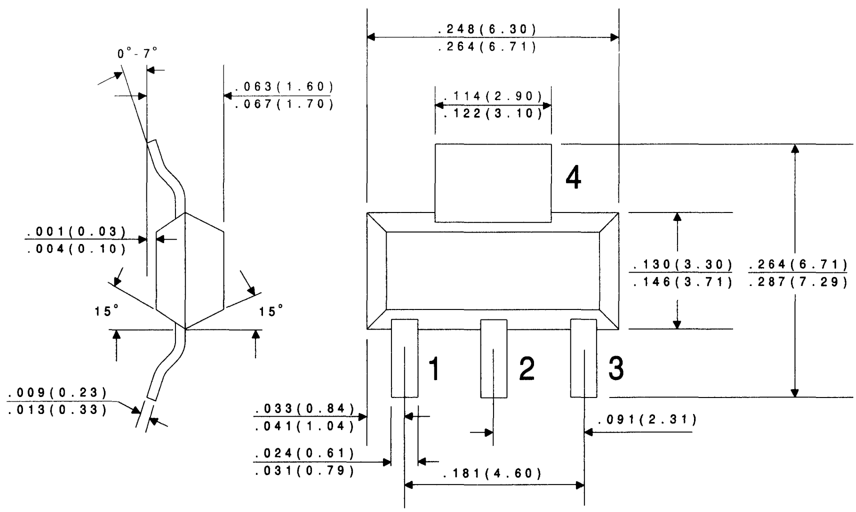
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{CBO}	V_{CB}=25V			10	µA
I_{CBO}	V_{CB}=25V, T_A=150°C			1.0	mA
I_{EBO}	V_{EB}=5.0V			10	µA
BV_{CBO}	I_C=10µA	25			V
BV_{CEO}	I_C=10mA	20			V
BV_{EBO}	I_E=1.0µA	5.0			V
$V_{CE(SAT)}$	I_C=1.0A, I_B=100mA			0.5	V
$V_{BE(ON)}$	V_{CE}=10V, I_C=5.0mA		0.6		V
$V_{BE(ON)}$	V_{CE}=1.0V, I_C=1.0A			1.0	V
h_{FE}	V_{CE}=10V, I_C=5.0mA	50			

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
h_{FE}	V_{CE}=1.0V, I_C=500mA	85		375	
h_{FE}	V_{CE}=1.0V, I_C=1.0A	60			
f_T	V_{CE}=5.0V, I_C=10mA, f=20MHz	65			MHz
C_{ob}	V_{CB}=5.0V, I_E=0, F=450kHz		25		pF

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

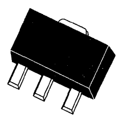
1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

DATA SHEET

R2

CBCX68 NPN
CBCX69 PNP

SILICON COMPLEMENTARY SMALL SIGNAL TRANSISTORS



SOT-89 CASE

Central™ Semiconductor Corp.

DESCRIPTION

The CENTRAL SEMICONDUCTOR CBCX68, CBCX69 types are complementary silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for applications requiring high current capability.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Emitter Voltage	V_{CES}	25	V
Collector-Emitter Voltage	V_{CEO}	20	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	1.0	A
Collector Current-Peak	I_{CM}	2.0	A
Base Current	I_B	100	mA
Base Current-Peak	I_{BM}	200	mA
Power Dissipation	P_D	1.2	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	104	°C/W

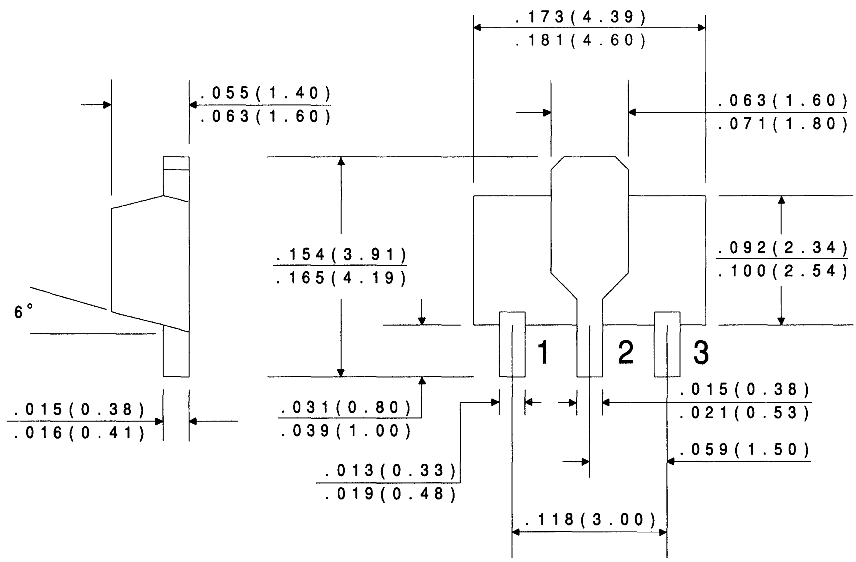
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{CBO}	V_{CB}=25V			100	nA
I_{CBO}	V_{CB}=25V, T_A=150°C			10	μA
I_{EBO}	V_{EB}=5.0V			10	μA
BV_{CBO}	I_C=10μA	25			V
BV_{CEO}	I_C=10mA	20			V
BV_{EBO}	I_E=1.0μA	5.0			V
$V_{CE(SAT)}$	I_C=1.0A, I_B=100mA			0.5	V
$V_{BE(ON)}$	V_{CE}=10V, I_C=5.0mA		0.6		V
$V_{BE(ON)}$	V_{CE}=1.0V, I_C=1.0A			1.0	V

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
h_{FE}	V_{CE}=10V, I_C=5.0mA	50			
h_{FE}	V_{CE}=1.0V, I_C=500mA	85		375	
h_{FE}	V_{CE}=1.0V, I_C=1.0A	60			
f_T	V_{CE}=5.0V, I_C=10mA, f=20MHz	65			MHz

All dimensions in inches (mm).

BOTTOM VIEW



DATA
SHEET

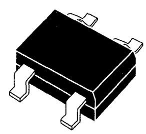
LEAD CODE:

1) EMITTER
2) COLLECTOR
3) BASE

R2

CBR1-D020S SERIES

1.0 AMP DUAL IN LINE BRIDGE RECTIFIER



SMDIP CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CBR1-D020S series types are silicon full wave bridge rectifiers mounted in a durable epoxy, surface mount, molded case, utilizing glass passivated chips. To order devices on tape and reel (1,000/13" reel) add TR13 suffix. **NOTE:** Also available in Fast Recovery, please contact factory for details.

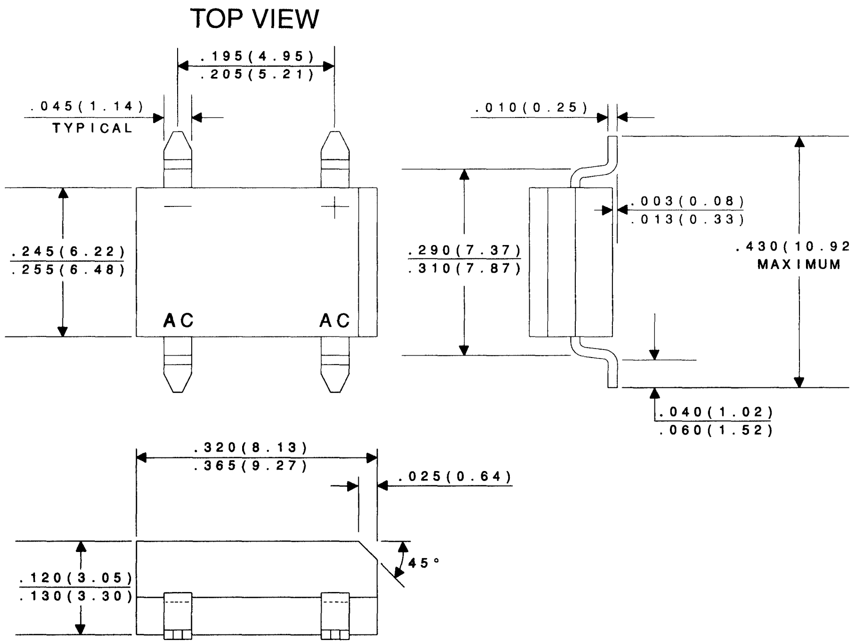
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL	CBR1-D020S	CBR1-D040S	CBR1-D060S	CBR1-D100S	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	200	400	600	1000	V
DC Blocking Voltage	V_R	200	400	600	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	140	280	420	700	V
Average Forward Current (T_A=50°C)	I_O		1.0			A
Peak Forward Surge Current	I_{FSM}		50			A
Operating and Storage Junction Temperature	T_J,T_{stg}		-65 to +150			°C

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
V_F	I_F=1.0A			1.1	V
I_R	V_R=Rated V_{RRM}			10	μA
I_R	V_R=Rated V_{RRM}, T_A=125°C			0.5	mA
C_J	V_R=4.0V, f=1.0MHz		25		pF

All dimensions in inches (mm).



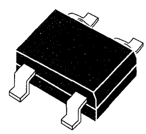
DATA SHEET

R2

NEW

CBR1U-D010S
CBR1U-D020S

1.0 AMP ULTRA FAST BRIDGE RECTIFIER



SMDIP CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CBR1U-D010S, CBR1U-D020S types are silicon full wave ultra fast bridge rectifiers mounted in a durable epoxy surface mount molded case, utilizing glass passivated chips.

MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

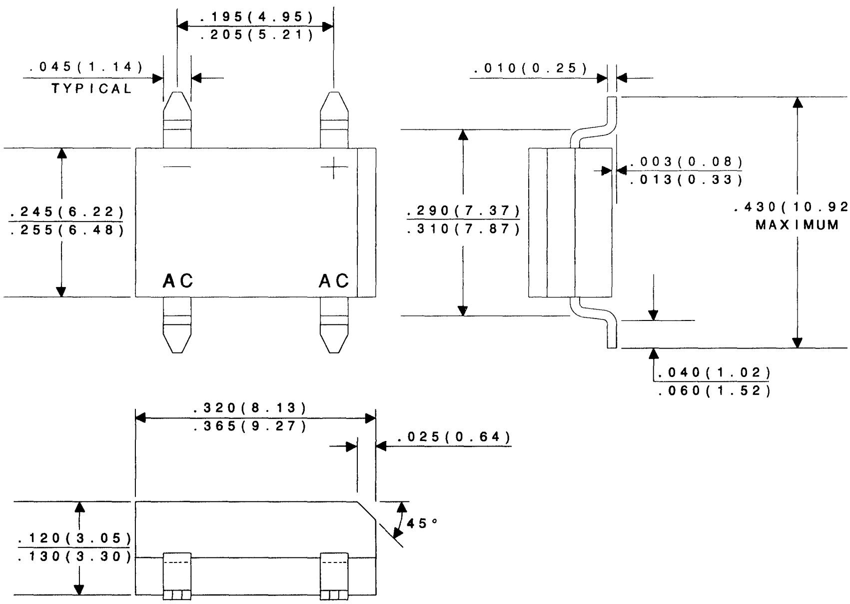
	SYMBOL	CBR1U-D010S	CBR1U-D020S	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	100	200	V
DC Blocking Voltage	V_R	100	200	V
RMS Reverse Voltage	$V_{R(RMS)}$	70	140	V
Average Forward Current (T_A=40°C)	I_O	1.0		A
Peak Forward Surge Current	I_{FSM}	50		A
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150		°C
Thermal Resistance	Θ_{JA}	40		°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
V_F	I_F=1.0A (Per Diode)		1.05	V
I_R	V_R=Rated V_{RRM}		5.0	μA
I_R	V_R=Rated V_{RRM}, T_A=125°C		1.0	mA
t_{rr}	I_F=500mA, I_R=1.0A, I_{rr}=250mA		50	ns

All dimensions in inches (mm).

TOP VIEW



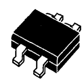
DATA SHEET

R1

CBRHD SERIES

HIGH DENSITY
½ AMP DUAL IN LINE
BRIDGE RECTIFIER

HD™ BRIDGE



HD DIP CASE

Central™
Semiconductor Corp.

FEATURES:

- Truly efficient use of board space, requires only 42mm² of board space vs. 120mm² of board space for industry standard 1.0 Amp surface mount rectifier.
- 50% higher density (amps/mm²) than the industry standard 1.0 Amp surface mount rectifier.
- Glass passivated chips for high reliability.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CBRHD series types are silicon full wave bridge rectifiers mounted in a durable epoxy surface mount molded case, utilizing glass passivated chips.

MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

	SYMBOL	CBRHD -02	CBRHD -04	CBRHD -06	CBRHD -10 *	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	200	400	600	1000	V
DC Blocking Voltage	V_R	200	400	600	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	140	280	420	700	V
Average Forward Current (T_A=40°C)(1)	I_O		0.5			A
Average Forward Current (T_A=40°C)(2)	I_O		0.8			A
Peak Forward Surge Current	I_{FSM}		30			A
Operating and Storage Junction Temperature	T_J,T_{stg}		-65 to +150			°C

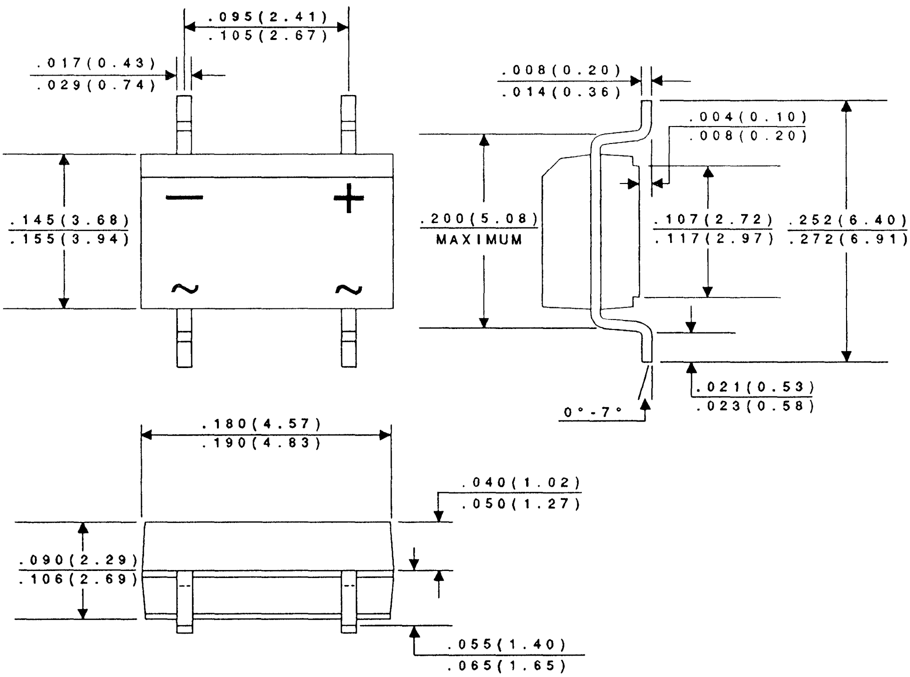
ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
V_F	I_F=400mA (Per Diode)			1.0	V
I_R	V_R=Rated V_{RRM}			5.0	μA
I_R	V_R=Rated V_{RRM}, T_A=125°C			500	μA
C_J	V_R=4.0V, f=1.0MHz		20		pF

(1) Mounted on a Glass-Epoxy P.C.B.
(2) Mounted on a Ceramic P.C.B.
* Available on special order, please consult factory.

All dimensions in inches (mm).

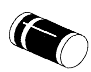
TOP VIEW



DATA SHEET

CCLHM080
THRU
CCLHM150

HIGH CURRENT
CURRENT LIMITING DIODE



SOD-80

Central™
Semiconductor Corp.

FEATURES

- LOW COST
- SUPERIOR LOT TO LOT CONSISTENCY
- HIGH RELIABILITY
- LEADED DEVICES AVAILABLE
- SPECIAL SELECTIONS AVAILABLE

DESCRIPTION

The CENTRAL SEMICONDUCTOR CCLHM080 series types are high current silicon field effect current regulator diodes designed for applications requiring a constant current over a wide voltage range. These devices are manufactured in the cost effective SOD-80 double plug case which provides many benefits to the user including space savings and improved thermal characteristics. Special selections of I_P (regulator current) are available for critical applications.

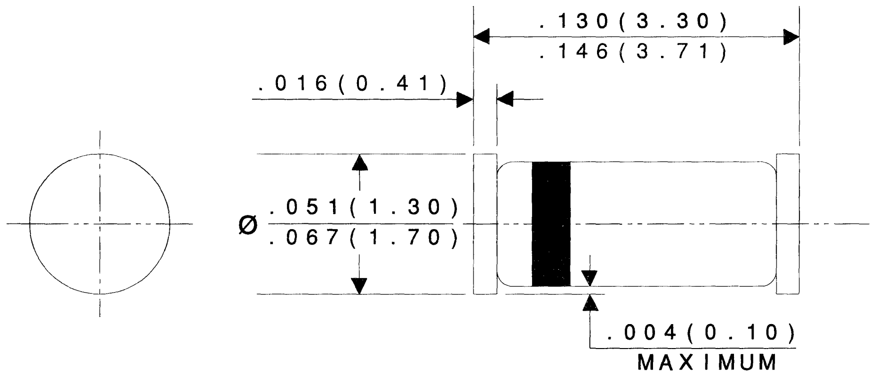
MAXIMUM RATINGS (T_L=75°C)	**SYMBOL**		**UNITS**
Peak Operating Voltage	POV	50	V
Power Dissipation	P_D	800	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +200	°C

TYPE NO.	REGULATOR CURRENT (1)			DYNAMIC IMPEDANCE	KNEE IMPEDANCE	LIMITING VOLTAGE	TEMPERATURE COEFFICIENT
	I_P@V_T=25V			Z_T@V_T=25V	Z_K@V_K=6.0V	V_L@I_L=0.8 I_P MIN	TC*
	mA			MΩ	KΩ	VOLTS	%/°C
	MIN	NOM	MAX	MIN	MIN	MAX	
CCLHM080	6.56	8.20	9.84	0.32	15	3.1	-0.25 TO -0.45
CCLHM100	8.00	10.0	12.0	0.17	6.0	3.5	-0.25 TO -0.45
CCLHM120	9.60	12.0	14.4	0.08	3.0	3.8	-0.25 TO -0.45
CCLHM150	12.0	15.0	18.0	0.03	2.0	4.3	-0.25 TO -0.45

* The Temperature Coefficient is measured between the following points: +25°C, + 50°C.

(1) TESTED USING THE PULSED METHOD. $\left(\text{PULSE WIDTH (ms)} = \dfrac{27.5}{I_P \text{ NOM (mA)}}\right)$

All dimensions in inches (mm).



Marking Codes:

CENTRAL TYPE NO.	BAND 1*	BAND 2	BAND 3
CCLHM080	BLACK	GREEN	YELLOW
CCLHM100	BLACK	ORANGE	PINK
CCLHM120	BLACK	ORANGE	WHITE
CCLHM150	BLACK	ORANGE	LIGHT BLUE

* Cathode Band

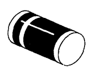
DATA SHEET

R2

Central™
Semiconductor Corp.

CCLM0035 THRU CCLM5750

CURRENT LIMITING DIODE



SOD-80 CASE

DESCRIPTION:
The CENTRAL SEMICONDUCTOR CCLM0035 Series types are silicon field effect current regulator diodes designed for applications requiring a constant current over a wide voltage range. These devices are manufactured in the cost effective SOD-80 double plug case which provides many benefits to the user including space savings and improved thermal characteritcs. Special selections of I_P (regulator current) are available for critical applications.

MAXIMUM RATINGS (T_L = 75°C)	**SYMBOL**		**UNITS**
Peak Operating Voltage	POV	100	V
Power Dissipation	P_D	800	mW
Operation and Storage Junction Temperature	T_J, T_{stg}	-65 to + 200	°C

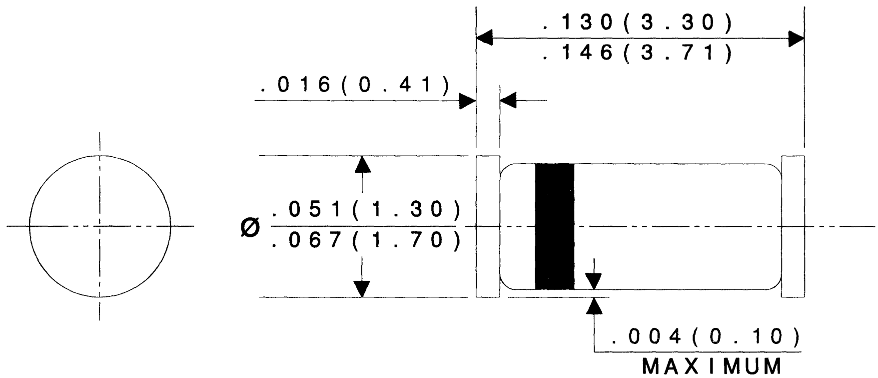
ELECTRICAL CHARACTERISTICS (T_A = 25°C)

TYPE NO.	REGULATOR CURRENT (1)			DYNAMIC IMPEDANCE	KNEE IMPEDANCE	LIMITING VOLTAGE	TEMPERATURE COEFFICIENT
	I_P @ V_T = 25V			Z_T @ V_T = 25V	Z_K @ V_K = 6.0V	V_L @ I_L = 0.8 I_P MIN	TC*
	mA			MΩ	MΩ	V	%/°C
	MIN	NOM	MAX	MIN	MIN	MAX	
CCLM0035	0.010	0.035	0.060	8.0	4.0	0.4	+2.10 TO +0.10
CCLM0130	0.050	0.130	0.210	6.0	2.0	0.6	+2.10 TO +0.10
CCLM0300	0.200	0.310	0.420	4.0	1.0	0.8	+0.40 TO -0.20
CCLM0500	0.400	0.515	0.630	2.0	0.5	1.1	+0.15 TO -0.25
CCLM0750	0.600	0.760	0.920	1.0	0.2	1.4	0.0 TO -0.32
CCLM1000	0.880	1.100	1.320	0.65	0.1	1.7	-0.10 TO -0.37
CCLM1500	1.280	1.500	1.720	0.45	0.07	2.0	-0.13 TO -0.40
CCLM2000	1.680	2.000	2.320	0.35	0.05	2.3	-0.15 TO -0.42
CCLM2700	2.280	2.690	3.100	0.30	0.03	2.7	-0.18 TO -0.45
CCLM3500	3.000	3.550	4.100	0.25	0.02	3.2	-0.20 TO -0.47
CCLM4500	3.900	4.500	5.100	0.20	0.01	3.7	-0.22 TO -0.50
CCLM5750	5.000	5.750	6.500	0.05	0.005	4.5	-0.25 TO -0.53

* The Temperature Coefficient is measured between the following points: +25°C, + 50°C.

(1) TESTED USING THE PULSED METHOD. $\left(\text{PULSE WIDTH (ms)} = \dfrac{27.5}{I_P \text{ NOM (mA)}}\right)$

All dimensions in inches (mm).



Marking Codes:

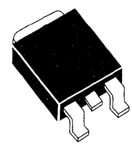
CENTRAL TYPE NO.	BAND 1*	BAND 2	BAND 3
CCLM0035	BLACK	LIGHT BLUE	WHITE
CCLM0130	BLACK	LIGHT BLUE	PINK
CCLM0300	BLACK	LIGHT BLUE	ORANGE
CCLM0500	BLACK	LIGHT BLUE	GREEN
CCLM0750	BLACK	LIGHT BLUE	DARK BLUE
CCLM1000	BLACK	GREEN	PINK
CCLM1500	BLACK	GREEN	ORANGE
CCLM2000	BLACK	GREEN	GREEN
CCLM2700	BLACK	GREEN	LIGHT BLUE
CCLM3500	BLACK	GREEN	DARK BLUE
CCLM4500	BLACK	GREEN	VIOLET
CCLM5750	BLACK	GREEN	WHITE

* Cathode Band

R2

CJD31C NPN
CJD32C PNP

COMPLEMENTARY SILICON POWER TRANSISTOR



DPAK CASE

Central™
Semiconductor Corp.

DESCRIPTION:
The CENTRAL SEMICONDUCTOR CJD31C, CJD32C types are Complementary Silicon Power Transistors manufactured by the epitaxial base process, mounted in a surface mount package designed for power amplifier and high speed switching applications.

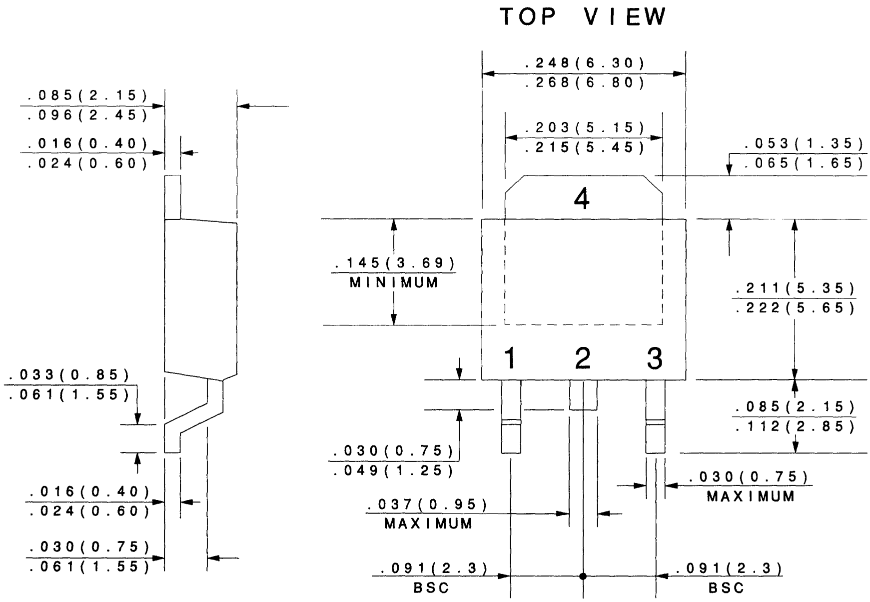
MAXIMUM RATINGS (T_C=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Continuous Collector Current	I_C	3.0	A
Peak Collector Current	I_{CM}	5.0	A
Base Current	I_B	1.0	A
Power Dissipation (T_C=25°C)	P_D	15	W
Power Dissipation (T_A=25°C)	P_D	1.56	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JC}	8.33	°C/W
Thermal Resistance	Θ_{JA}	80.1	°C/W

ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CEO}	V_{CE}=60V		50	μA
I_{CES}	V_{CE}=100V		20	μA
I_{EBO}	V_{EB}=5.0V		1.0	mA
BV_{CEO}	I_C=30mA	100		V
$V_{CE(SAT)}$	I_C=3.0A, I_B=375mA		1.2	V
$V_{BE(ON)}$	V_{CE}=4.0V, I_C=3.0A		1.8	V
h_{FE}	V_{CE}=4.0V, I_C=1.0A	25		
h_{FE}	V_{CE}=4.0V, I_C=3.0A	10	50	
f_T	V_{CE}=10V, I_C=500mA, f=1.0MHz	3.0		MHz
h_{fe}	V_{CE}=10V, I_C=500mA, f=1.0kHz	20		

All dimensions in inches (mm).



LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

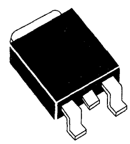
DATA SHEET

R1

CJD41C NPN
CJD42C PNP

COMPLEMENTARY SILICON POWER TRANSISTOR

DPAK POWER !™



DPAK CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CJD41C, CJD42C types are Complementary Silicon Power Transistors manufactured by the epitaxial base process, mounted in a surface mount package designed for power amplifier and high speed switching applications.

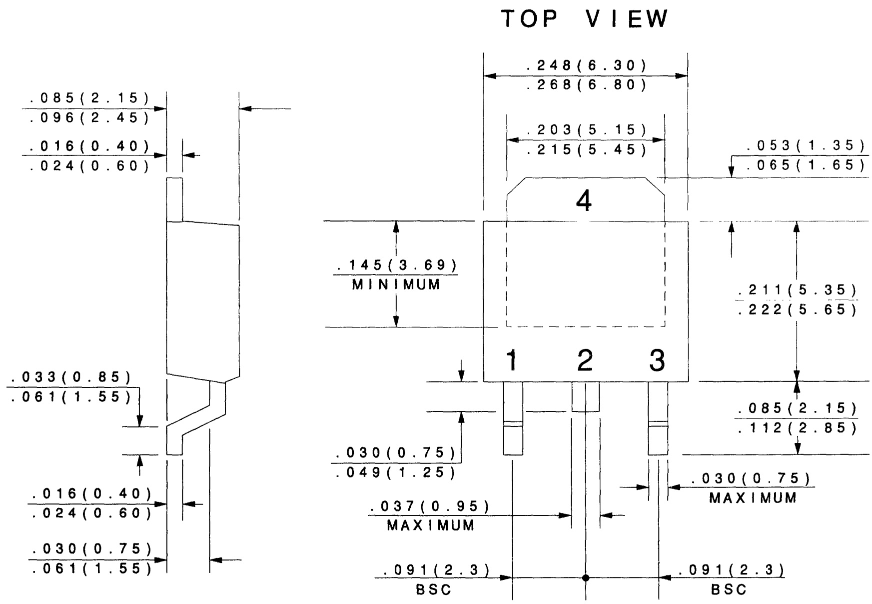
MAXIMUM RATINGS (T_C=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Continuous Collector Current	I_C	6.0	A
Peak Collector Current	I_{CM}	10	A
Base Current	I_B	2.0	A
Power Dissipation (T_C=25°C)	P_D	20	W
Power Dissipation (T_A=25°C)	P_D	1.75	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JC}	6.25	°C/W
Thermal Resistance	Θ_{JA}	71.4	°C/W

ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CEO}	V_{CE}=60V		50	µA
I_{CES}	V_{CE}=100V		10	µA
I_{EBO}	V_{EB}=5.0V		500	µA
BV_{CEO}	I_C=30mA	100		V
$V_{CE(SAT)}$	I_C=6.0A, I_B=600mA		1.5	V
$V_{BE(ON)}$	V_{CE}=4.0V, I_C=6.0A		2.0	V
h_{FE}	V_{CE}=4.0V, I_C=300mA	30		
h_{FE}	V_{CE}=4.0V, I_C=3.0A	15	75	
f_T	V_{CE}=10V, I_C=500mA, f=1.0MHz	3.0		MHz
h_{fe}	V_{CE}=10V, I_C=500mA, f=1.0kHz	20		

All dimensions in inches (mm).



LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

DATA SHEET

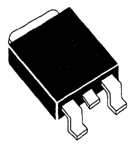
NEW

CJD44H11 NPN
CJD45H11 PNP

COMPLEMENTARY SILICON POWER TRANSISTOR

Central™ Semiconductor Corp.

DPAK POWER!™



DPAK CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CJD44H11, CJD45H11 types are Complementary Silicon Power Transistors manufactured in a surface mount package designed for switching and power amplifier applications.

MAXIMUM RATINGS (T_C=25°C)

	SYMBOL		UNITS
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Continuous Collector Current	I_C	8.0	A
Peak Collector Current	I_{CM}	16	A
Power Dissipation (T_C=25°C)	P_D	20	W
Power Dissipation (T_A=25°C)	P_D	1.75	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JC}	6.25	°C/W
Thermal Resistance	Θ_{JA}	71.4	°C/W

ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

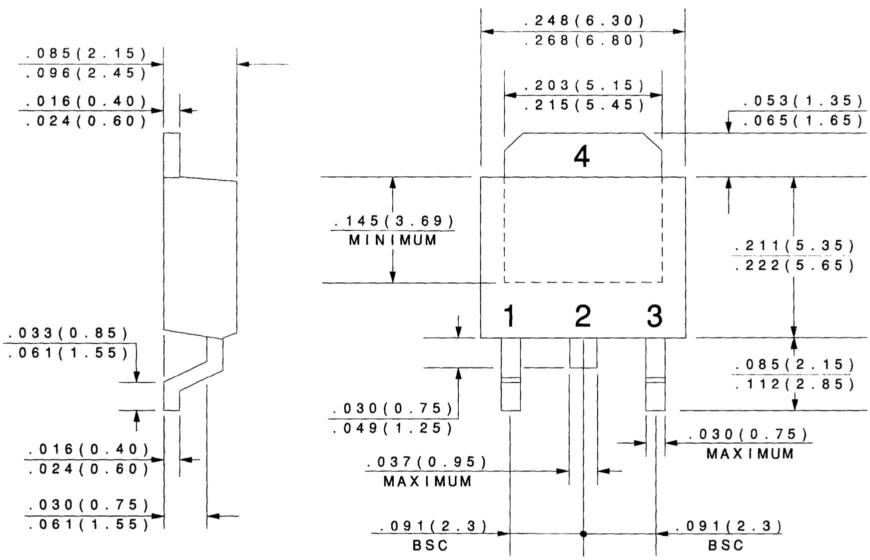
SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{CES}	V_{CE}=80V			10	µA
I_{EBO}	V_{EB}=5.0V			50	µA
BV_{CEO}	I_C=30mA	80			V
$V_{CE(SAT)}$	I_C=8.0A, I_B=400mA			1.0	V
$V_{BE(SAT)}$	I_C=8.0A, I_B=800mA			1.5	V
h_{FE}	V_{CE}=1.0V, I_C=2.0A	60			
h_{FE}	V_{CE}=1.0V, I_C=4.0A	40			
f_T	V_{CE}=10V, I_C=500mA, f=20MHz (CJD44H11)		60		MHz
f_T	V_{CE}=10V, I_C=500mA, f=20MHz (CJD45H11)		50		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=0.1MHz (CJD44H11)		120		pF
C_{ob}	V_{CB}=10V, I_E=0, f=0.1MHz (CJD45H11)		220		pF
$t_d + t_r$	I_C=5.0A, I_{B1}=500mA (CJD44H11)		320		ns
$t_d + t_r$	I_C=5.0A, I_{B1}=500mA (CJD45H11)		150		ns

DATA SHEET

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
t_s	I_C=5.0A, I_{B1}=I_{B2}=500mA (CJD44H11, CJD45H11)		450		ns
t_f	I_C=5.0A, I_{B1}=I_{B2}=500mA (CJD44H11)		130		ns
t_f	I_C=5.0A, I_{B1}=I_{B2}=500mA (CJD45H11)		100		ns

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

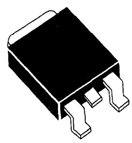
1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

DATA SHEET

CJD47
CJD50

NPN SILICON
POWER TRANSISTOR

DPAK POWER ! ™



DPAK CASE

Central™
Semiconductor Corp.

DESCRIPTION:
The CENTRAL SEMICONDUCTOR CJD47, CJD50 types are NPN Silicon Power Transistors manufactured in a surface mount package designed for high voltage applications such as power supplies and other switching applications.

MAXIMUM RATINGS (T_C=25°C)

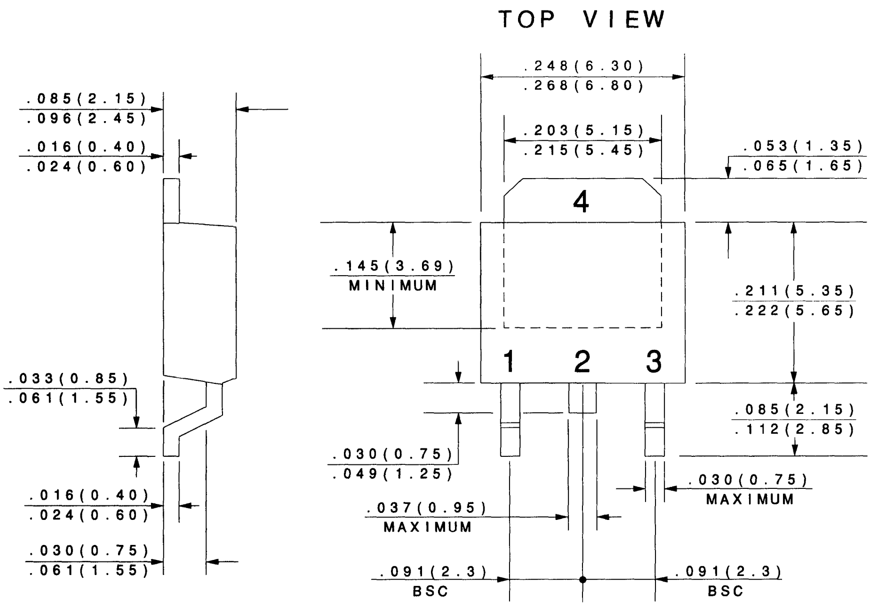
	SYMBOL	CJD47	CJD50	UNITS
Collector-Base Voltage	V_{CBO}	350	500	V
Collector-Emitter Voltage	V_{CEO}	250	400	V
Emitter-Base Voltage	V_{EBO}	5.0		V
Continuous Collector Current	I_C	1.0		A
Peak Collector Current	I_{CM}	2.0		A
Base Current	I_B	600		mA
Power Dissipation (T_C=25°C)	P_D	15		W
Power Dissipation (T_A=25°C)	P_D	1.56		W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150		°C
Thermal Resistance	Θ_{JC}	8.33		°C/W
Thermal Resistance	Θ_{JA}	80.1		°C/W

ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CEO}	V_{CE}=150V (CJD47)		200	µA
I_{CEO}	V_{CE}=300V (CJD50)		200	µA
I_{CES}	V_{CE}=350V (CJD47)		100	µA
I_{CES}	V_{CE}=500V (CJD50)		100	µA
I_{EBO}	V_{EB}=5.0V		1.0	mA
BV_{CEO}	I_C=30mA (CJD47)	250		V
BV_{CEO}	I_C=30mA (CJD50)	400		V
$V_{CE(SAT)}$	I_C=1.0A, I_B=200mA		1.0	V
$V_{BE(ON)}$	V_{CE}=10V, I_C=1.0A		1.5	V
h_{FE}	V_{CE}=10V, I_C=300mA	30	150	

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=10V, I_C=1.0A	10		
f_T	V_{CE}=10V, I_C=200mA, f=2.0MHz	10		MHz
h_{fe}	V_{CE}=10V, I_C=200mA, f=1.0kHz	25		

All dimensions in inches (mm).



LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

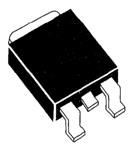
DATA SHEET

R1

CJD112 NPN
CJD117 PNP

COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTOR

DPAK POWER!™



DPAK CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CJD112, CJD117 types are Complementary Silicon Power Darlington Transistors manufactured in a surface mount package designed for low speed switching and amplifier applications.

MAXIMUM RATINGS (T_C=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Continuous Collector Current	I_C	2.0	A
Peak Collector Current	I_{CM}	4.0	A
Base Current	I_B	50	mA
Power Dissipation (T_C=25°C)	P_D	20	W
Power Dissipation (T_A=25°C)	P_D	1.75	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JC}	6.25	°C/W
Thermal Resistance	Θ_{JA}	71.4	°C/W

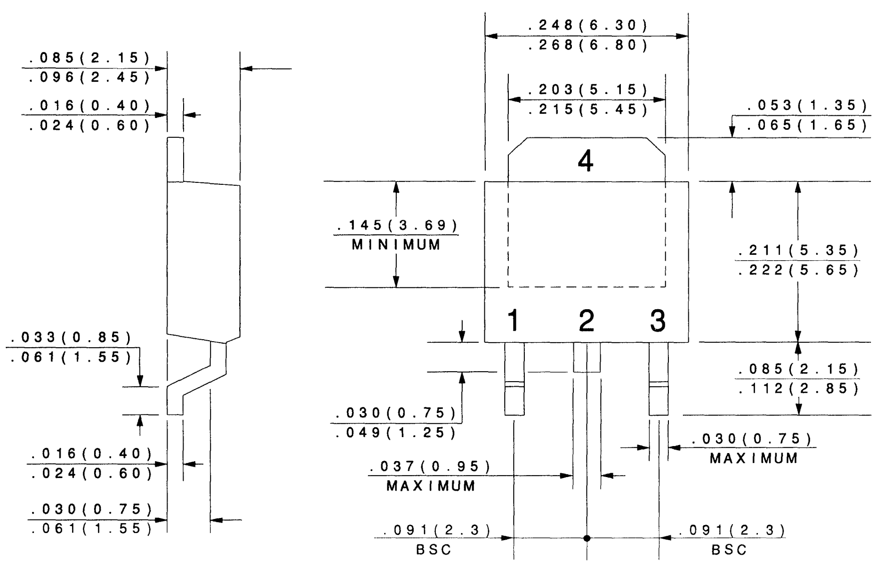
ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CEO}	V_{CE}=50V		20	μA
I_{CEV}	V_{CE}=80V, $V_{BE(off)}$=1.5V		10	μA
I_{CEV}	V_{CE}=80V, $V_{BE(off)}$=1.5V, T_C=125°C		500	μA
I_{CBO}	V_{CB}=80V		10	μA
I_{CBO}	V_{CB}=100V		20	μA
I_{EBO}	V_{EB}=5.0V		2.0	mA
BV_{CEO}	I_C=30mA		100	V
$V_{CE(SAT)}$	I_C=2.0A, I_B=8.0mA		2.0	V
$V_{CE(SAT)}$	I_C=4.0A, I_B=40mA		3.0	V
$V_{BE(SAT)}$	I_C=4.0A, I_B=40mA		4.0	V

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$V_{BE(ON)}$	V_{CE}=3.0V, I_C=2.0A		2.8	V
h_{FE}	V_{CE}=3.0V, I_C=0.5A	500		
h_{FE}	V_{CE}=3.0V, I_C=2.0A	1000	12000	
h_{FE}	V_{CE}=3.0V, I_C=4.0A	200		
f_T	V_{CE}=10V, I_C=750mA, f=1.0MHz	25		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=0.1MHz (CJD112)		100	pF
C_{ob}	V_{CB}=10V, I_E=0, f=0.1MHz (CJD117)		200	pF

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

DATA SHEET

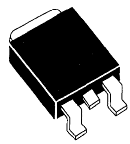
R1

NEW

CJD122 NPN
CJD127 PNP

COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTOR

DPAK POWER!™



DPAK CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CJD122, CJD127 types are Complementary Silicon Power Darlington Transistors manufactured in a surface mount package designed for low speed switching and amplifier applications.

MAXIMUM RATINGS (T_C=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Continuous Collector Current	I_C	8.0	A
Peak Collector Current	I_{CM}	16	A
Base Current	I_B	120	mA
Power Dissipation (T_C=25°C)	P_D	20	W
Power Dissipation (T_A=25°C)	P_D	1.75	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JC}	6.25	°C/W
Thermal Resistance	Θ_{JA}	71.4	°C/W

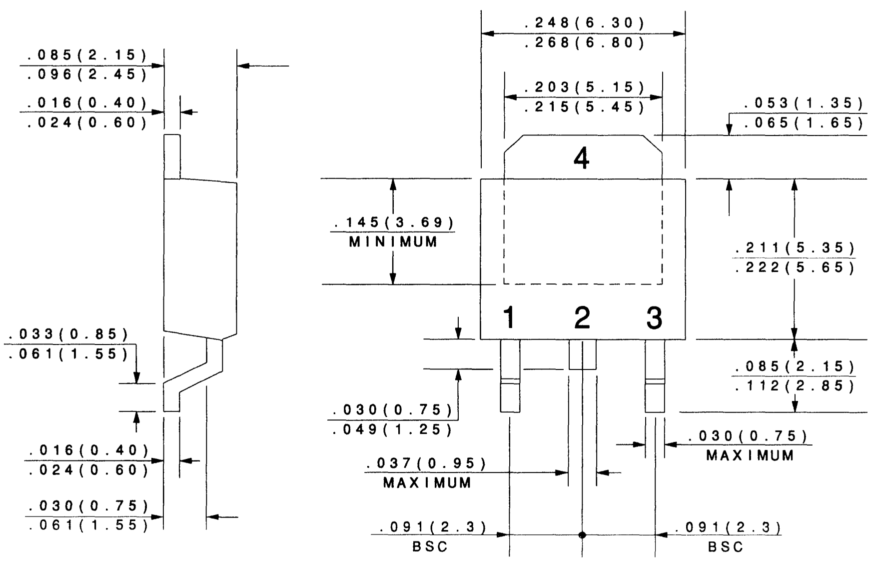
ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CEO}	V_{CE}=50V		10	µA
I_{CEV}	V_{CE}=100V, $V_{BE(off)}$=1.5V		10	µA
I_{CEV}	V_{CE}=100V, $V_{BE(off)}$=1.5V, T_C=125°C		500	µA
I_{CBO}	V_{CB}=100V		10	µA
I_{EBO}	V_{EB}=5.0V		2.0	mA
BV_{CEO}	I_C=30mA	100		V
$V_{CE(SAT)}$	I_C=4.0A, I_B=16mA		2.0	V
$V_{CE(SAT)}$	I_C=8.0A, I_B=80mA		4.0	V
$V_{BE(SAT)}$	I_C=8.0A, I_B=80mA		4.5	V

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$V_{BE(ON)}$	V_{CE}=4.0V, I_C=4.0A		2.8	V
h_{FE}	V_{CE}=4.0V, I_C=4.0A	1000	12000	
h_{FE}	V_{CE}=4.0V, I_C=8.0A	100		
f_T	V_{CE}=4.0V, I_C=3.0A, f=1.0MHz	4.0		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz (CJD122)		200	pF
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz (CJD127)		300	pF
h_{fe}	V_{CE}=4.0V, I_C=3.0A, f=1.0kHz		300	

All dimensions in inches (mm).

TOP VIEW



DATA SHEET

LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

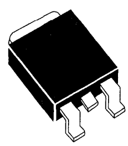
R1

NEW

CJD200 NPN
CJD210 PNP

COMPLEMENTARY SILICON POWER TRANSISTOR

DPAK POWER!™



DPAK CASE

Central™
Semiconductor Corp.

DESCRIPTION:
The CENTRAL SEMICONDUCTOR CJD200, CJD210 types are Complementary Silicon Power Transistors manufactured in a surface mount package designed for high current amplifier applications.

MAXIMUM RATINGS (T_C=25°C)

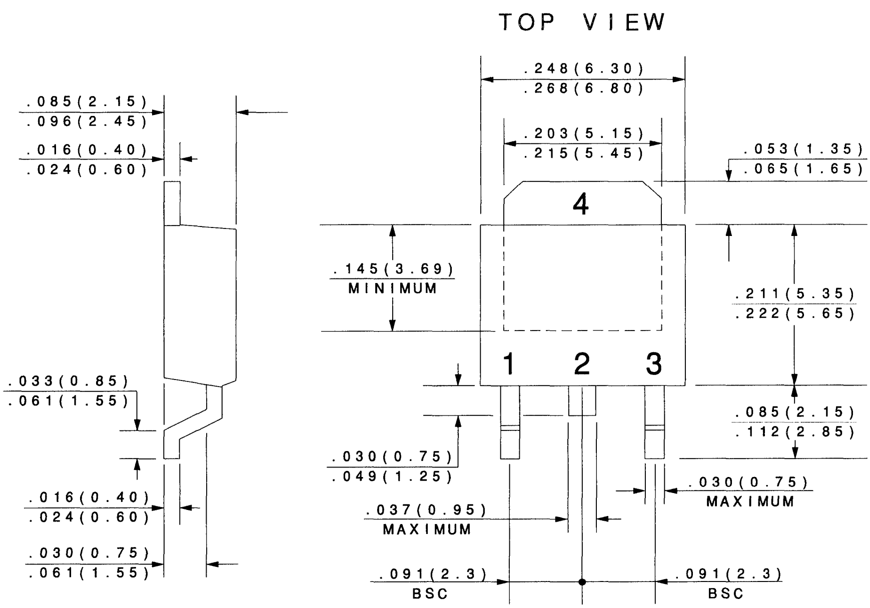
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CEO}	25	V
Emitter-Base Voltage	V_{EBO}	8.0	V
Continuous Collector Current	I_C	5.0	A
Peak Collector Current	I_{CM}	10	A
Base Current	I_B	1.0	A
Power Dissipation (T_C=25°C)	P_D	12.5	W
Power Dissipation (T_A=25°C)	P_D	1.4	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JC}	10	°C/W
Thermal Resistance	Θ_{JA}	89.3	°C/W

ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=40V		100	nA
I_{CBO}	V_{CB}=40V, T_C=125°C		100	µA
I_{EBO}	V_{EB}=8.0V		100	nA
BV_{CEO}	I_C=10mA	25		V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		0.3	V
$V_{CE(SAT)}$	I_C=2.0A, I_B=200mA		0.75	V
$V_{CE(SAT)}$	I_C=5.0A, I_B=1.0A		1.8	V
$V_{BE(SAT)}$	I_C=5.0A, I_B=1.0A		2.5	V
$V_{BE(ON)}$	V_{CE}=1.0V, I_C=2.0A		1.6	V
h_{FE}	V_{CE}=1.0V, I_C=500mA	70		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=1.0V, I_C=2.0A	45	180	
h_{FE}	V_{CE}=2.0V, I_C=5.0A	10		
f_T	V_{CE}=10V, I_C=100mA, f=10MHz	65		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=0.1MHz (CJD200)		80	pF
C_{ob}	V_{CB}=10V, I_E=0, f=0.1MHz (CJD210)		120	pF

All dimensions in inches (mm).



LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

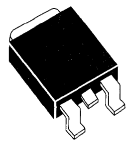
DATA SHEET

R1

CJD340 NPN
CJD350 PNP

COMPLEMENTARY SILICON POWER TRANSISTOR

DPAK POWER!™



DPAK CASE

Central™
Semiconductor Corp.

DESCRIPTION:
The CENTRAL SEMICONDUCTOR CJD340, CJD350 types are Complementary Silicon Power Transistors manufactured in a surface mount package designed for high voltage general purpose applications.

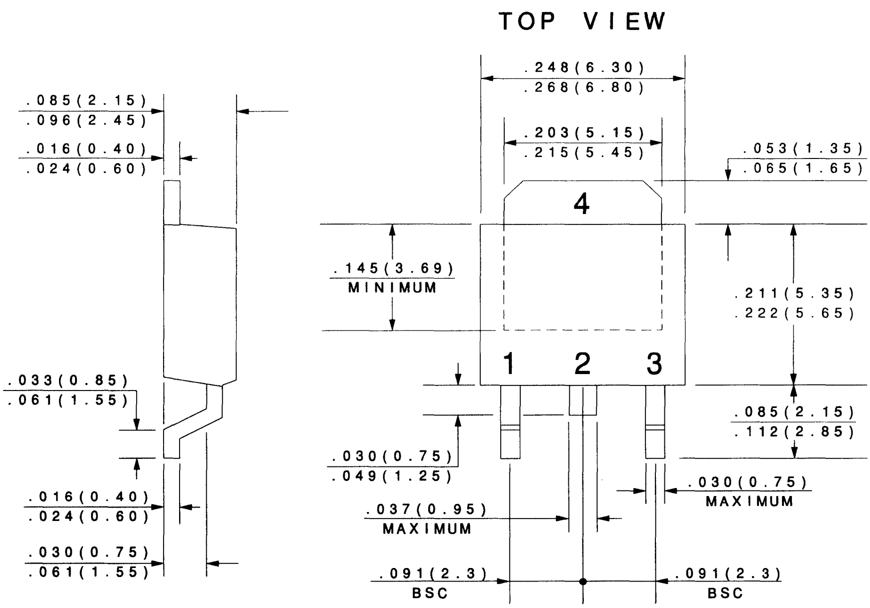
MAXIMUM RATINGS (T_C=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	300	V
Collector-Emitter Voltage	V_{CEO}	300	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Continuous Collector Current	I_C	500	mA
Peak Collector Current	I_{CM}	750	mA
Power Dissipation (T_C=25°C)	P_D	15	W
Power Dissipation (T_A=25°C)	P_D	1.56	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JC}	8.33	°C/W
Thermal Resistance	Θ_{JA}	80.1	°C/W

ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=300V		100	µA
I_{EBO}	V_{EB}=3.0V		100	µA
BV_{CEO}	I_C=1.0mA	300		V
h_{FE}	V_{CE}=10V, I_C=50mA	30	240	

All dimensions in inches (mm).



LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

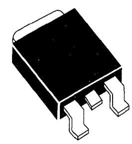
R1

NEW

CJD2955 PNP
CJD3055 NPN

COMPLEMENTARY SILICON POWER TRANSISTOR

DPAK POWER !™



DPAK CASE

Central™
Semiconductor Corp.

DESCRIPTION:
The CENTRAL SEMICONDUCTOR CJD2955, CJD3055 types are Complementary Silicon Power Transistors manufactured by the epitaxial base process, mounted in a surface mount package designed for high current amplifier and switching applications.

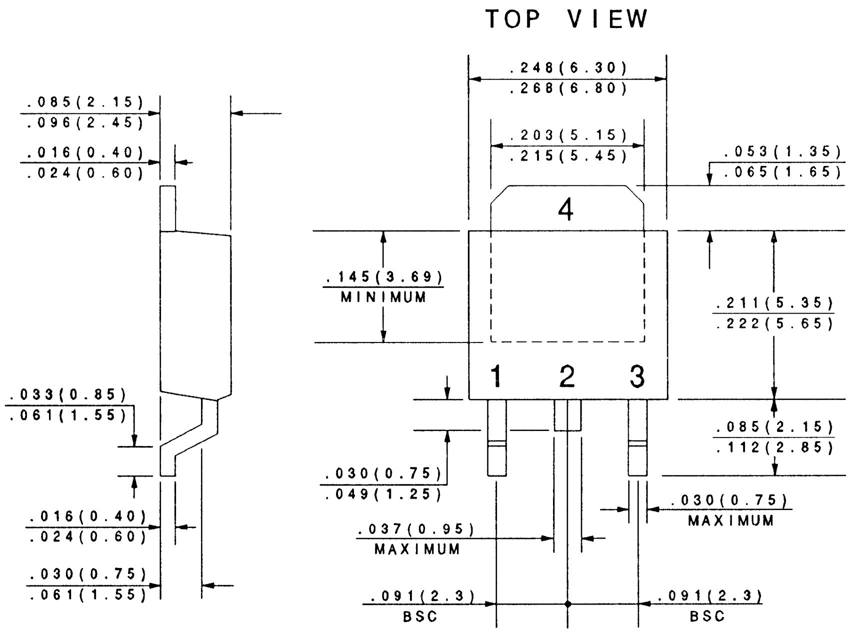
MAXIMUM RATINGS (T_C=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	70	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	10	A
Base Current	I_B	6.0	A
Power Dissipation (T_C=25°C)	P_D	20	W
Power Dissipation (T_A=25°C)	P_D	1.75	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JC}	6.25	°C/W
Thermal Resistance	Θ_{JA}	71.4	°C/W

ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CEO}	V_{CE}=30V		50	µA
I_{CEV}	V_{CE}=70V, $V_{BE(off)}$=1.5V		20	µA
I_{CEV}	V_{CE}=70V, $V_{BE(off)}$=1.5V, T_C=150°C		2.0	mA
I_{CBO}	V_{CB}=70V		20	µA
I_{CBO}	V_{CB}=70V, T_C=150°C		2.0	mA
I_{EBO}	V_{EB}=5.0V		500	µA
BV_{CEO}	I_C=30mA	60		V
$V_{CE(SAT)}$	I_C=4.0A, I_B=400mA		1.1	V
$V_{CE(SAT)}$	I_C=10A, I_B=3.3A		8.0	V
$V_{BE(ON)}$	V_{CE}=4.0V, I_C=4.0A		1.8	V
h_{FE}	V_{CE}=4.0V, I_C=4.0A	20	100	
h_{FE}	V_{CE}=4.0V, I_C=10A	5.0		
f_T	V_{CE}=10V, I_C=500mA, f=1.0MHz	2.0		MHz

All dimensions in inches (mm).



LEAD CODE:

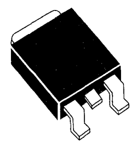
1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

CJD13003

NPN SILICON
POWER TRANSISTOR

Central™
Semiconductor Corp.

DPAK POWER!™



DPAK CASE

DESCRIPTION:
The CENTRAL SEMICONDUCTOR CJD13003 type is an NPN Silicon Power Transistors manufactured in a surface mount package designed for high voltage, high speed power switching inductive applications.

MAXIMUM RATINGS (T_C=25°C)

	SYMBOL		UNITS
Collector-Emitter Voltage	V_{CEV}	700	V
Collector-Emitter Voltage	V_{CEO}	400	V
Emitter-Base Voltage	V_{EBO}	9.0	V
Continuous Collector Current	I_C	1.5	A
Peak Collector Current	I_{CM}	3.0	A
Continuous Base Current	I_B	750	mA
Peak Base Current	I_{BM}	1.5	A
Continuous Emitter Current	I_E	2.25	A
Peak Emitter Current	I_{EM}	4.5	A
Power Dissipation (T_C=25°C)	P_D	15	W
Power Dissipation (T_A=25°C)	P_D	1.56	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JC}	8.33	°C/W
Thermal Resistance	Θ_{JA}	80.1	°C/W

ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

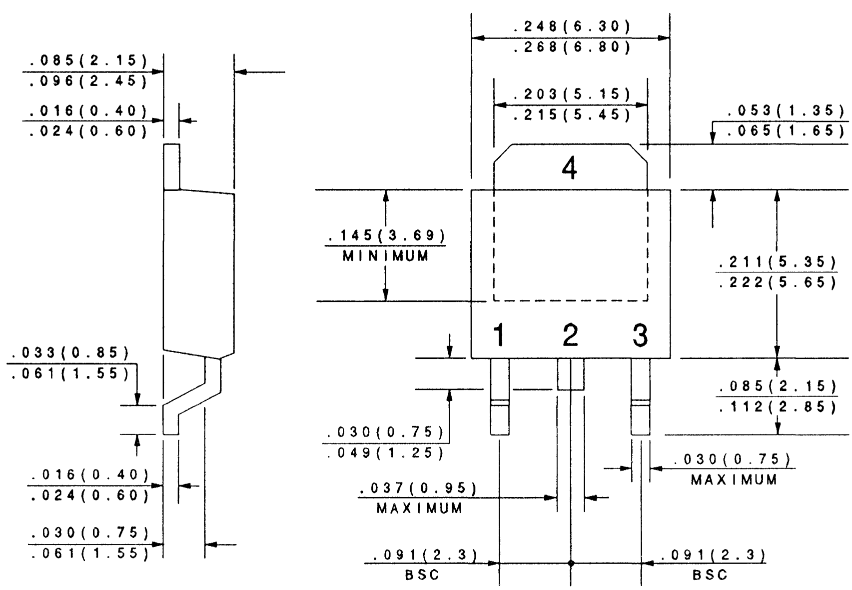
SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{CEV}	V_{CE}=700V, $V_{BE(off)}$=1.5V			100	µA
I_{CEV}	V_{CE}=700V, $V_{BE(off)}$=1.5V, T_C=100°C			2.0	mA
I_{EBO}	V_{EB}=9.0V			1.0	mA
BV_{CEO}	I_C=10mA	400			V
$V_{CE(SAT)}$	I_C=500mA, I_B=100mA			0.5	V
$V_{CE(SAT)}$	I_C=1.0A, I_B=250mA			1.0	V
$V_{CE(SAT)}$	I_C=1.5A, I_B=500mA			3.0	V
$V_{CE(SAT)}$	I_C=1.0A, I_B=250mA, T_C=100°C			1.0	V

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$V_{BE(SAT)}$	I_C=500mA, I_B=100mA			1.0	V
$V_{BE(SAT)}$	I_C=1.0A, I_B=250mA			1.2	V
$V_{BE(SAT)}$	I_C=1.0A, I_B=250mA, T_C=100°C			1.1	V
h_{FE}	V_{CE}=2.0V, I_C=500mA	8.0		40	
h_{FE}	V_{CE}=2.0V, I_C=1.0A	5.0		25	
f_T	V_{CE}=10V, I_C=100mA, f=1.0MHz	4.0			MHz
C_{ob}	V_{CB}=10V, I_E=0, f=0.1MHz		20		pF
t_d	V_{CC}=125V, I_C=1.0A, I_{B1}=I_{B2}=200mA (1)			0.1	µs
t_r	V_{CC}=125V, I_C=1.0A, I_{B1}=I_{B2}=200mA (1)			1.0	µs
t_s	V_{CC}=125V, I_C=1.0A, I_{B1}=I_{B2}=200mA (1)			4.0	µs
t_f	V_{CC}=125V, I_C=1.0A, I_{B1}=I_{B2}=200mA (1)			0.7	µs

(1) tp=25µs, Duty Cycle≤1%

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

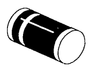
1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

DATA SHEET

R1

CLL457A
CLL459A

LOW LEAKAGE SILICON DIODE



SOD-80 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CLL457A, CLL459A types are silicon planar diodes, manufactured in a hermetically sealed glass surface mount package, designed for low leakage applications.
Marking Code: Cathode band.

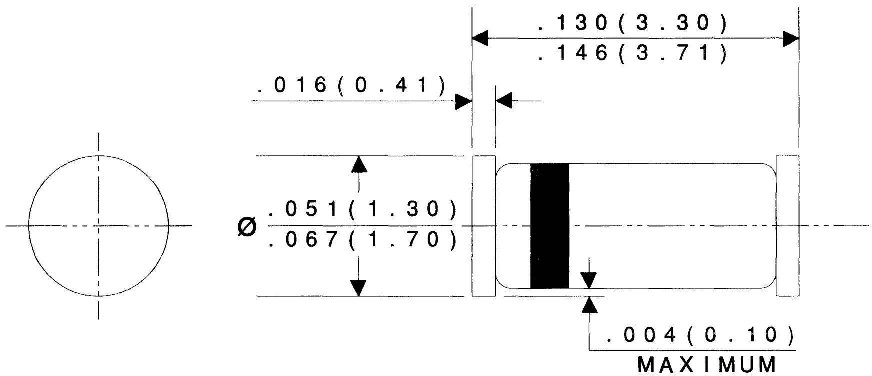
MAXIMUM RATINGS: (T_A=25°C)

	SYMBOL	CLL457A	CLL459A	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	70	200	V
Peak Working Reverse Voltage	V_{RWM}	60	175	V
Average Forward Current	I_O	200		mA
Forward Steady-State Current	I_F	500		mA
Peak Forward Surge Current (1.0μs pulse)	I_{FSM}	4.0		A
Power Dissipation	P_D	500		mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +200		°C
Thermal Resistance	Θ_{JA}	350		°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

		CLL457A		CLL459A		
SYMBOL	**TEST CONDITIONS**	**MIN**	**MAX**	**MIN**	**MAX**	**UNITS**
BV_R	I_R=100μA	70		200		V
I_R	V_R=Rated V_{RWM}		25		25	nA
I_R	V_R=Rated V_{RWM}, T_A=150°C		5.0		5.0	μA
V_F	I_F=100mA		1.0		1.0	V
C_T	V_R=0, f=1.0MHz		6.0		6.0	pF

All dimensions in inches (mm).

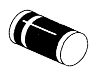


DATA SHEET

R1

CLL914

HIGH SPEED SWITCHING DIODE



SOD-80 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CLL914 type is an ultra-high speed silicon switching diode manufactured by the epitaxial planar process, in a hermetically sealed glass surface mount package, designed for high speed switching applications.
Marking code: Cathode Band.

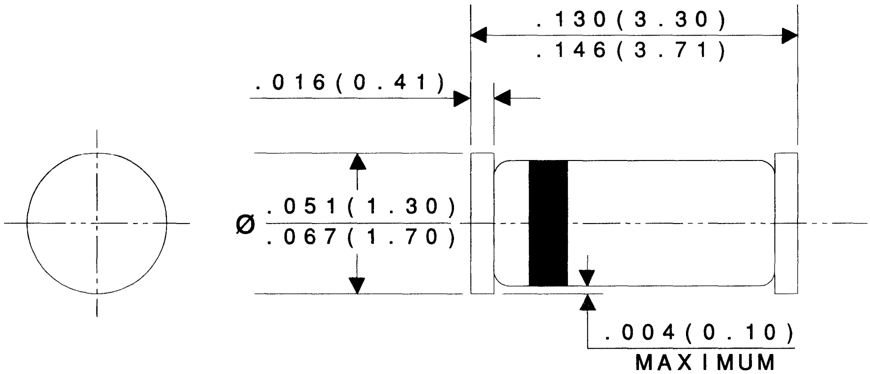
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Continuous Reverse Voltage	V_R	75	V
Peak Repetitive Reverse Voltage	V_{RRM}	100	V
Continuous Forward Current	I_F	250	mA
Peak Repetitive Forward Current	I_{FRM}	250	mA
Forward Surge Current, tp=1 μsec.	I_{FSM}	4000	mA
Forward Surge Current, tp=1 sec.	I_{FSM}	1000	mA
Power Dissipation	P_D	500	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +200	°C
Thermal Resistance	Θ_{JA}	350	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
V_{BR}	I_R=100μA	100		V
I_R	V_R=20V		25	nA
I_R	V_R=75V		5.0	μA
V_F	I_F=10mA		1.0	V
C_T	V_R=0, f=1 MHz		4.0	pF
t_{rr}	I_R=I_F=10mA, R_L=100Ω, Rec. to 1.0mA		4.0	ns

All dimensions in inches (mm).

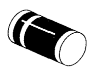


DATA
SHEET

R2

CLL2003

HIGH VOLTAGE SWITCHING DIODE



SOD-80 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CLL2003 type is a silicon switching diode manufactured by the epitaxialplanar process, designed for applications requiring high voltage capability.
Marking Code: Cathode band.

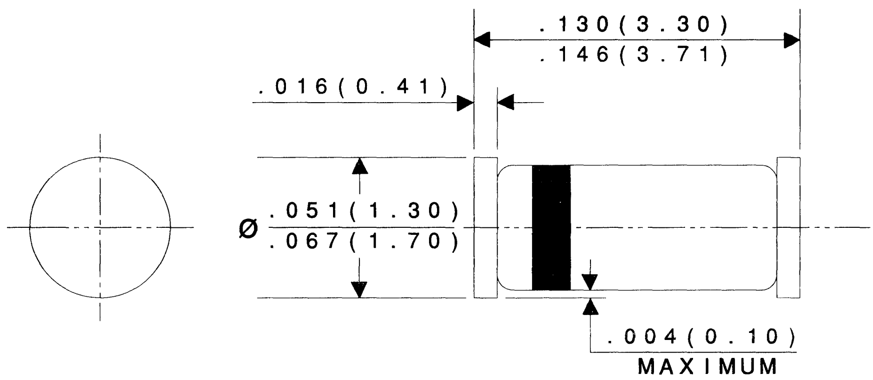
MAXIMUM RATINGS (T_A=25^{o}C)

	SYMBOL		UNITS
Continuous Reverse Voltage	V_R	250	V
Peak Repetitive Reverse Voltage	V_{RRM}	250	V
Average Forward Current	I_O	200	mA
Continuous Forward Current	I_F	250	mA
Peak Repetitive Forward Current	I_{FRM}	625	mA
Forward Surge Current, tp=1 µs	I_{FSM}	4000	mA
Forward Surge Current, tp=1 s	I_{FSM}	1000	mA
Power Dissipation	P_D	500	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +200	^{o}C
Thermal Resistance	Θ_{JA}	350	^{o}C/W

ELECTRICAL CHARACTERISTICS (T_A=25^{o}C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
BV_R	I_R=100µA	250		V
I_R	V_R=200V		100	nA
I_R	V_R=200V, T_A=150^{o}C		100	µA
V_F	I_F=100mA		1.00	V
V_F	I_F=200mA		1.25	V
C_T	V_R=0, f=1 MHz		5.0	pF
t_{rr}	I_F=I_R=30mA, RECOV. TO 3.0mA, R_L=100Ω		50	ns

All dimensions in inches (mm).

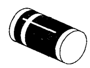


DATA SHEET

R2

CLL3595

LOW LEAKAGE SILICON DIODE



SOD-80 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CLL3595 type is an epitaxial planar silicon diode, manufactured in a hermetically sealed glass surface mount package, designed for low leakage, high conductance applications. **Marking Code: Cathode Band.**

MAXIMUM RATINGS: (T_A=25°C)

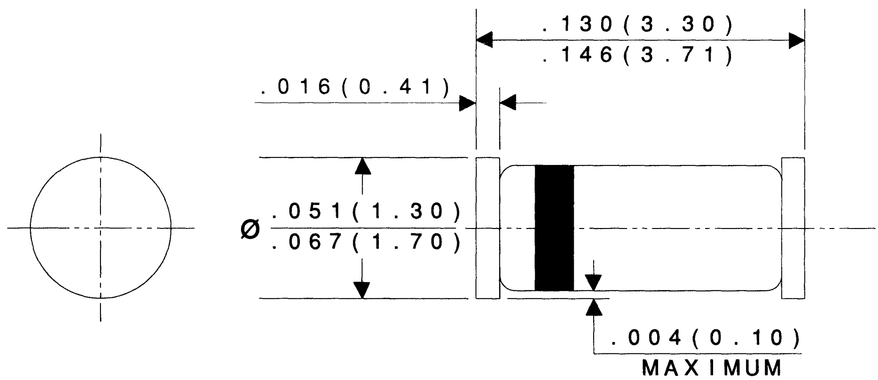
	SYMBOL		UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	150	V
Peak Working Reverse Voltage	V_{RWM}	125	V
Average Forward Current	I_O	150	mA
Forward Steady-State Current	I_F	225	mA
Recurrent Peak Forward Current	i_f	600	mA
Peak Forward Surge Current (1.0s pulse)	I_{FSM}	500	mA
Peak Forward Surge Current (1.0μs pulse)	I_{FSM}	4.0	A
Power Dissipation	P_D	500	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +200	°C
Thermal Resistance	Θ_{JA}	350	°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
BV_R	I_R=100μA	150		V
I_R	V_R=125V		1.0	nA
I_R	V_R=125V, T_A=125°C		500	nA
I_R	V_R=125V, T_A=150°C		3.0	μA
I_R	V_R=30V, T_A=125°C		300	nA
V_F	I_F=1.0mA	0.52	0.68	V
V_F	I_F=5.0mA	0.60	0.75	V
V_F	I_F=10mA	0.65	0.80	V
V_F	I_F=50mA	0.75	0.88	V
V_F	I_F=100mA	0.79	0.92	V
V_F	I_F=200mA	0.83	1.00	V

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
C_T	V_R=0, f=1.0MHz		8.0	pF
t_{rr}	V_R=3.5V, I_f=10mA, R_L=1.0kΩ		3.0	µs

All dimensions in inches (mm).

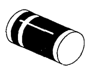


DATA
SHEET

Central™
Semiconductor Corp.

CLL4150

HIGH SPEED SWITCHING DIODE



SOD-80 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CLL4150 type is an ultra-high speed silicon switching diode manufactured by the epitaxial planar process, in a hermetically sealed glass surface mount package, designed for high speed switching applications.
Marking Code: Cathode Band.

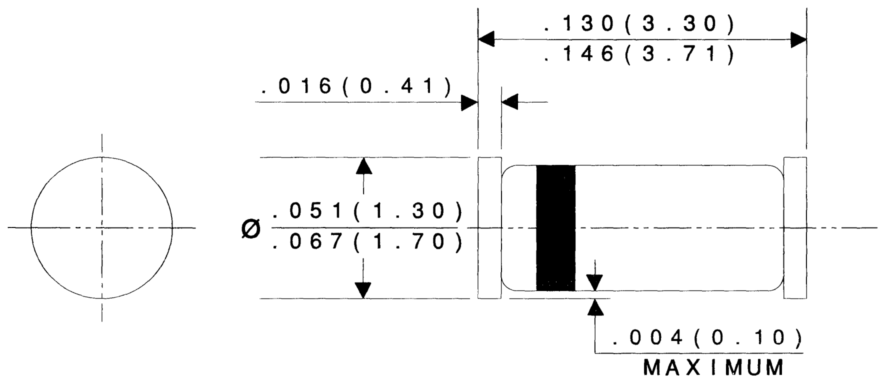
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Continuous Reverse Voltage	V_R	50	V
Peak Repetitive Reverse Voltage	V_{RRM}	50	V
Continuous Forward Current	I_F	300	mA
Peak Repetitive Forward Current	I_{FRM}	600	mA
Forward Surge Current, tp=1 µsec.	I_{FSM}	4000	mA
Forward Surge Current, tp=1 sec.	I_{FSM}	1000	mA
Power Dissipation	P_D	500	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +200	°C
Thermal Resistance	Θ_{JA}	350	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
BV_R	I_R=5.0µA	75		V
I_R	V_R=50V		100	nA
V_F	I_F=1.0mA	0.54	0.62	V
V_F	I_F=10mA	0.66	0.74	V
V_F	I_F=50mA	0.76	0.86	V
V_F	I_F=100mA	0.82	0.92	V
V_F	I_F=200mA	0.87	1.0	V
C_T	V_R=0, f=1 MHz		4.0	pF
t_{rr}	I_R=I_F=10mA, R_L=100Ω, Rec. to 1.0mA		4.0	ns

All dimensions in inches (mm).

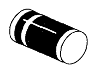


DATA SHEET

R2

CLL4448

HIGH SPEED SWITCHING DIODE



SOD-80 CASE

Central Semiconductor Corp.™

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CLL4448 type is a ultra-high speed silicon switching diode manufactured by the epitaxial planar process, in a hermetically sealed glass surface mount package, designed for high speed switching applications.
Marking Code: Cathode Band.

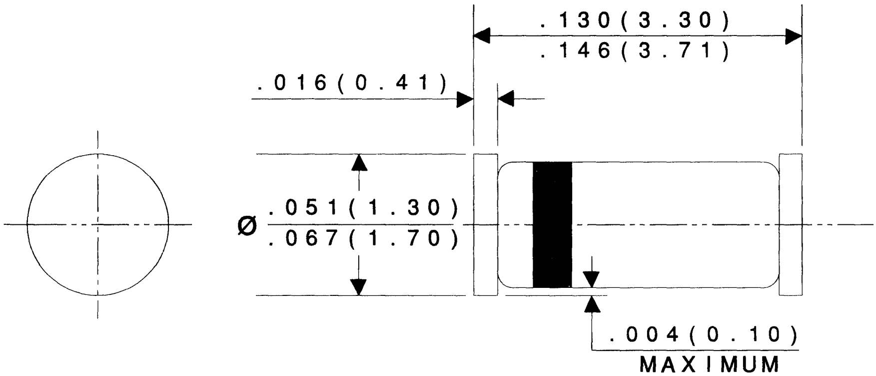
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Continuous Reverse Voltage	V_R	75	V
Peak Repetitive Reverse Voltage	V_{RRM}	100	V
Continuous Forward Current	I_F	250	mA
Peak Repetitive Forward Current	I_{FRM}	250	mA
Forward Surge Current, tp=1 μsec.	I_{FSM}	4000	mA
Forward Surge Current, tp=1 sec.	I_{FSM}	1000	mA
Power Dissipation	P_D	500	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +200	°C
Thermal Resistance	Θ_{JA}	350	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
V_{BR}	I_R=5.0μA	75		V
V_{BR}	I_R=100μA	100		V
I_R	V_R=20V		25	nA
V_F	I_F=5.0mA	0.62	0.72	V
V_F	I_F=100mA		1.0	V
C_T	V_R=0, f=1 MHz		4.0	pF
t_{rr}	$I_R=I_F$=10mA, R_L=100Ω, Rec. to 1.0mA		4.0	ns

All dimensions in inches (mm).

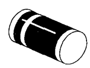


DATA SHEET

R2

CLL4614
THRU
CLL4627

500mW LOW NOISE ZENER DIODE
5% TOLERANCE



SOD-80 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CLL4614 Series Silicon Zener Diode is a high quality voltage regulator designed for low leakage, low current and low noise applications.
Marking Code: Cathode Band

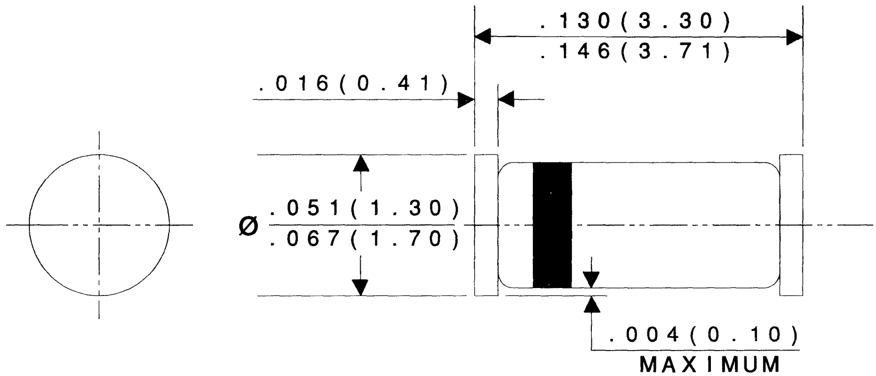
ABSOLUTE MAXIMUM RATINGS	SYMBOL		UNITS
Power Dissipation (@ T_A=25°C)	P_D	500	mW
Operating and Storage Temperature	T_J,T_{stg}	-65 to +200	°C

ELECTRICAL CHARACTERISTICS
(T_A=25°C) V_F=1.0V MAX @ I_F = 200mA FOR ALL TYPES.

Type No.	Zener Voltage V_Z @ I_{ZT}	Test Current I_{ZT}	Maximum Zener Impedance Z_{ZT} @ I_{ZT}	Maximum Reverse Leakage Current I_R @ V_R		Maximum Zener Current I_{ZM}	Maximum Noise Density N_D @ I_{ZT}=250µA
	VOLTS	µA	Ω	µA	VOLTS	mA	µV/√Hz
CLL4614*	1.8	250	1200	7.5	1.0	120	1.0
CLL4615*	2.0	250	1250	5.0	1.0	110	1.0
CLL4616*	2.2	250	1300	4.0	1.0	100	1.0
CLL4617*	2.4	250	1400	2.0	1.0	95	1.0
CLL4618*	2.7	250	1500	1.0	1.0	90	1.0
CLL4619*	3.0	250	1600	0.8	1.0	85	1.0
CLL4620*	3.3	250	1650	7.5	1.5	80	1.0
CLL4621*	3.6	250	1700	7.5	2.0	75	1.0
CLL4622*	3.9	250	1650	5.0	2.0	70	1.0
CLL4623*	4.3	250	1600	4.0	2.0	65	1.0
CLL4624*	4.7	250	1550	10	3.0	60	1.0
CLL4625*	5.1	250	1500	10	3.0	55	2.0
CLL4626*	5.6	250	1400	10	4.0	50	4.0
CLL4627*	6.2	250	1200	10	5.0	45	5.0

* Available on special order; consult factory.

All dimensions in inches (mm).

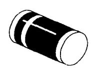


DATA SHEET

R2

CLL4678
THRU
CLL4717

500mW LOW LEVEL ZENER DIODE
5% TOLERANCE



SOD-80 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR L4678 Series Silicon Zener Diode is a high quality voltage regulator designed for applications requiring an extremely low operating current and low leakage.
Marking Code: Cathode Band

ELECTRICAL CHARACTERISTICS
(T_A=25°C) V_F=1.5V MAX @ I_F=100mA FOR ALL TYPES

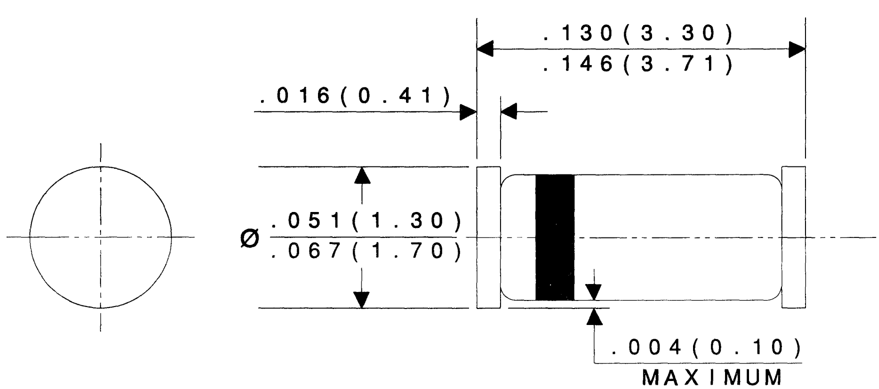
ABSOLUTE MAXIMUM RATINGS	SYMBOL		UNITS
Power Dissipation (@ T_A = 50°C)	P_D	500	mW
Operating and Storage Temperature	T_J, T_{STG}	-65 to +200	°C

Type No.	Nominal Zener Voltage V_Z @ I_{ZT}	Test Current I_{ZT}	Maximum Reverse Leakage Current I_R @ V_R		Maximum Voltage Change* ΔV_Z	Maximum Zener Current I_{ZM}
	Volts	µA	µA	Volts	Volts	mA
CLL4678	1.8	50	7.5	1.0	0.70	120.0
CLL4679	2.0	50	5.0	1.0	0.70	110.0
CLL4680	2.2	50	4.0	1.0	0.75	100.0
CLL4681	2.4	50	2.0	1.0	0.80	95.0
CLL4682	2.7	50	1.0	1.0	0.85	90.0
CLL4683	3.0	50	0.8	1.0	0.90	85.0
CLL4684	3.3	50	7.5	1.5	0.95	80.0
CLL4685	3.6	50	7.5	2.0	0.95	75.0
CLL4686	3.9	50	5.0	2.0	0.97	70.0
CLL4687	4.3	50	4.0	2.0	0.99	65.0
CLL4688	4.7	50	10	3.0	0.99	60.0
CLL4689	5.1	50	10	3.0	0.97	55.0
CLL4690	5.6	50	10	4.0	0.96	50.0
CLL4691	6.2	50	10	5.0	0.95	45.0
CLL4692	6.8	50	10	5.1	0.90	35.0
CLL4693	7.5	50	10	5.7	0.75	31.8
CLL4694	8.2	50	1.0	6.2	0.50	29.0
CLL4695	8.7	50	1.0	6.6	0.10	27.4
CLL4696	9.1	50	1.0	6.9	0.08	26.2
CLL4697	10	50	1.0	7.6	0.10	24.8
CLL4698	11	50	0.05	8.4	0.11	21.6
CLL4699	12	50	0.05	9.1	0.12	20.4
CLL4700	13	50	0.05	9.8	0.13	19.0
CLL4701	14	50	0.05	10.6	0.14	17.5
CLL4702	15	50	0.05	11.4	0.15	16.3

* ΔV_Z=V_Z@100µA MINUS V_Z @ 10µA.

Type No.	Nominal Zener Voltage V_Z @ I_{ZT}	Test Current I_{ZT}	Maximum Reverse Leakage Current I_R @ V_R		Maximum Voltage Change* ΔV_Z	Maximum Zener Current I_{ZM}
	Volts	µA	µA	Volts	Volts	mA
CLL4703	16	50	0.05	12.1	0.16	15.4
CLL4704	17	50	0.05	12.9	0.17	14.5
CLL4705	18	50	0.05	13.6	0.18	13.2
CLL4706	19	50	0.05	14.4	0.19	12.5
CLL4707	20	50	0.01	15.2	0.20	11.9
CLL4708	22	50	0.01	16.7	0.22	10.8
CLL4709	24	50	0.01	18.2	0.24	9.9
CLL4710	25	50	0.01	19.0	0.25	9.5
CLL4711	27	50	0.01	20.4	0.27	8.8
CLL4712	28	50	0.01	21.2	0.28	8.5
CLL4713	30	50	0.01	22.8	0.30	7.9
CLL4714	33	50	0.01	25.0	0.33	7.2
CLL4715	36	50	0.01	27.3	0.36	6.6
CLL4716	39	50	0.01	29.6	0.39	6.1
CLL4717	43	50	0.01	32.6	0.43	5.5

All dimensions in inches (mm).

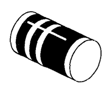


DATA SHEET

R2

CLL4729A
THRU
CLL4764A

1.0W ZENER DIODE
5% TOLERANCE



MELF CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CLL4729A Series Silicon Zener Diode is a high quality voltage regulator for use in surface mount industrial, commercial, entertainment and computer applications.
Marking Code: Cathode Band

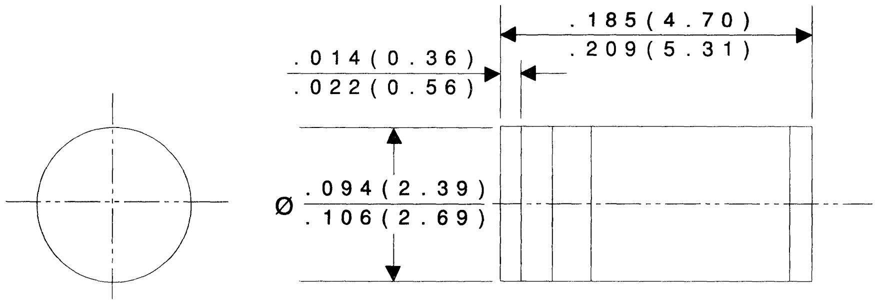
ABSOLUTE MAXIMUM RATINGS	**SYMBOL**		**UNITS**
Power Dissipation	P_D	1.0	W
Operating and Storage Temperature	T_J, T_{stg}	-65 to +200	^oC

ELECTRICAL CHARACTERISTICS (T_A=25^{o}C), V_F=1.2MAX @ I_F = 200mA FOR ALL TYPES.

TYPE NO.	ZENER VOLTAGE V_Z @ I_{Z1}	TEST CURRENT I_{Z1}	MAXIMUM ZENER IMPEDANCE Z_{Z1} @ I_{Z1}	Z_{Z2} @ I_{Z2}		MAXIMUM REVERSE CURRENT I_R @ V_R		MAXIMUM DC CURRENT I_{ZM}
	VOLTS	mA	Ω	Ω	mA	µA	VOLTS	mA
CLL4729A	3.6	69	10	400	1.0	100	1.0	1260
CLL4730A	3.9	64	9.0	400	1.0	50	1.0	1190
CLL4731A	4.3	58	9.0	400	1.0	10	1.0	1070
CLL4732A	4.7	53	8.0	500	1.0	10	1.0	970
CLL4733A	5.1	49	7.0	550	1.0	10	1.0	890
CLL4734A	5.6	45	5.0	600	1.0	10	2.0	810
CLL4735A	6.2	41	2.0	700	1.0	10	3.0	730
CLL4736A	6.8	37	3.5	700	1.0	10	4.0	660
CLL4737A	7.5	34	4.0	700	0.5	10	5.0	605
CLL4738A	8.2	31	4.5	700	0.5	10	6.0	550
CLL4739A	9.1	28	5.0	700	0.5	10	7.0	500
CLL4740A	10	25	7.0	700	0.25	10	7.6	454
CLL4741A	11	23	8.0	700	0.25	5.0	8.4	414
CLL4742A	12	21	9.0	700	0.25	5.0	9.1	380
CLL4743A	13	19	10	700	0.25	5.0	9.9	344
CLL4744A	15	17	14	700	0.25	5.0	11.4	304
CLL4745A	16	15.5	16	700	0.25	5.0	12.2	285
CLL4746A	18	14	20	750	0.25	5.0	13.7	250
CLL4747A	20	12.5	22	750	0.25	5.0	15.2	225
CLL4748A	22	11.5	23	750	0.25	5.0	16.7	205
CLL4749A	24	10.5	25	750	0.25	5.0	18.2	190
CLL4750A	27	9.5	35	750	0.25	5.0	20.6	170
CLL4751A	30	8.5	40	1000	0.25	5.0	22.8	150
CLL4752A	33	7.5	45	1000	0.25	5.0	25.1	135
CLL4753A*	36	7.0	50	1000	0.25	5.0	27.4	125
CLL4754A*	39	6.5	60	1000	0.25	5.0	29.7	115
CLL4755A*	43	6.0	70	1500	0.25	5.0	32.7	110
CLL4756A*	47	5.5	80	1500	0.25	5.0	35.8	95
CLL4757A*	51	5.0	95	1500	0.25	5.0	38.8	90
CLL4758A*	56	4.5	110	2000	0.25	5.0	42.6	80
CLL4759A*	62	4.0	125	2000	0.25	5.0	47.1	70
CLL4760A*	68	3.7	150	2000	0.25	5.0	51.7	65
CLL4761A*	75	3.3	175	2000	0.25	5.0	56	60
CLL4762A*	82	3.0	200	3000	0.25	5.0	62.2	55
CLL4763A*	91	2.8	250	3000	0.25	5.0	69.2	50
CLL4764A*	100	2.5	350	3000	0.25	5.0	76	45

* Available on special order only, please consult factory.

All dimensions in inches (mm).

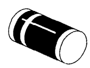


DATA SHEET

R2

CLL5226B
THRU
CLL5257B

500 mW ZENER DIODE
5% TOLERANCE



SOD-80 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

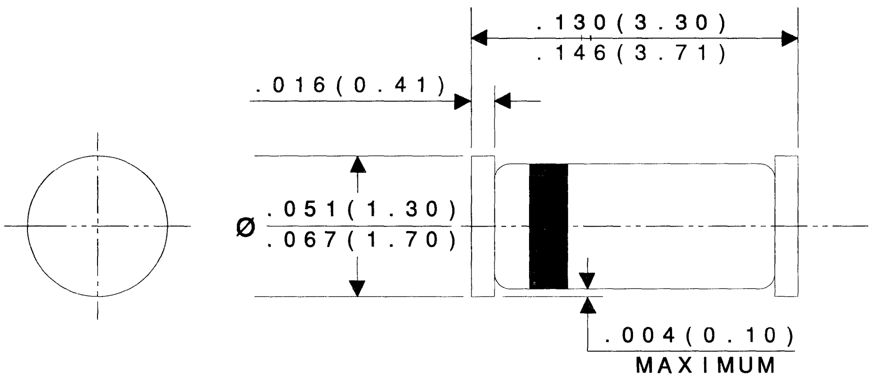
The CENTRAL SEMICONDUCTOR CLL5226B Series Silicon Zener Diode is a high quality voltage regulator for use in industrial, commercial, entertainment and computer applications. Higher voltage devices are available on special order.
Marking Code: Cathode Band

ABSOLUTE MAXIMUM RATINGS	**SYMBOL**		**UNITS**
Power Dissipation (@ T_A = 50°C)	P_D	500	mW
Operating and Storage Temperature	T_J,T_{stg}	-65 to +200	°C

ELECTRICAL CHARACTERISTICS (T_A=25°C), V_F=1.1V MAX @ I_F=200mA FOR ALL TYPES.

TYPE NO.	ZENER VOLTAGE V_Z @ I_{ZT}	TEST CURRENT I_{ZT}	Maximum Zener Impedance Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}		Maximum Reverse Current I_R @ V_R		MAXIMUM ZENER VOLTAGE TEMPERATURE COEFFICIENT θV_Z
	VOLTS	mA	Ω	Ω	mA	μA	VOLTS	%/°C
CLL5226B	3.3	20	28	1600	0.25	25	1.0	-0.070
CLL5227B	3.6	20	24	1700	0.25	15	1.0	-0.065
CLL5228B	3.9	20	23	1900	0.25	10	1.0	-0.060
CLL5229B	4.3	20	22	2000	0.25	5.0	1.0	±0.055
CLL5230B	4.7	20	19	1900	0.25	5.0	2.0	±0.030
CLL5231B	5.1	20	17	1600	0.25	5.0	2.0	±0.030
CLL5232B	5.6	20	11	1600	0.25	5.0	3.0	+0.038
CLL5233B	6.0	20	7.0	1600	0.25	5.0	3.5	+0.038
CLL5234B	6.2	20	7.0	1000	0.25	5.0	4.0	+0.045
CLL5235B	6.8	20	5.0	750	0.25	3.0	5.0	+0.050
CLL5236B	7.5	20	6.0	500	0.25	3.0	6.0	+0.058
CLL5237B	8.2	20	8.0	500	0.25	3.0	6.5	+0.062
CLL5238B	8.7	20	8.0	600	0.25	3.0	6.5	+0.065
CLL5239B	9.1	20	10	600	0.25	3.0	7.0	+0.068
CLL5240B	10	20	17	600	0.25	3.0	8.0	+0.075
CLL5241B	11	20	22	600	0.25	2.0	8.4	+0.076
CLL5242B	12	20	30	600	0.25	1.0	9.1	+0.077
CLL5243B	13	9.5	13	600	0.25	0.5	9.9	+0.079
CLL5244B	14	9.0	15	600	0.25	0.1	10	+0.082
CLL5245B	15	8.5	16	600	0.25	0.1	11	+0.082
CLL5246B	16	7.8	17	600	0.25	0.1	12	+0.083
CLL5247B	17	7.4	19	600	0.25	0.1	13	+0.084
CLL5248B	18	7.0	21	600	0.25	0.1	14	+0.085
CLL5249B	19	6.6	23	600	0.25	0.1	14	+0.086
CLL5250B	20	6.2	25	600	0.25	0.1	15	+0.086
CLL5251B	22	5.6	29	600	0.25	0.1	17	+0.087
CLL5252B	24	5.2	33	600	0.25	0.1	18	+0.088
CLL5253B	25	5.0	35	600	0.25	0.1	19	+0.089
CLL5254B	27	4.6	41	600	0.25	0.1	21	+0.090
CLL5255B	28	4.5	44	600	0.25	0.1	21	+0.091
CLL5256B	30	4.2	49	600	0.25	0.1	23	+0.091
CLL5257B	33	3.8	58	700	0.25	0.1	25	+0.092

All dimensions in inches (mm).



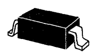
DATA SHEET

R2

CMDSH-3

SUPER-MINI SCHOTTKY DIODE

SUPER™ mini



SOD-323 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMDSH-3 type is a Silicon Schottky Diode, manufactured in a super-mini surface mount package, designed for fast switching applications requiring a low forward voltage drop.
Marking Code is S1.

MAXIMUM RATINGS: (T_A=25°C)

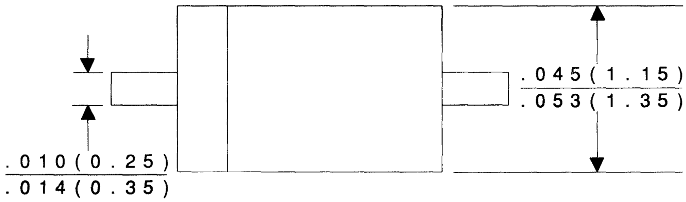
	SYMBOL		UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	30	V
Average Forward Current	I_O	100	mA
Forward Surge Current, tp=10 ms	I_{FSM}	750	mA
Power Dissipation	P_D	250	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	500	°C/W

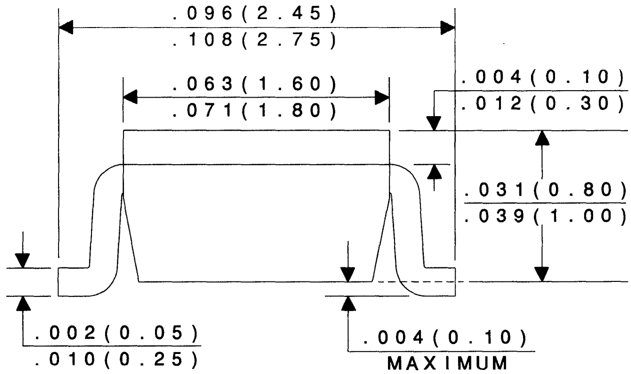
ELECTRICAL CHARACTERISTICS: (T_A=25°C)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
B_{VR}	I_F=100μA	30			V
V_F	I_F=2.0mA		0.30		V
V_F	I_F=15mA		0.36		V
V_F	I_F=50mA		0.47	0.55	V
V_F	I_F=100mA		0.58	0.80	V
I_R	V_R=25V			1.0	μA
C_T	V_R=10V, f=1.0 MHz		7.0		pF

All dimensions in inches (mm).

TOP VIEW





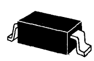
DATA SHEET

R2

CMDSH2-3

SUPER-MINI
SCHOTTKY DIODE
HIGH CURRENT - 200mA

SUPER mini



SOD-323 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMDSH2-3 type is a Silicon Schottky Diode, manufactured in a super-mini surface mount package, designed for fast switching applications requiring a low forward voltage drop.

Marking Code is S2.

MAXIMUM RATINGS: (T_A=25°C)

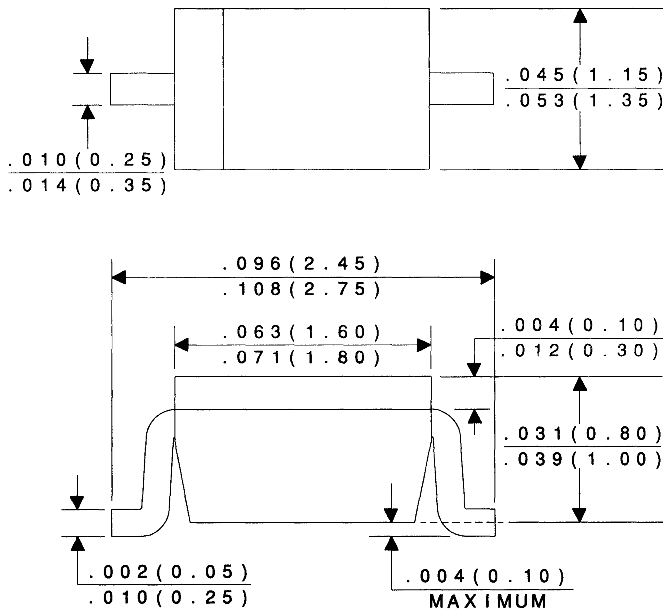
	SYMBOL		**UNITS**
Peak Repetitive Reverse Voltage	V_{RRM}	30	V
Average Forward Current	I_O	200	mA
Forward Surge Current, tp=10 ms	I_{FSM}	1.0	A
Power Dissipation	P_D	250	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	500	°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C)

SYMBOL	**TEST CONDITIONS**	**MIN**	**TYP**	**MAX**	**UNIT**
B_{VR}	I_F=100μA	30			V
V_F	I_F=2.0mA		0.26		V
V_F	I_F=15mA		0.32		V
V_F	I_F=100mA		0.42		V
V_F	I_F=200mA		0.49	0.55	V
I_R	V_R=30V		0.40	50	μA
C_T	V_R=10V, f=1.0 MHz		15		pF

All dimensions in inches (mm).

TOP VIEW

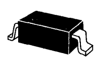


NEW

CMDZ5L1 THRU CMDZ36L

LOW LEVEL ZENER DIODE
250mW, 5.1 VOLTS THRU 36 VOLTS

SUPER™
mini



SOD-323 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMDZ5L1 Series Silicon Low Level Zener Diode is a high quality voltage regulator specifically designed for operation at 500μA. Manufactured in a supermini surface mount package, designed for applications requiring a low operating current, low leakage, a sharp knee and tight real estate situations.

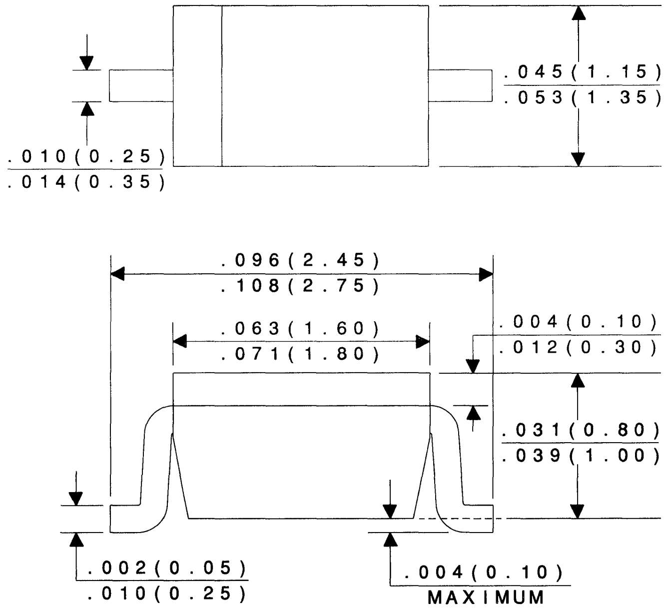
ABSOLUTE MAXIMUM RATINGS:	**SYMBOL**		**UNIT**
Power Dissipation (@T_A=25°C)	P_D	250	mW
Operating and Storage Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	500	°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C)

TYPE	ZENER VOLTAGE V_Z@ I_{ZT}			TEST CURRENT	MAXIMUM ZENER IMPEDANCE	MAXIMUM REVERSE CURRENT		MARKING
	MIN (V)	NOM (V)	MAX (V)	I_{ZT} (μA)	Z_{ZT} @ I_{ZT} (Ω)	I_R @ V_R (μA)	(V)	
CMDZ5L1	4.84	5.1	5.37	500	350	1.0	1.5	L P
CMDZ5L6	5.31	5.6	5.92	500	90	1.0	2.0	N P
CMDZ6L2	5.86	6.2	6.53	500	90	1.0	2.0	O P
CMDZ6L8	6.47	6.8	7.14	500	60	1.0	3.5	P P
CMDZ7L5	7.06	7.5	7.84	500	60	1.0	3.5	Q P
CMDZ8L2	7.76	8.2	8.64	500	60	1.0	6.0	R P
CMDZ9L1	8.56	9.1	9.55	500	60	1.0	6.0	S P
CMDZ10L	9.45	10	10.55	500	80	1.0	8.0	T P
CMDZ11L	10.44	11	11.56	500	80	1.0	8.0	U P
CMDZ12L	11.42	12	12.60	500	80	1.0	10.5	V P
CMDZ13L	12.47	13	13.96	500	80	1.0	10.5	X P
CMDZ15L	13.84	15	15.52	500	80	1.0	11.5	Y P
CMDZ16L	15.37	16	17.09	500	80	1.0	14	Z P
CMDZ18L	16.94	18	19.03	500	80	1.0	16	1 P
CMDZ20L	18.86	20	21.08	500	100	1.0	18	2 P
CMDZ22L	20.88	22	23.17	500	100	1.0	20	3 P
CMDZ24L	22.93	24	25.57	500	120	1.0	22	4 P
CMDZ27L	25.10	27	28.90	500	150	1.0	24	5 P
CMDZ30L	28.00	30	32.00	500	200	1.0	27	6 P
CMDZ33L	31.00	33	35.00	500	250	1.0	30	7 P
CMDZ36L	34.00	36	38.00	500	300	1.0	33	8 P

All dimensions in inches (mm).

TOP VIEW

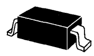


DATA SHEET

CMDZ5221B
THRU
CMDZ5261B

SUPER-MINI ZENER DIODE
2.4 VOLTS THRU 47 VOLTS
250mW, 5% TOLERANCE

SUPER™ mini



SOD-323 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMDZ5221B Series Silicon Zener Diode is a high quality voltage regulator, manufactured in a super-mini surface mount package, designed for use in industrial, commercial, entertainment and computer applications.

ABSOLUTE MAXIMUM RATINGS:	SYMBOL		UNIT
Power Dissipation (@T_A=25°C)	P_D	250	mW
Operating and Storage Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	500	°C/W

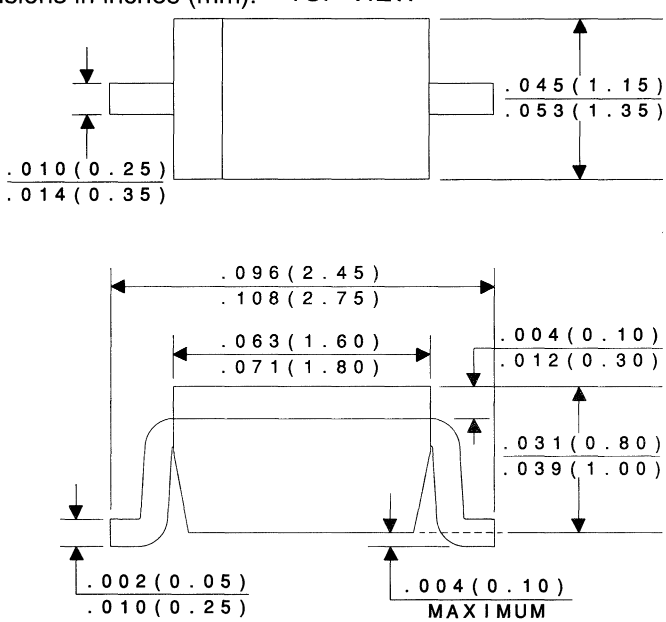
ELECTRICAL CHARACTERISTICS: (T_A=25°C), V_F=0.9V MAX @ I_F=10mA FOR ALL TYPES.

TYPE	ZENER VOLTAGE V_Z @ I_{ZT}			TEST CURRENT	MAXIMUM ZENER IMPEDENCE			MAXIMUM REVERSE CURRENT		MAXIMUM ZENER VOLTAGE TEMPERATURE COEFFICIENT
	MIN	NOM	MAX	I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}		I_R @ V_R		
	VOLTS	VOLTS	VOLTS	mA	Ω	Ω	mA	µA	VOLTS	%/°C
CMDZ5221B	2.280	2.4	2.520	20	30	1200	0.25	100	1.0	-0.085
CMDZ5222B	2.375	2.5	2.625	20	30	1250	0.25	100	1.0	-0.085
CMDZ5223B	2.565	2.7	2.835	20	30	1300	0.25	75	1.0	-0.080
CMDZ5224B	2.660	2.8	2.940	20	30	1400	0.25	75	1.0	-0.080
CMDZ5225B	2.850	3.0	3.150	20	29	1600	0.25	50	1.0	-0.075
CMDZ5226B	3.135	3.3	3.465	20	28	1600	0.25	25	1.0	-0.070
CMDZ5227B	3.420	3.6	3.780	20	24	1700	0.25	15	1.0	-0.065
CMDZ5228B	3.705	3.9	4.095	20	23	1900	0.25	10	1.0	-0.060
CMDZ5229B	4.085	4.3	4.515	20	22	2000	0.25	5.0	1.0	±0.055
CMDZ5230B	4.465	4.7	4.935	20	19	1900	0.25	5.0	2.0	±0.030
CMDZ5231B	4.845	5.1	5.355	20	17	1600	0.25	5.0	2.0	±0.030
CMDZ5232B	5.320	5.6	5.880	20	11	1600	0.25	5.0	3.0	+0.038
CMDZ5233B	5.700	6.0	6.300	20	7.0	1600	0.25	5.0	3.5	+0.038
CMDZ5234B	5.890	6.2	6.510	20	7.0	1000	0.25	5.0	4.0	+0.045
CMDZ5235B	6.460	6.8	7.140	20	5.0	750	0.25	3.0	5.0	+0.050
CMDZ5236B	7.125	7.5	7.875	20	6.0	500	0.25	3.0	6.0	+0.058
CMDZ5237B	7.790	8.2	8.610	20	8.0	500	0.25	3.0	6.5	+0.062
CMDZ5238B	8.265	8.7	9.135	20	8.0	600	0.25	3.0	6.5	+0.065
CMDZ5239B	8.645	9.1	9.555	20	10	600	0.25	3.0	7.0	+0.068
CMDZ5240B	9.500	10	10.50	20	17	600	0.25	3.0	8.0	+0.075
CMDZ5241B	10.45	11	11.55	20	22	600	0.25	2.0	8.4	+0.076
CMDZ5242B	11.40	12	12.60	20	30	600	0.25	1.0	9.1	+0.077

ELECTRICAL CHARACTERISTICS: (T_A=25^{o}C), V_F=0.9V MAX @ I_F=10mA FOR ALL TYPES.

TYPE	ZENER VOLTAGE V_Z @ I_{ZT}			TEST CURRENT	MAXIMUM ZENER IMPEDENCE			MAXIMUM REVERSE CURRENT		MAXIMUM ZENER VOLTAGE TEMPERATURE COEFFICIENT
	MIN	NOM	MAX	I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}		I_R @ V_R		
	VOLTS	VOLTS	VOLTS	mA	Ω	Ω	mA	µA	VOLTS	%/°C
CMDZ5243B	12.35	13	13.65	9.5	13	600	0.25	0.5	9.9	+0.079
CMDZ5244B	13.30	14	14.70	9.0	15	600	0.25	0.1	10	+0.082
CMDZ5245B	14.25	15	15.75	8.5	16	600	0.25	0.1	11	+0.082
CMDZ5246B	15.20	16	16.80	7.8	17	600	0.25	0.1	12	+0.083
CMDZ5247B	16.15	17	17.85	7.4	19	600	0.25	0.1	13	+0.084
CMDZ5248B	17.10	18	18.90	7.0	21	600	0.25	0.1	14	+0.085
CMDZ5249B	18.05	19	19.95	6.6	23	600	0.25	0.1	14	+0.086
CMDZ5250B	19.00	20	21.00	6.2	25	600	0.25	0.1	15	+0.086
CMDZ5251B	20.90	22	23.10	5.6	29	600	0.25	0.1	17	+0.087
CMDZ5252B	22.80	24	25.20	5.2	33	600	0.25	0.1	18	+0.088
CMDZ5253B	23.75	25	26.25	5.0	35	600	0.25	0.1	19	+0.089
CMDZ5254B	25.65	27	28.35	4.6	41	600	0.25	0.1	21	+0.090
CMDZ5255B	26.60	28	29.40	4.5	44	600	0.25	0.1	21	+0.091
CMDZ5256B	28.50	30	31.50	4.2	49	600	0.25	0.1	23	+0.091
CMDZ5257B	31.35	33	34.65	3.8	58	700	0.25	0.1	25	+0.092
CMDZ5258B	34.20	36	37.80	3.4	70	700	0.25	0.1	27	+0.093
CMDZ5259B	37.05	39	40.95	3.2	80	800	0.25	0.1	30	+0.094
CMDZ5260B	40.85	43	45.15	3.0	93	900	0.25	0.1	33	+0.095
CMDZ5261B	44.65	47	49.35	2.7	105	1000	0.25	0.1	36	+0.095

All dimensions in inches (mm). TOP VIEW

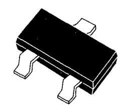


DATA SHEET

R1

CMPD914

HIGH SPEED SWITCHING DIODE



SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION

The CENTRAL SEMICONDUCTOR CMPD914 type is a ultra-high speed silicon switching diode manufactured by the epitaxial planar process, in an epoxy molded surface mount package, designed for high speed switching applications.
Marking code is C5D.

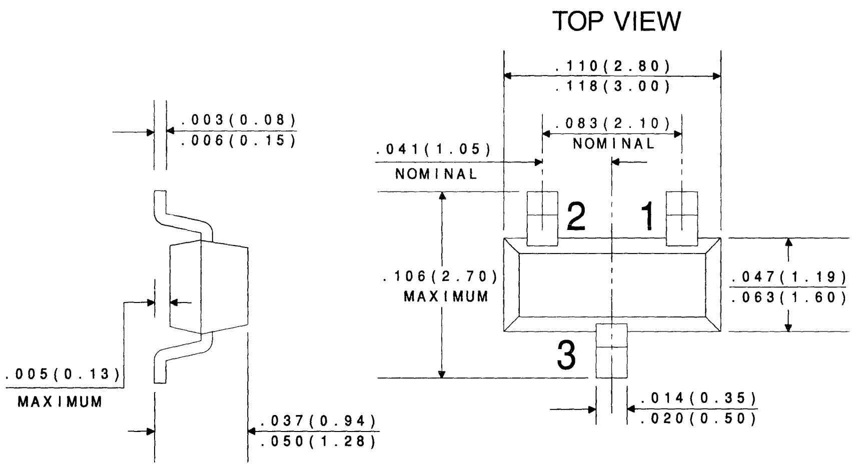
MAXIMUM RATINGS (T_A=25°C)

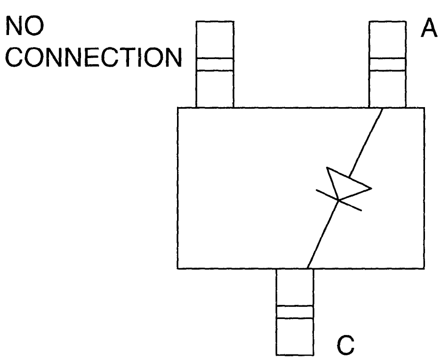
	SYMBOL		UNITS
Continuous Reverse Voltage	V_R	75	V
Peak Repetitive Reverse Voltage	V_{RRM}	100	V
Continuous Forward Current	I_F	250	mA
Peak Repetitive Forward Current	I_{FRM}	250	mA
Forward Surge Current, tp=1 μsec.	I_{FSM}	4000	mA
Forward Surge Current, tp=1 msec.	I_{FSM}	2000	mA
Forward Surge Current, tp=1 sec.	I_{FSM}	1000	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
V_{BR}	I_R=100μA	100		V
I_R	V_R=20V		25	nA
I_R	V_R=75V		5.0	μA
V_F	I_F=10mA		1.0	V
C_T	V_R=0, f=1 MHz		4.0	pF
t_{rr}	I_R=I_F=10mA, R_L=100Ω, Rec. to 1.0mA		4.0	ns

All dimensions in inches (mm).



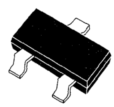


DATA SHEET

R2

CMPD1001
CMPD1001A
CMPD1001S

HIGH CURRENT SWITCHING DIODE



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPD1001 series types are silicon switching diodes manufactured by the epitaxial planar process, designed for applications requiring high current capability.

The following configurations are available:

CMPD1001	SINGLE	**MARKING CODE: L20**
CMPD1001S	DUAL, IN SERIES	**MARKING CODE: L21**
CMPD1001A	DUAL, COMMON ANODE	**MARKING CODE: L22**

MAXIMUM RATINGS (T_A=25^{o}C)

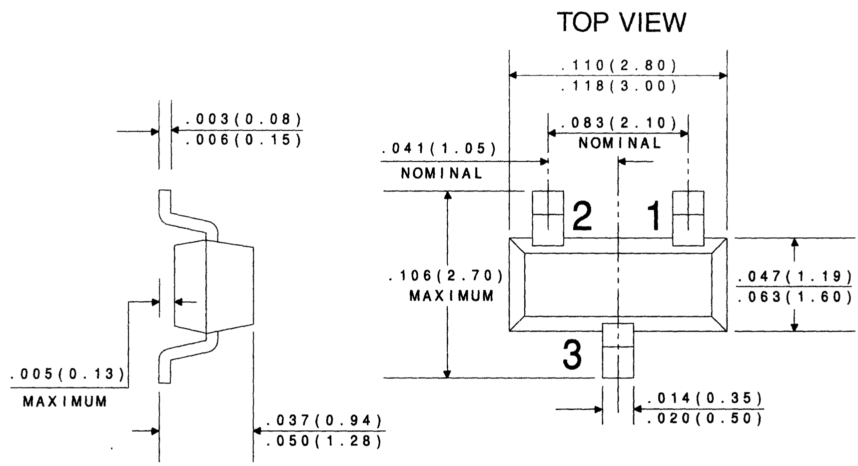
	SYMBOL		UNITS
Continuous Reverse Voltage	V_R	90	V
Continuous Forward Current	I_F	250	mA
Peak Repetitive Forward Current	I_{FRM}	600	mA
Peak Repetitive Reverse Current	I_{RRM}	600	mA
Forward Surge Current, tp=1 µs	I_{FSM}	6000	mA
Forward Surge Current, tp=1 s	I_{FSM}	1000	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	^{o}C
Thermal Resistance	Θ_{JA}	357	^{o}C/W

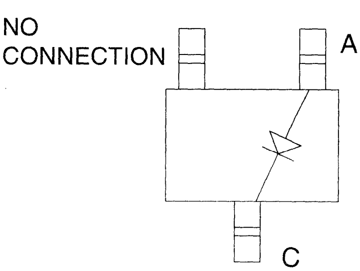
ELECTRICAL CHARACTERISTICS (T_A=25^{o}C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
B_{VR}	I_R=100 µA	90		V
I_R	V_R=90V		100	nA
I_R	V_R=90V, T_A=150^{o}C		100	µA
V_F	I_F=10mA		0.75	V

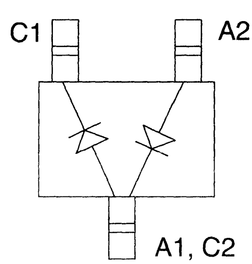
SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
V_F	I_F=50mA		0.84	V
V_F	I_F=100mA		0.90	V
V_F	I_F=200mA		1.00	V
V_F	I_F=400mA		1.25	V
C_T	V_R=0, f=1 MHz		35	pF
t_{rr}	I_F=I_R=30mA, RECOV. TO 3.0mA, R_L=100Ω		50	ns

All dimensions in inches (mm).

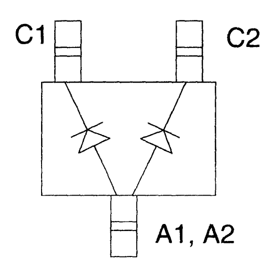




CMPD1001



CMPD1001S



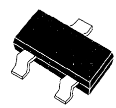
CMPD1001A

DATA SHEET

R2

CMPD2003
CMPD2004
CMPD2004S

HIGH VOLTAGE SWITCHING DIODE



SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPD2003, CMPD2004, CMPD2004S types are silicon switching diodes manufactured by the epitaxial planar process, designed for applications requiring high voltage capability.

The following configurations are available:

CMPD2003	SINGLE	**MARKING CODE: A82**
CMPD2004	SINGLE	**MARKING CODE: D53**
CMPD2004S	DUAL, IN SERIES	**MARKING CODE: DB6**

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL	CMPD2003	CMPD2004 CMPD2004S	UNITS
Continuous Reverse Voltage	V_R	200	240	V
Peak Repetitive Reverse Voltage	V_{RRM}	250	300	V
Peak Repetitive Reverse Current	I_O	200	200	mA
Continuous Forward Current	I_F	250	225	mA
Peak Repetitive Forward Current	I_{FRM}	625	625	mA
Forward Surge Current, tp=1 μs	I_{FSM}	4000	4000	mA
Forward Surge Current, tp=1 s	I_{FSM}	1000	1000	mA
Power Dissipation	P_D	350		mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150		°C
Thermal Resistance	Θ_{JA}	357		°C/W

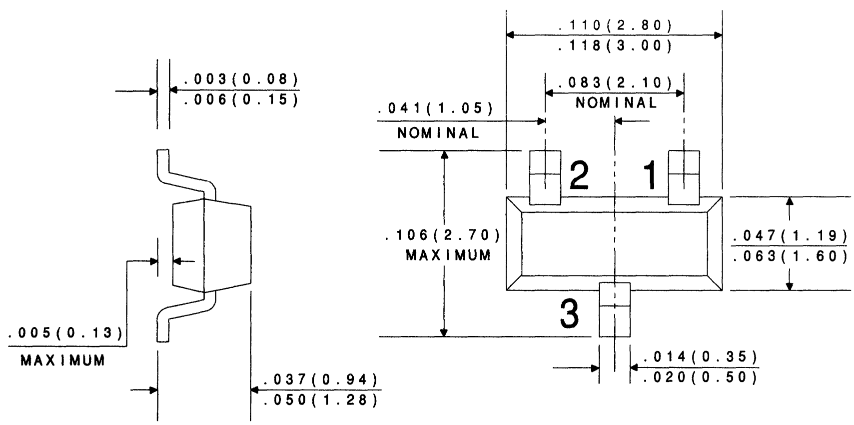
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

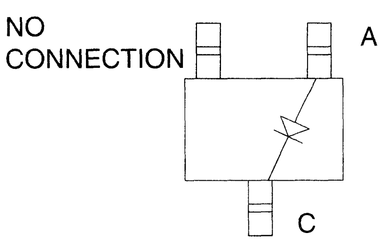
		CMPD2003		CMPD2004 CMPD2004S		
SYMBOL	**TEST CONDITIONS**	**MIN**	**MAX**	**MIN**	**MAX**	**UNIT**
B_{VR}	I_R=100 μA	250		300		V
I_R	V_R=200V		100		-	nA
I_R	V_R=200V, T_A=150°C		100		-	μA
I_R	V_R=240V		-		100	nA
I_R	V_R=240V, T_A=150°C		-		100	μA
V_F	I_F=100mA		1.0		1.0	V

SYMBOL	TEST CONDITIONS	CMPD2003 MIN	CMPD2003 MAX	CMPD2004 CMPD2004S MIN	CMPD2004 CMPD2004S MAX	UNIT
V_F	I_F=200mA		1.25		-	V
C_T	V_R=0, f=1 MHz		5.0		5.0	pF
t_{rr}	I_F=I_R=30mA, RECOV. TO 3.0mA, R_L=100Ω		50		50	ns

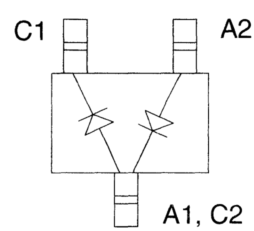
All dimensions in inches (mm).

TOP VIEW





CMPD2003
CMPD2004



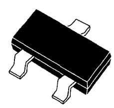
CMPD2004S

DATA SHEET

R2

CMPD2836
CMPD2838

DUAL SILICON SWITCHING DIODE



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPD2836, CMPD2838 types are ultra-high speed silicon switching diodes manufactured by the epitaxial planar process, in an epoxy molded surface mount package, designed for high speed switching applications.

The following configurations are available:

CMPD2836	DUAL, COMMON ANODE	**MARKING CODE: CA2**
CMPD2838	DUAL, COMMON CATHODE	**MARKING CODE: CA6**

MAXIMUM RATINGS (T_A=25°C)

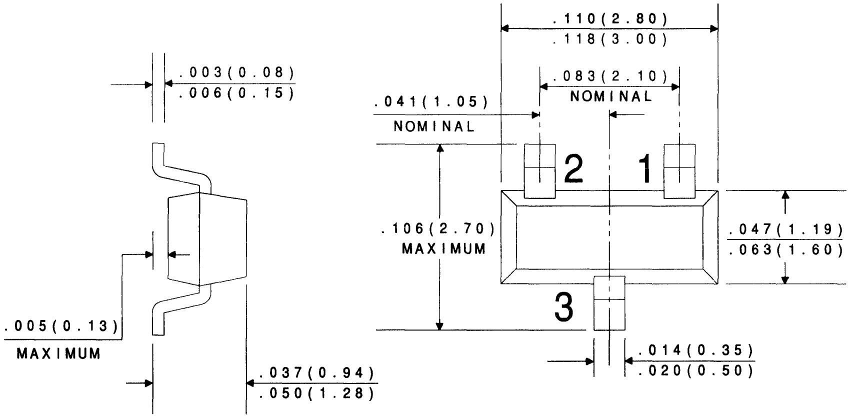
	SYMBOL		UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	75	V
Average Forward Current	I_O	200	mA
Peak Forward Current	I_{FM}	300	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

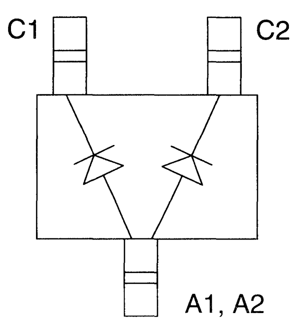
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
BV_R	I_R=100μA	75			V
I_R	V_R=50V			100	nA
V_F	I_F=10mA			1.0	V
V_F	I_F=50mA			1.0	V
V_F	I_F=100mA			1.2	V
C_T	V_R=0, f=1 MHz		1.5	4.0	pF
t_{rr}	I_R=I_F=10mA, R_L=100Ω, Rec. to 1.0mA			4.0	ns

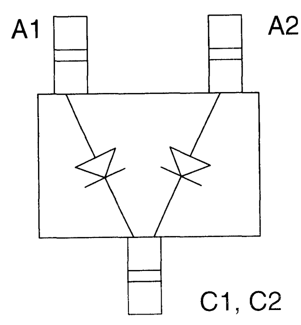
All dimension in inches (mm).

TOP VIEW





CMPD2836

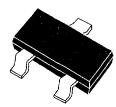


CMPD2838

R2

CMPD4150

HIGH CURRENT
HIGH SPEED
SWITCHING DIODE



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPD4150 type is an ultra-high speed silicon switching diode manufactured by the epitaxial planar process, in an epoxy molded surface mount package, designed for high speed switching applications.
Marking code is ABA.

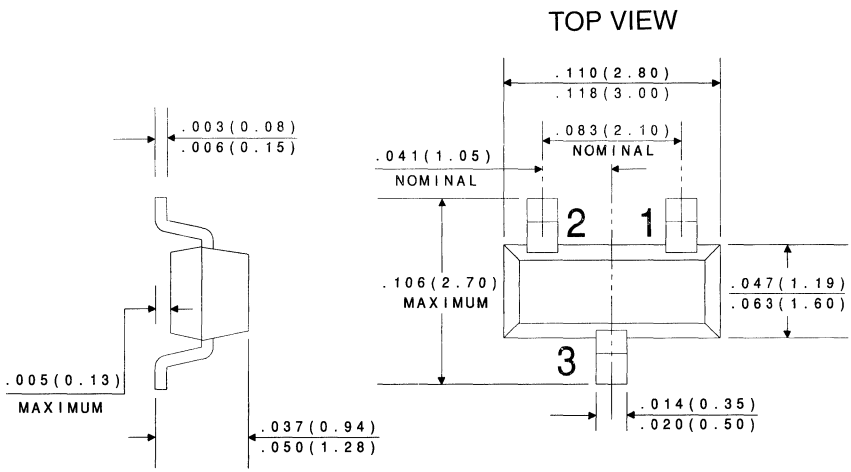
MAXIMUM RATINGS (T_A=25°C)

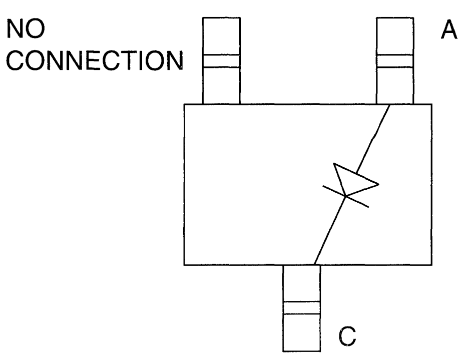
	SYMBOL		UNITS
Continuous Reverse Voltage	V_R	50	V
Peak Repetitive Reverse Voltage	V_{RRM}	50	V
Continuous Forward Current	I_F	250	mA
Peak Repetitive Forward Current	I_{FRM}	250	mA
Forward Surge Current, tp=1 μsec.	I_{FSM}	4000	mA
Forward Surge Current, tp=1 sec.	I_{FSM}	1000	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_R	V_R=50V		100	nA
V_F	I_F=1.0mA	0.54	0.62	V
V_F	I_F=10mA	0.66	0.74	V
V_F	I_F=50mA	0.76	0.86	V
V_F	I_F=100mA	0.82	0.92	V
V_F	I_F=200mA	0.87	1.0	V
C_T	V_R=0, f=1 MHz		4.0	pF
t_{rr}	I_R=I_F=10mA, R_L=100Ω, Rec. to 1.0mA		4.0	ns

All dimensions in inches (mm).





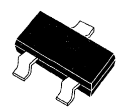
DATA SHEET

R2

Central™
Semiconductor Corp.

CMPD4448

HIGH SPEED SWITCHING DIODE



SOT-23 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPD4448 type is a ultra-high speed silicon switching diode manufactured by the epitaxial planar process, in an epoxy molded surface mount package, designed for high speed switching applications.
Marking code is AAD.

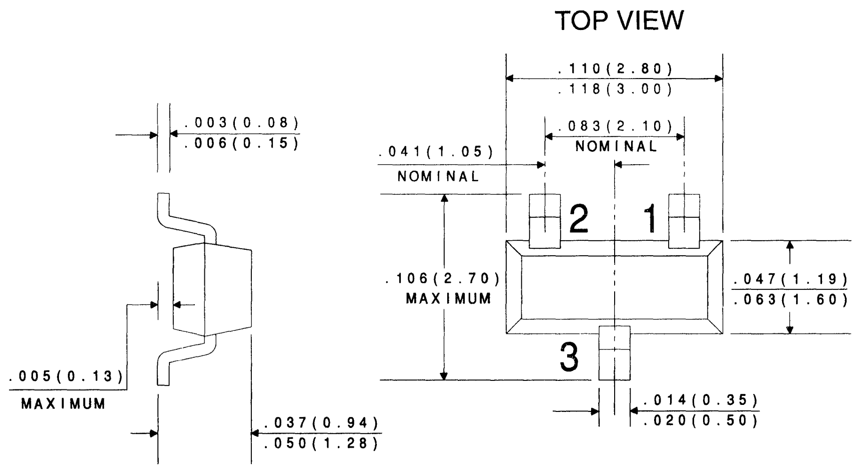
MAXIMUM RATINGS (T_A=25°C)

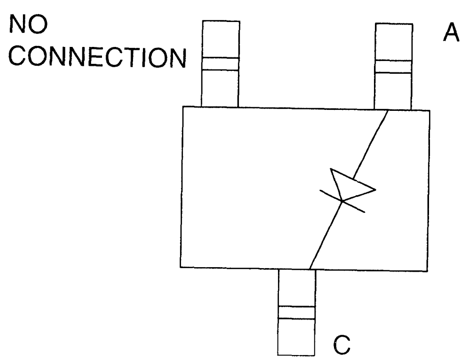
	SYMBOL		UNITS
Continuous Reverse Voltage	V_R	75	V
Peak Repetitive Reverse Voltage	V_{RRM}	100	V
Continuous Forward Current	I_F	250	mA
Peak Repetitive Forward Current	I_{FRM}	250	mA
Forward Surge Current, tp=1 µsec.	I_{FSM}	4000	mA
Forward Surge Current, tp=1 sec.	I_{FSM}	1000	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
V_{BR}	I_R=5.0µA	75		V
V_{BR}	I_R=100µA	100		V
I_R	V_R=20V		25	nA
V_F	I_F=5.0mA	0.62	0.72	V
V_F	I_F=100mA		1.0	V
C_T	V_R=0, f=1 MHz		4.0	pF
t_{rr}	I_R=I_F=10mA, R_L=100Ω, Rec. to 1.0mA		4.0	ns

All dimensions in inches (mm).



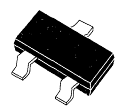


DATA SHEET

R2

CMPD5001
CMPD5001S

HIGH CURRENT INDUCTIVE LOAD SWITCHING DIODE



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPD5001 series types are silicon switching diodes manufactured by the epitaxial planar process, designed for switching inductive load applications requiring extremely high current capability.

The following configurations are available:

CMPD5001	SINGLE	**MARKING CODE: DA2**
CMPD5001S	DUAL, IN SERIES	**MARKING CODE: D49**

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		**UNITS**
Continuous Reverse Voltage	V_R	120	V
Continuous Forward Current	I_F	400	mA
Peak Repetitive Forward Current	I_{FRM}	800	mA
Peak Repetitive Reverse Current	I_{RRM}	600	mA
Forward Surge Current, tp=1 µs	I_{FSM}	6000	mA
Forward Surge Current, tp=1 s	I_{FSM}	1500	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

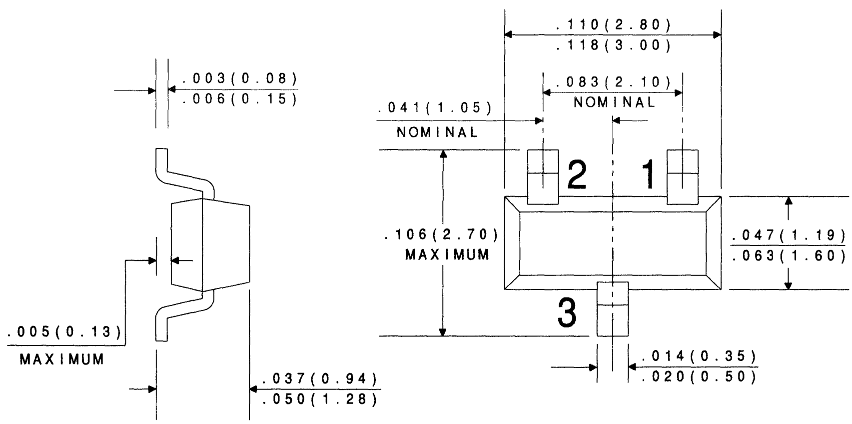
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

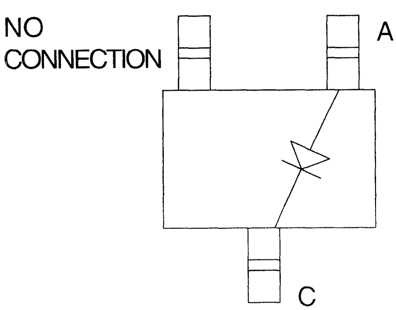
SYMBOL	**TEST CONDITIONS**	**MIN**	**MAX**	**UNITS**
B_{VR}	I_R=1.0mA	120	175	V
I_R	V_R=90V		100	nA
I_R	V_R=90V, T_A=150°C		100	µA
V_F	I_F=10mA		0.75	V
V_F	I_F=50mA		0.84	V
V_F	I_F=100mA		0.90	V
V_F	I_F=200mA		1.00	V

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
V_F	I_F=400mA		1.25	V
C_T	V_R=0, f=1 MHz		35	pF
t_{rr}	I_F=I_R=30mA, RECOV. TO 1.0mA, R_L=100Ω		60	ns
t_{rr}	I_F=I_R=10mA, RECOV. TO 1.0mA, R_L=100Ω		50	ns

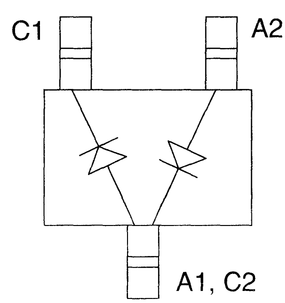
All dimensions in inches (mm).

TOP VIEW





CMPD5001



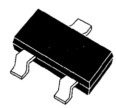
CMPD5001S

DATA
SHEET

R2

CMPD6263
CMPD6263A
CMPD6263C
CMPD6263S

SCHOTTKY DIODES



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPD6263 Series types are Silicon Schottky diodes designed for low current surface mount fast switching applications requiring a low forward voltage drop.

The following configurations are available:

CMPD6263	SINGLE	**MARKING CODE: D76**
CMPD6263A	DUAL, COMMON ANODE	**MARKING CODE: D98**
CMPD6263C	DUAL, COMMON CATHODE	**MARKING CODE: D97**
CMPD6263S	DUAL, IN SERIES	**MARKING CODE: D96**

MAXIMUM RATINGS (T_A=25°C)

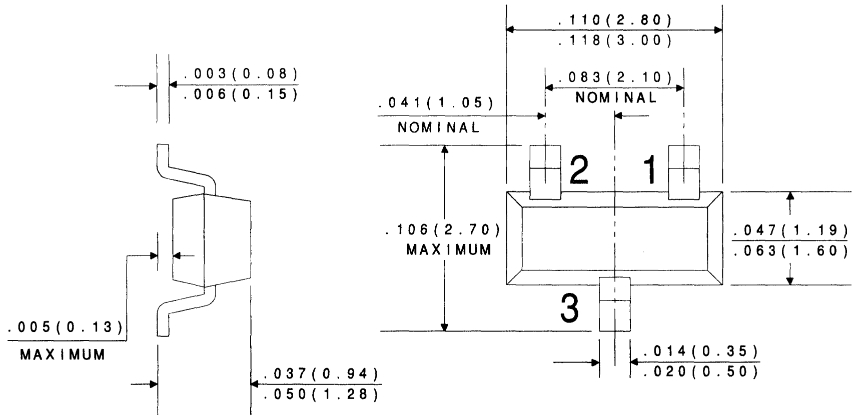
	SYMBOL		UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	70	V
Continuous Forward Current	I_F	15	mA
Forward Surge Current, tp=1.0 s	I_{FSM}	50	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

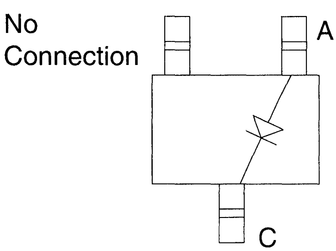
ELECTRICAL CHARACTERISTICS (T_A=25°C)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
B_{VR}	I_R=10μA	70			V
V_F	I_F=1.0mA		395	410	mV
I_R	V_R=50V		98	200	nA
C_T	V_R=0V, f=1.0MHz			2.0	pF

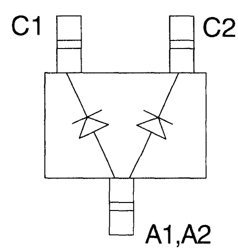
All dimensions in inches (mm).

TOP VIEW

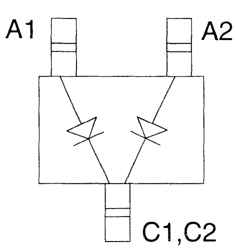




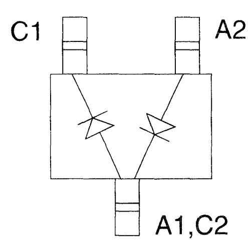
CMPD6263



CMPD6263A



CMPD6263C



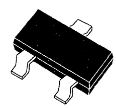
CMPD6263S

DATA SHEET

R2

CMPD7000

DUAL SILICON SWITCHING DIODE SERIES CONNECTION



SOT-23 CASE

Central TM
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPD7000 type is an ultra-high speed silicon switching diodes manufactured by the epitaxial planar process, in an epoxy molded surface mount package, connected in a series configuration, designed for high speed switching applications.
Marking Code is C5C.

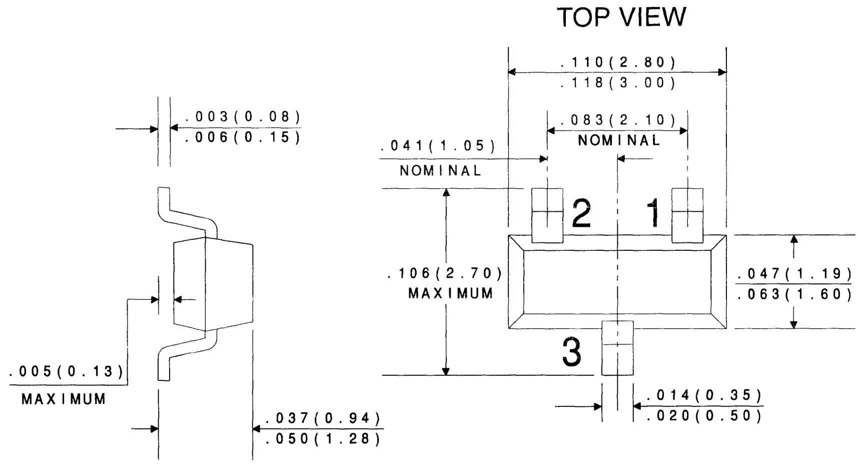
MAXIMUM RATINGS (T_A=25°C)

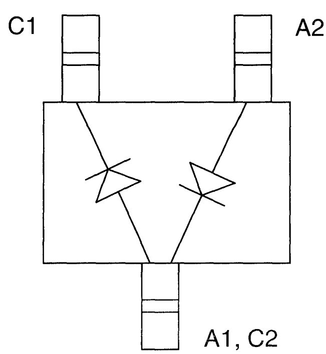
	SYMBOL		UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	100	V
Average Forward Current	I_O	200	mA
Peak Forward Current	I_{FM}	500	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
BV_R	I_R=100μA	100			V
I_R	V_R=50V			300	nA
I_R	V_R=50V, T_A=125°C			100	μA
I_R	VR=100V			500	nA
V_F	I_F=1.0mA	0.55		0.70	V
V_F	I_F=10mA	0.67		0.82	V
V_F	I_F=100mA	0.75		1.10	V
C_T	V_R=0, f=1 MHz			1.5	pF
t_{rr}	I_R=IF=10mA, R_L=100Ω, Rec. to 1.0mA		2.0	4.0	ns

All dimensions in inches (mm).

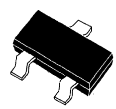




R2

CMPF4391
CMPF4392
CMPF4393

N-CHANNEL JFET



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPF4391 series types are N-Channel Silicon Field Effect Transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for switching applications.
Marking Codes are 6J, 6K, and 6G Respectively.

MAXIMUM RATINGS (T_A=25°C)

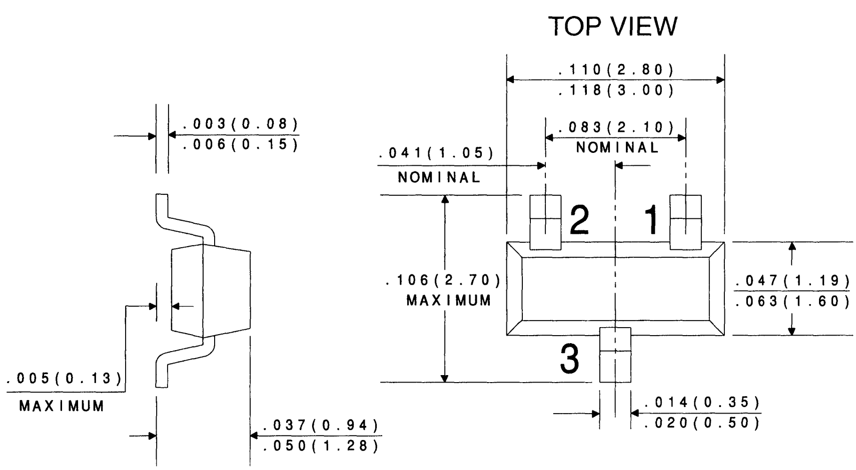
	SYMBOL		UNITS
Drain-Gate Voltage	V_{GD}	40	V
Gate-Source Voltage	V_{GS}	40	V
Drain-Source Voltage	V_{DS}	40	V
Gate Current	I_G	50	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

		CMPF4391		CMPF4392		CMPF4393		
SYMBOL	TEST CONDITIONS	MIN	MAX	MIN	MAX	MIN	MAX	UNITS
I_{GSS}	V_{GS}=20V		0.1		0.1		0.1	nA
I_{GSS}	V_{GS}=20V, T_A=100°C		0.2		0.2		0.2	μA
I_{DSS}	V_{DS}=20V	50	150	25	75	5.0	30	mA
$I_{D(OFF)}$	V_{DS}=20V, V_{GS}=12V		0.1		-		-	nA
$I_{D(OFF)}$	V_{DS}=20V, V_{GS}=7.0V		-		0.1		-	nA
$I_{D(OFF)}$	V_{DS}=20V, V_{GS}=5.0V		-		-		0.1	nA
$I_{D(OFF)}$	V_{DS}=20V, V_{GS}=12V,T_A=100°C		0.2		-		-	μA
$I_{D(OFF)}$	V_{DS}=20V, V_{GS}=7.0V, T_A=100°C		-		0.2		-	μA
$I_{D(OFF)}$	V_{DS}=20V, V_{GS}=5.0V, T_A=100°C		-		-		0.2	μA
BV_{GSS}	I_G=1.0μA	40		40		40		V
$V_{GS(OFF)}$	V_{DS}=20V, I_D=1.0nA	4.0	10	2.0	5.0	0.5	3.0	V
$V_{GS(f)}$	I_G=1.0mA		1.0		1.0		1.0	V
$V_{DS(ON)}$	I_D=12mA		0.4		-		-	V
$V_{DS(ON)}$	I_D=6.0mA		-		0.4		-	V
$V_{DS(ON)}$	I_D=3.0mA		-		-		0.4	V

SYMBOL	TEST CONDITIONS	CMPF4391 MIN	CMPF4391 MAX	CMPF4392 MIN	CMPF4392 MAX	CMPF4393 MIN	CMPF4393 MAX	UNITS
$r_{DS(ON)}$	I_D=1.0mA, V_{GS}=0		30		60		100	Ω
$r_{ds(ON)}$	V_{GS}=0, I_D=0, f=1.0kHz		30		60		100	Ω
C_{iss}	V_{DS}=20V, V_{GS}=0, f=1.0MHz		14		14		14	pF
C_{rss}	V_{GS}=12V, V_{DS}=0, f=1.0MHz		3.5		-		-	pF
C_{rss}	V_{GS}=7.0V, V_{DS}=0, f=1.0MHz		-		3.5		-	pF
C_{rss}	V_{GS}=5.0V, V_{DS}=0, f=1.0MHz		-		-		3.5	pF
t_{ON}	$I_{D(ON)}$=12mA		15		-		-	ns
t_{ON}	$I_{D(ON)}$=6.0mA		-		15		-	ns
t_{ON}	$I_{D(ON)}$=3.0mA		-		-		15	ns
t_{OFF}	$V_{GS(OFF)}$=12V		20		-		-	ns
t_{OFF}	$V_{GS(OFF)}$=7.0V		-		35		-	ns
t_{OFF}	$V_{GS(OFF)}$=5.0V		-		-		50	ns

All dimensions in inches (mm).



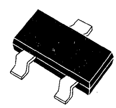
LEAD CODE:

1) DRAIN
2) SOURCE
3) GATE

R2

CMPF4416A

SILICON N-CHANNEL JFET



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPF4416A type is an epoxy molded N-Channel Silicon Junction Field Effect Transistor manufactured in an SOT-23 case, designed for VHF amplifier and mixer applications. **Marking code is 6BG.**

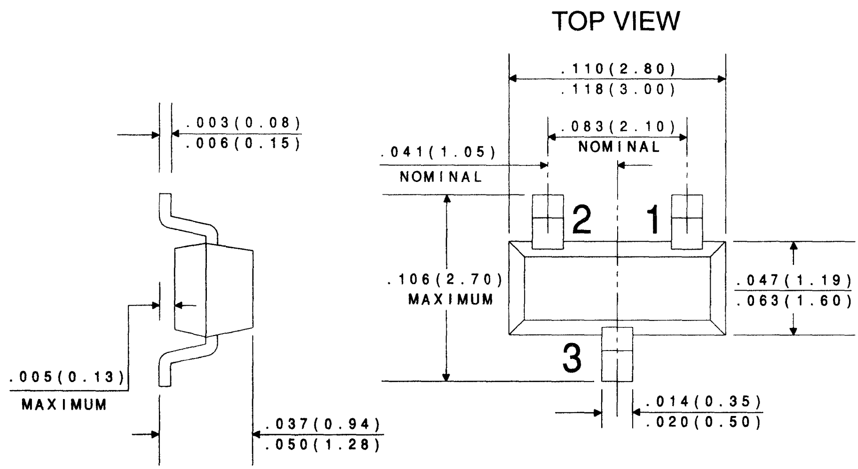
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Drain-Source Voltage	V_{DS}	35	V
Gate-Source Voltage	V_{GS}	35	V
Gate Current	I_G	10	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{GSS}	V_{GS}=20V		1.0	nA
I_{DSS}	V_{DS}=15V, V_{GS}=0	5.0	15	mA
BV_{GSS}	I_G=1.0μA	35		V
$V_{GS(off)}$	V_{DS}=15V, ID=1.0nA	2.5	6.0	V
g_{fs}	V_{DS}=15V, V_{GS}=0, f=1.0kHz	4.5	7.5	mmhos
C_{iss}	V_{DS}=15V, V_{GS}=0, f=1.0MHz		4.5	pF
C_{rss}	V_{DS}=15V, V_{GS}=0, f=1.0MHz		1.2	pF
N_F	V_{DS}=15V, V_{GS}=0, f=1.0kHz, R_G=1.0MΩ		2.5	dB

All dimensions in inches (mm).



LEAD CODE:

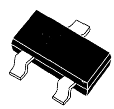
1) DRAIN
2) SOURCE
3) GATE

DATA SHEET

R2

CMPS5064

SILICON CONTROLLED RECTIFIER



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPS5064 type is an epoxy molded PNPN Silicon Controlled Rectifier manufactured in an SOT-23 case, designed for control systems and sensing circuit applications.
Marking code is P2D.

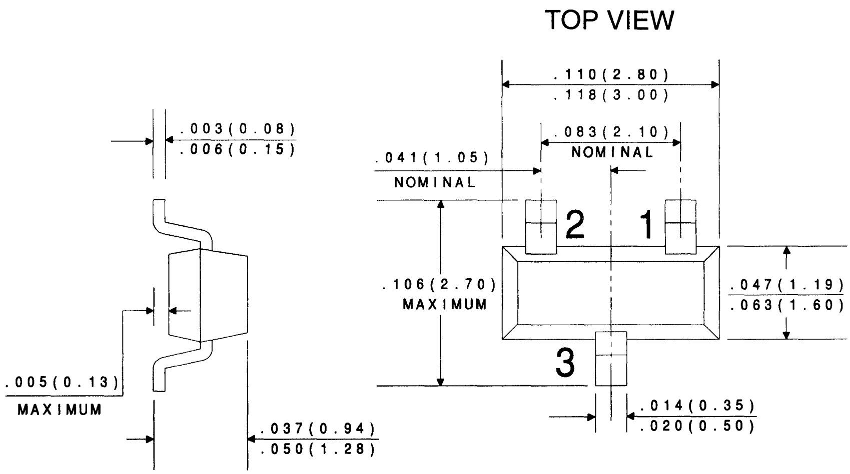
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Peak Repetitive Off-State Voltage	V_{DRM}	400	V
Peak Repetitive Reverse Voltage	V_{RRM}	400	V
RMS On-State Current	$I_{T(RMS)}$	0.8	A
Average On-State Current (T_C=67°C)	$I_{T(AV)}$	0.51	A
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{DRM}	V_D=400V, R_{GK}=1KΩ,T_C=125°C		50	μA
I_{RRM}	V_D=400V, R_{GK}=1KΩ,T_C=125°C		50	μA
V_T	I_T=1.2A		1.7	V
I_{GT}	V_D=7.0V, R_L=100Ω, R_{GK}=1KΩ		200	μA
V_{GT}	V_D=7.0V, R_L=100Ω, R_{GK}=1KΩ		0.8	V
V_{GD}	V_D=400V, R_L=100Ω, T_C=125°C	0.1		V
I_H	V_D=7.0, R_{GK}=1KΩ		5.0	mA
t_{ON}	V_D=400V, I_{GT}=1.0mA, R_{GK}=1.0Ω, di/dt=6.0A/μs		2.8 TYP	μs

All dimensions in inches (mm).



LEAD CODE:

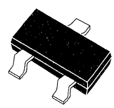
1) CATHODE
2) GATE
3) ANODE

DATA SHEET

R2

CMPSH-3
CMPSH-3A
CMPSH-3C
CMPSH-3S

SCHOTTKY DIODES



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPSH-3 Series types are Silicon Schottky diodes designed for surface mount fast switching applications requiring a low forward voltage drop.

The following configurations are available:

CMPSH-3	SINGLE	**MARKING CODE: D95**
CMPSH-3A	DUAL, COMMON ANODE	**MARKING CODE: DB1**
CMPSH-3C	DUAL, COMMON CATHODE	**MARKING CODE: DB2**
CMPSH-3S	DUAL, IN SERIES	**MARKING CODE: DA5**

MAXIMUM RATINGS (T_A=25°C)

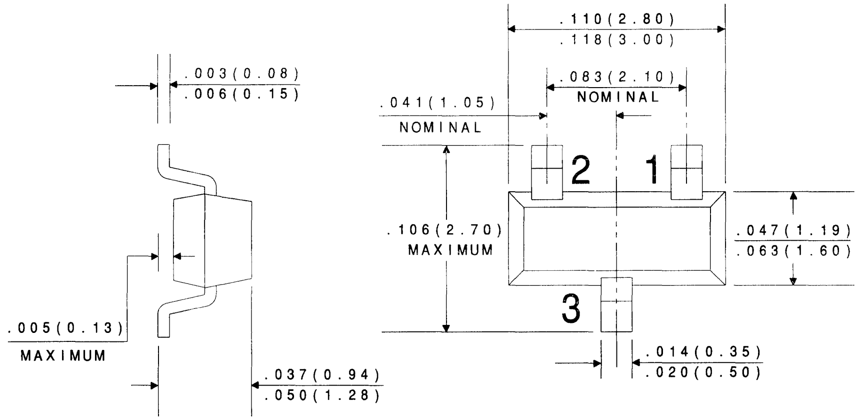
	SYMBOL		**UNITS**
Peak Repetitive Reverse Voltage	V_{RRM}	30	V
Continuous Forward Current	I_F	100	mA
Peak Repetitive Forward Current	I_{FRM}	350	mA
Forward Surge Current, tp=10 ms	I_{FSM}	750	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

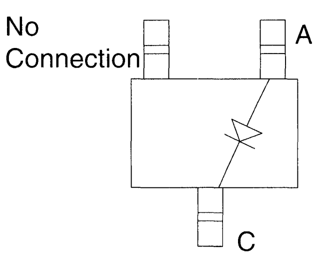
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	**TEST CONDITIONS**	**MIN**	**TYP**	**MAX**	**UNITS**
B_{VR}	I_R=100μA	30			V
V_F	I_F=2.0mA		0.29	0.33	V
V_F	I_F=15mA		0.40	0.45	V
V_F	I_F=100mA		0.74	1.00	V
I_R	V_R=25V		90	500	nA
I_R	V_R=25V, T_A=100°C		25	100	μA
C_T	V_R=1.0V, f=1 MHz		7.0		pF
t_{rr}	$I_F=I_R$=10mA, I_{rr}=1.0mA, R_L=100Ω			5.0	ns

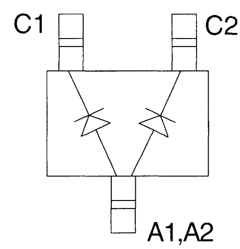
All dimensions in inches (mm).

TOP VIEW

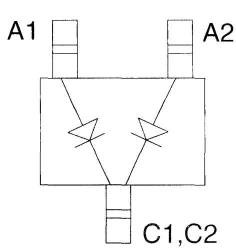




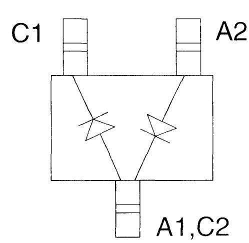
CMPSH-3



CMPSH-3A



CMPSH-3C



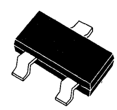
CMPSH-3S

DATA SHEET

R2

CMPT918

NPN SILICON RF TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT918 type is an NPN silicon RF transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high frequency (VHF/UHF) amplifier and oscillator applications.
Marking code is C3B.

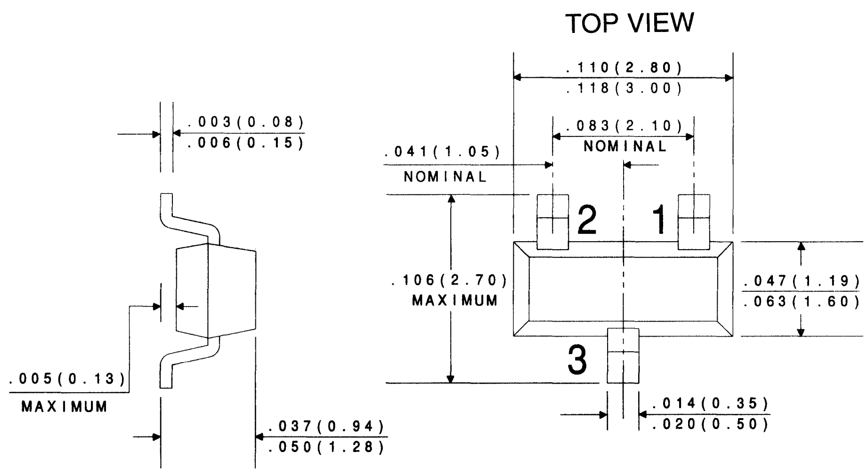
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CEO}	15	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current	I_C	50	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=15V		10	nA
BV_{CBO}	I_C=1.0μA	30		V
BV_{CEO}	I_C=3.0mA	15		V
BV_{EBO}	I_E=10μA	3.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.4	V
$V_{BE(SAT)}$	I_C=10mA, IB=1.0mA		1.0	V
h_{FE}	V_{CE}=1.0V, I_C=3.0mA	20		
f_T	V_{CE}=10V, I_C=4.0mA, f=100MHz	600		MHz
C_{ob}	V_{CB}=0V, I_E=0, f=1.0MHz		3.0	pF
C_{ob}	V_{CB}=10V, IE=0, f=1.0MHz		1.7	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		2.0	pF
P_{out}	V_{CB}=15V, I_C=8.0mA, f=500MHz	30		mW
G_{pe}	V_{CB}=12V, I_C=6.0mA, f=200MHz	11		dB
NF	V_{CE}=6.0V, I_C=1.0mA, R_S=50Ω, f=60MHz		6.0	dB

All dimensions in inches (mm).



LEAD CODE:

1) BASE
2) EMITTER
3) COLLECTOR

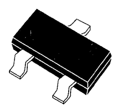
DATA SHEET

R2

Central™
Semiconductor Corp.

CMPT930

NPN SILICON TRANSISTOR



SOT-23 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR CMPT930 type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose amplifier applications.
Marking Code is C1X.

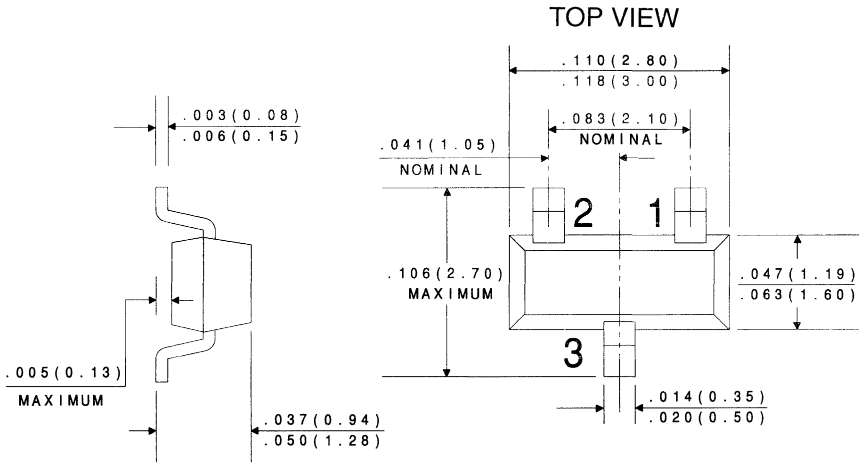
MAXIMUM RATINGS (T_A=25^{o}C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	45	V
Collector-Emitter Voltage	V_{CEO}	45	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	30	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	^{o}C
Thermal Resistance	Θ_{JA}	357	^{o}C/W

ELECTRICAL CHARACTERISTICS (T_A=25^{o}C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=45V		10	nA
I_{CEO}	V_{CE}=5.0V		10	nA
I_{CES}	V_{CE}=45V		10	nA
I_{EBO}	V_{EB}=5.0V		10	nA
BV_{CBO}	I_C=10μA	45		V
BV_{CEO}	I_C=10mA	45		V
BV_{EBO}	I_E=10μA	5.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=0.5mA		1.0	V
$V_{BE(SAT)}$	I_C=10mA, I_B=0.5mA	0.6	1.0	V
h_{FE}	V_{CE}=5.0V, I_C=10μA	100	300	
h_{FE}	V_{CE}=5.0V, I_C=500μA	150		
h_{FE}	V_{CE}=5.0V, I_C=10mA		600	
f_T	V_{CE}=5.0V, I_C=500mA, f=30MHz	30		MHz
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		8.0	pF
NF	V_{CE}=5.0V, I_C=10mA, R_S=10kΩ, f=10Hz to 15.7kHz		3.0	dB

All dimensions in inches (mm).



LEAD CODE:

1) BASE
2) EMITTER
3) COLLECTOR

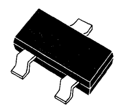
DATA SHEET

R2

Central™
Semiconductor Corp.

CMPT2222A

NPN SILICON TRANSISTOR



SOT-23 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT2222A type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose and switching applications.
Marking Code is C1P.

MAXIMUM RATINGS (T_A=25^{o}C)

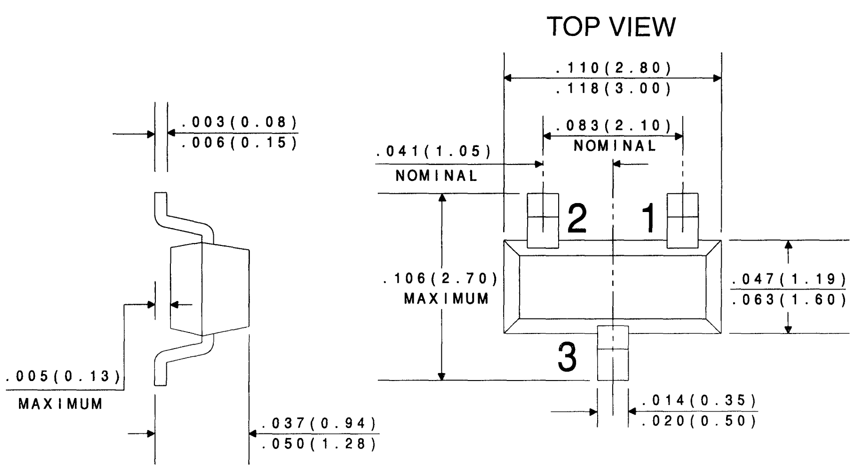
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	75	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	^{o}C
Thermal Resistance	Θ_{JA}	357	^{o}C/W

ELECTRICAL CHARACTERISTICS (T_A=25^{o}C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=60V		10	nA
I_{CBO}	V_{CB}=60V, T_A=125^{o}C		10	μA
I_{CEV}	V_{CE}=60V, V_{EB}=3.0V		10	nA
I_{EBO}	V_{EB}=3.0V		10	nA
BV_{CBO}	I_C=10μA	75		V
BV_{CEO}	I_C=10mA	40		V
BV_{EBO}	I_E=10μA	6.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.3	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		1.0	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA	0.6	1.2	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		2.0	V
h_{FE}	V_{CE}=10V, I_C=0.1mA	35		
h_{FE}	V_{CE}=10V, I_C=1.0mA	50		
h_{FE}	V_{CE}=10V, I_C=10mA	75		
h_{FE}	V_{CE}=1.0V, I_C=150mA	50		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=10V, I_C=150mA	100	300	
h_{FE}	V_{CE}=10V, I_C=500mA	40		
f_T	V_{CE}=20V, I_C=20mA, f=100MHz	300		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		8.0	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		25	pF
h_{ie}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	2.0	8.0	kΩ
h_{ie}	V_{CE}=10V, I_C=10mA, f=1.0kHz	0.25	1.25	kΩ
h_{re}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz		8.0	$x10^{-4}$
h_{re}	V_{CE}=10V, I_C=10mA, f=1.0kHz		4.0	$x10^{-4}$
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	50	300	
h_{fe}	V_{CE}=10V, I_C=10mA, f=1.0kHz	75	375	
h_{oe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	5.0	35	µmhos
h_{oe}	V_{CE}=10V, I_C=10mA, f=1.0kHz	25	200	µmhos
$rb'C_C$	V_{CB}=10V, I_E=20mA, f=31.8MHz		150	ps
NF	V_{CE}=10V, I_C=100µA, R_S=1.0kΩ, f=1.0kHz		4.0	dB
t_d	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		10	ns
t_r	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		25	ns
t_s	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA		225	ns
t_f	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA		60	ns

All dimensions in inches (mm).



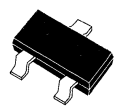
DATA SHEET

LEAD CODE:
1) BASE
2) EMITTER
3) COLLECTOR

R2

CMPT2369

NPN SILICON TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT2369 type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for ultra high speed switching applications.
Marking Code is C1J.

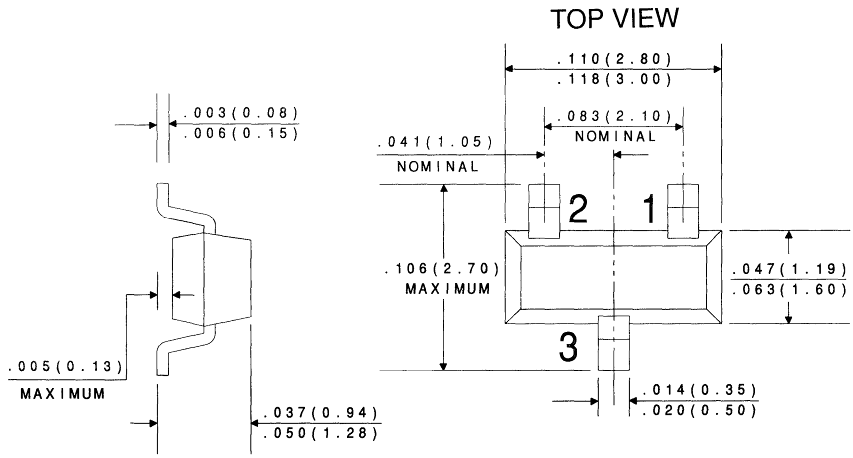
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CES}	40	V
Collector-Emitter Voltage	V_{CEO}	15	V
Emitter-Base Voltage	V_{EBO}	4.5	V
Collector Current	I_C	500	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=20V		0.4	µA
I_{CBO}	V_{CB}=20V, T_A=125°C		30	µA
BV_{CBO}	I_C=10µA	40		V
BV_{CES}	I_C=10µA	40		V
BV_{CEO}	I_C=10mA	15		V
BV_{EBO}	I_E=10µA	4.5		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.25	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA	0.7	0.85	V
h_{FE}	V_{CE}=1.0V, I_C=10mA	40	120	
h_{FE}	V_{CE}=2.0V, I_C=100mA	20		
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		4.0	pF
f_T	V_{CE}=10V, I_C=10mA, f=100MHz	500		MHz
t_s	V_{CC}=3.0V, I_C=I_{B1}=I_{B2}=10mA		13	ns
t_{on}	V_{CC}=3.0V, I_C=10mA, I_{B1}=3.0mA		12	ns
t_{off}	V_{CC}=3.0V, I_C=10mA, I_{B1}=3.0mA, I_{B2}=1.5mA		18	ns

All dimensions in inches (mm).



LEAD CODE:

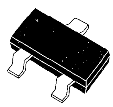
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R2

CMPT2484

NPN SILICON
LOW NOISE TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT2484 type is an NPN silicon low noise transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for low noise amplifier applications.
Marking Code is C1U.

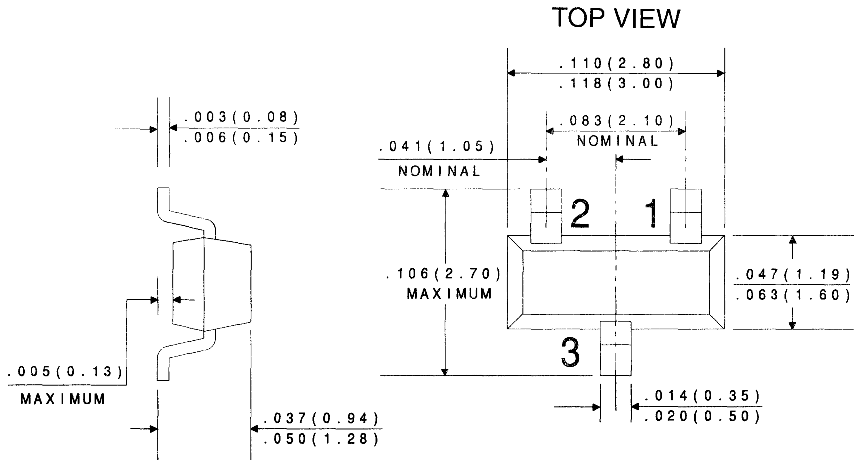
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	50	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=45V		10	nA
I_{CBO}	V_{CB}=45V, T_A=150°C		10	μA
I_{EBO}	V_{EB}=5.0V		10	nA
BV_{CBO}	I_C=10μA	60		V
BV_{CEO}	I_C=10mA	60		V
BV_{EBO}	I_E=10μA	5.0		V
$V_{CE(SAT)}$	I_C=1.0mA, I_B=100μA		0.35	V
$V_{BE(ON)}$	V_{CE}=5.0V, I_C=1.0mA		0.95	V
h_{FE}	V_{CE}=5.0V, I_C=1.0mA	250	---	
h_{FE}	V_{CE}=5.0V, I_C=10mA	---	800	
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		6.0	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		6.0	pF
NF	V_{CE}=5.0V, I_C=10μA, RS=10kΩ f=1.0kHz, BW=200Hz		3.0	dB

All dimensions in inches (mm).



LEAD CODE:

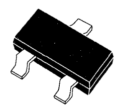
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R2

CMPT2907A

PNP SILICON TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT2907A type is an PNP silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose and switching applications.
Marking Code is C2F.

MAXIMUM RATINGS (T_A=25°C)

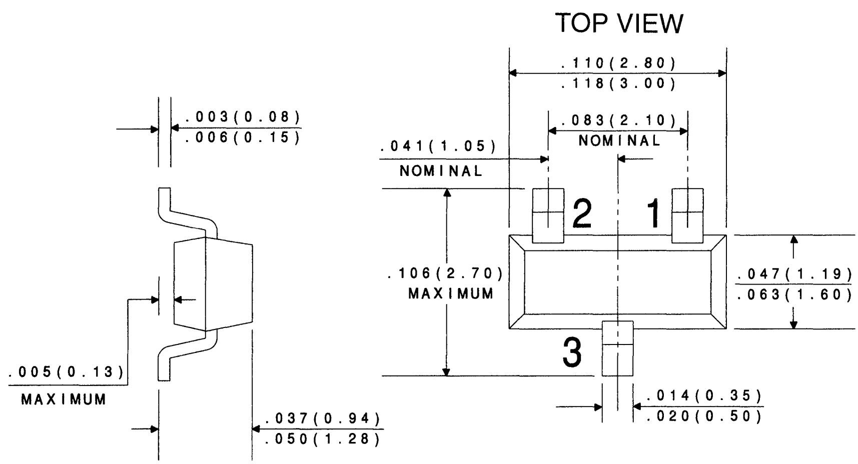
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=50V		10	nA
I_{CBO}	V_{CB}=50V, T_A=125°C		10	μA
I_{CEV}	V_{CE}=30V, V_{BE}=0.5V		50	nA
BV_{CBO}	I_C=10μA	60		V
BV_{CEO}	I_C=10mA	60		V
BV_{EBO}	I_E=10μA	5.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.4	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		1.6	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA		1.3	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		2.6	V
h_{FE}	V_{CE}=10V, I_C=0.1mA	75		
h_{FE}	V_{CE}=10V, I_C=1.0mA	100		
h_{FE}	V_{CE}=10V, I_C=10mA	100		
h_{FE}	V_{CE}=10V, I_C=150mA	100	300	

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=10V, I_C=500mA	50		
f_T	V_{CE}=20V, I_C=50mA, f=100MHz	200		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		8.0	pF
C_{ib}	V_{BE}=2.0V, I_C=0, f=1.0MHz		30	pF
t_{on}	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		45	ns
t_d	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		10	ns
t_r	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		40	ns
t_{off}	V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA		100	ns
t_s	V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA		80	ns
t_f	V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA		30	ns

All dimensions in inches (mm).



DATA SHEET

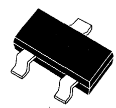
LEAD CODE:

1) BASE
2) EMITTER
3) COLLECTOR

R2

CMPT3019

NPN SILICON TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION

The CENTRAL SEMICONDUCTOR CMPT3019 type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for very high current, general purpose amplifier applications.
Marking Code is C3A.

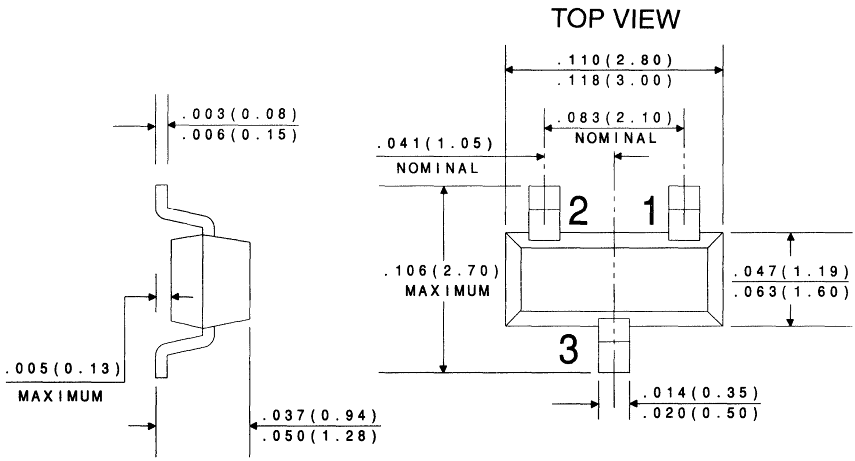
MAXIMUM RATINGS (T_A=25^{o}C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	120	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	7.0	V
Collector Current	I_C	500	A
Collector Current (Peak)	I_{CM}	1.0	A
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	^{o}C
Thermal Resistance	Θ_{JA}	357	^{o}C/W

ELECTRICAL CHARACTERISTICS (T_A=25^{o}C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=90V		10	nA
I_{EBO}	V_{EB}=5.0V		10	nA
BV_{CBO}	I_C=100μA	120		V
BV_{CEO}	I_C=30mA	80		V
BV_{EBO}	I_E=100μA	7.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.2	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		0.5	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA		1.1	V
h_{FE}	V_{CE}=10V, I_C=0.1mA	50		
h_{FE}	V_{CE}=10V, I_C=10mA	90		
h_{FE}	V_{CE}=10V, I_C=150mA	100	300	
h_{FE}	V_{CE}=10V, I_C=500mA	50		
f_T	V_{CE}=10V, I_C=50mA, f=1.0MHz	100		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		12	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		60	pF
NF	V_{CE}=10V, I_C=100mA, R_S=1kΩ, f=1.0kHz		4.0	dB

All dimensions in inches (mm).



LEAD CODE:

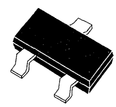
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R2

CMPT3640

PNP SILICON TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT3640 type is an PNP silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for saturated switching applications. **Marking code is C2J.**

MAXIMUM RATINGS (T_A=25°C)

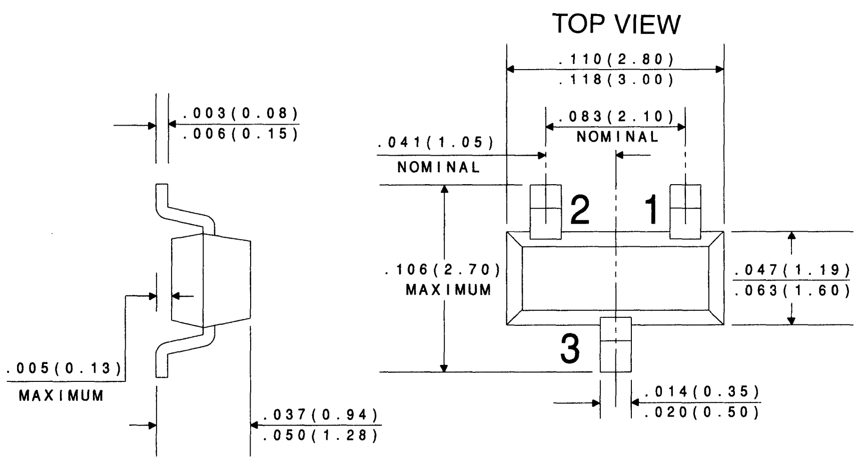
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	12	V
Collector-Emitter Voltage	V_{CEO}	12	V
Emitter-Base Voltage	V_{EBO}	4.0	V
Collector Current	I_C	80	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CES}	V_{CE}=6.0V		10	nA
I_{CES}	V_{CE}=6.0V, T_A=65°C		10	µA
I_B	V_{CE}=6.0V, V_{EB}=0		10	nA
BV_{CBO}	I_C=100µA	12		V
BV_{CEO}	I_C=10mA	12		V
BV_{EBO}	I_E=100µA	4.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.20	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		0.60	V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA, T_A=65°C		0.25	V
$V_{BE(SAT)}$	I_C=10mA, I_B=0.5mA	0.75	0.95	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA	0.80	1.00	V
$V_{BE(SAT)}$	I_C=50mA, I_B=5.0mA		1.50	V
h_{FE}	V_{CE}=0.3V, I_C=10mA	30	120	

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=1.0V, I_C=50mA	20		
f_T	V_{CE}=5.0V, I_C=10mA, f=100MHz	500		MHz
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		3.5	pF
C_{ib}	V_{BE}=0.5V, I_C=0, f=1.0MHz		3.5	pF
t_d	V_{CC}=6.0V, V_{BE}=1.9, I_C=50mA, I_{B1}=5.0mA		10	ns
t_r	V_{CC}=6.0V, V_{BE}=1.9, I_C=50mA, I_{B1}=5.0mA		30	ns
t_s	V_{CC}=6.0V, I_C=50mA, I_{B1}=I_{B2}=5.0mA		20	ns
t_f	V_{CC}=6.0V, I_C=50mA, I_{B1}=I_{B2}=5.0mA		12	ns
t_{on}	V_{CC}=6.0V, V_{BE}=1.9, I_C=50mA, I_{B1}=5.0mA		25	ns
t_{on}	V_{CC}=1.5V, I_C=10mA, I_{B1}=0.5mA		60	ns
t_{off}	V_{CC}=6.0V, V_{BE}=1.9, I_C=50mA, I_{B1}=5.0mA		35	ns
t_{off}	V_{CC}=1.5V, I_C=10mA, I_{B1}=I_{B2}=0.5mA		75	ns

All dimensions in inches (mm).



DATA SHEET

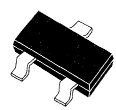
LEAD CODE:

1) BASE
2) EMITTER
3) COLLECTOR

R2

CMPT3646

NPN SILICON TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT3646 type is an NPN Silicon Transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high current, ultra high speed switching applications.
Marking code is C2R.

MAXIMUM RATINGS (T_A=25^{o}C)

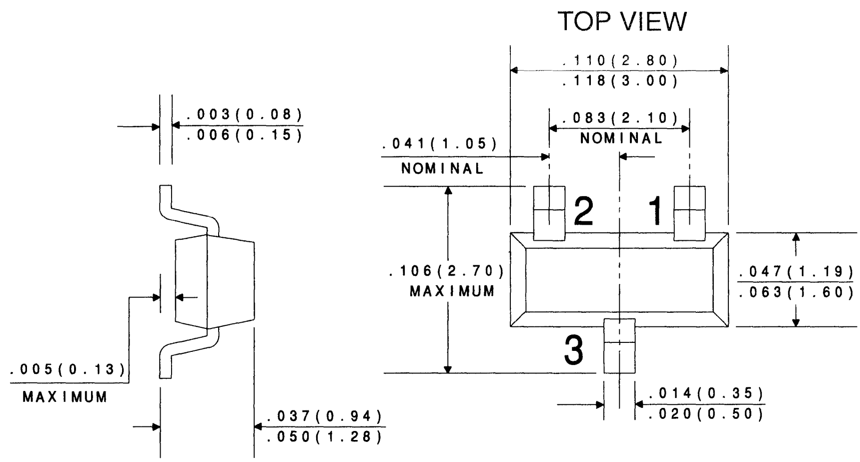
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CES}	40	V
Collector-Emitter Voltage	V_{CEO}	15	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	200	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	^{o}C
Thermal Resistance	Θ_{JA}	357	^{o}C/W

ELECTRICAL CHARACTERISTICS (T_A=25^{o}C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CES}	V_{CE}=20V		0.5	μA
I_{CES}	V_{CE}=20V, T_A=65^{o}C		3.0	μA
BV_{CBO}	I_C=100μA	40		V
BV_{CES}	I_C=10μA	40		V
BV_{CEO}	I_C=10mA	15		V
BV_{EBO}	I_E=100μA	5.0		V
$V_{CE(SAT)}$	I_C=30mA, I_B=3.0mA		0.20	V
$V_{CE(SAT)}$	I_C=30mA, I_B=3.0mA, T_A=65^{o}C		0.30	V
$V_{CE(SAT)}$	I_C=100mA, I_B=10mA		0.28	V
$V_{CE(SAT)}$	I_C=300mA, I_B=30mA		0.50	V
$V_{BE(SAT)}$	I_C=30mA, I_B=3.0mA	0.75	0.95	V
$V_{BE(SAT)}$	I_C=100mA, I_B=10mA		1.20	V
$V_{BE(SAT)}$	I_C=300mA, I_B=30mA		1.70	V
h_{FE}	V_{CE}=0.4V, I_C=30mA	30	120	
h_{FE}	V_{CE}=0.5V, I_C=100mA	25		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=1.0V, I_C=300mA	15		
f_T	V_{CE}=10V, I_C=30mA, f=100MHz	350		MHz
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		5.0	pF
C_{ib}	V_{BE}=0.5V, I_C=0, f=1.0MHz		8.0	pF
t_{on}	V_{CC}=10V, I_C=300mA, I_{B1}=30mA		18	ns
t_{off}	V_{CC}=10V, I_C=300mA, I_{B1}=I_{B2}=30mA		28	ns
t_S	V_{CC}=10V, I_C=I_{B1}=I_{B2}=10mA		18	ns

All dimensions in inches (mm).



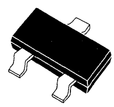
LEAD CODE:

1) BASE
2) EMITTER
3) COLLECTOR

R2

CMPT3904 NPN
CMPT3906 PNP

COMPLEMENTARY SILICON TRANSISTORS



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT3904, CMPT3906 types are complementary silicon transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose amplifier and switching applications.
Marking Codes are C1A, C2A Respectively.

MAXIMUM RATINGS (T_A=25^{o}C)

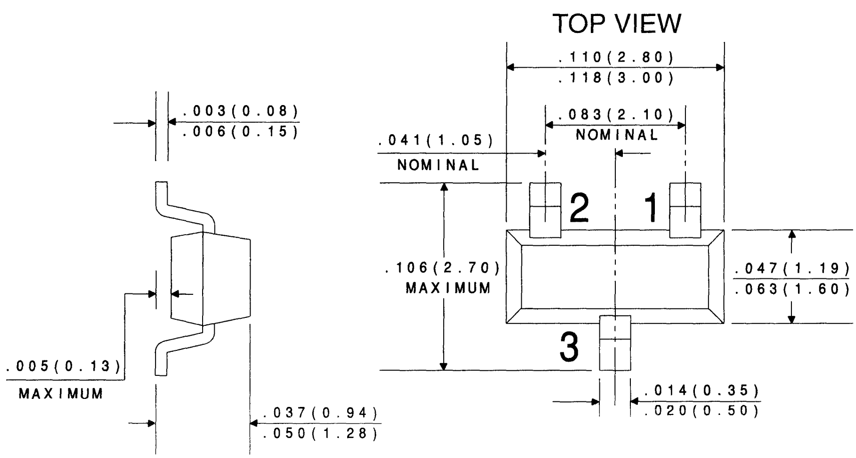
	SYMBOL	CMPT3904	CMPT3906	UNITS
Collector-Base Voltage	V_{CBO}	60	40	V
Collector-Emitter Voltage	V_{CEO}	40	40	V
Emitter-Base Voltage	V_{EBO}	6.0	5.0	V
Collector Current	I_C	200		mA
Power Dissipation	P_D	350		mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150		^{o}C
Thermal Resistance	Θ_{JA}	357		^{o}C/W

ELECTRICAL CHARACTERISTICS (T_A=25^{o}C unless otherwise noted)

		CMPT3904		CMPT3906		
SYMBOL	TEST CONDITIONS	MIN	MAX	MIN	MAX	UNITS
I_{CEV}	V_{CE}=30V, V_{EB}=3.0V		50		50	nA
I_{BL}	V_{CE}=30V, V_{EB}=3.0V		50			nA
BV_{CBO}	I_C=10μA	60		40		V
BV_{CEO}	I_C=1.0mA	40		40		V
BV_{EBO}	I_E=10μA	6.0		5.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.20		0.25	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		0.30		0.40	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA	0.65	0.85	0.65	0.85	V
$V_{BE(SAT)}$	I_C=50mA, I_B=5.0mA		0.95		0.95	V
h_{FE}	V_{CE}=1.0V, I_C=0.1mA	40		60		
h_{FE}	V_{CE}=1.0V, I_C=1.0mA	70		80		
h_{FE}	V_{CE}=1.0V, I_C=10mA	100	300	100	300	
h_{FE}	V_{CE}=1.0V, I_C=50mA	60		60		
h_{FE}	V_{CE}=1.0V, I_C=100mA	30		30		

SYMBOL	TEST CONDITIONS	CMPT3904 MIN	CMPT3904 MAX	CMPT3906 MIN	CMPT3906 MAX	UNITS
f_T	V_{CE}=20V, I_C=10mA, f=100MHz	300		250		MHz
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		4.0		4.5	pF
C_{ib}	V_{BE}=0.5V, I_C=0, f=1.0MHz		8.0		10	pF
h_{ie}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	1.0	10	2.0	12	kΩ
h_{re}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	0.5	8.0	0.1	10	$x10^{-4}$
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	100	400	100	400	
h_{oe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	1.0	40	3.0	60	μmhos
NF	V_{CE}=5.0V, I_C=100mA, R_S=1.0kΩ f=10Hz to 15.7kHz		5.0		4.0	dB
t_d	V_{CC}=3.0V, V_{BE}=0.5, I_C=10mA, I_{B1}=1.0mA		35		35	ns
t_r	V_{CC}=3.0V, V_{BE}=0.5, I_C=10mA, I_{B1}=1.0mA		35		35	ns
t_s	V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=1.0mA		200		225	ns
t_f	V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=1.0mA		50		75	ns

All dimensions in inches (mm).



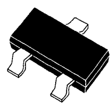
LEAD CODE:

1) BASE
2) EMITTER
3) COLLECTOR

R2

CMPT4033

PNP SILICON TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION

The CENTRAL SEMICONDUCTOR CMPT4033 type is an PNP silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for very high current, general purpose amplifier applications.
Marking Code is C4A.

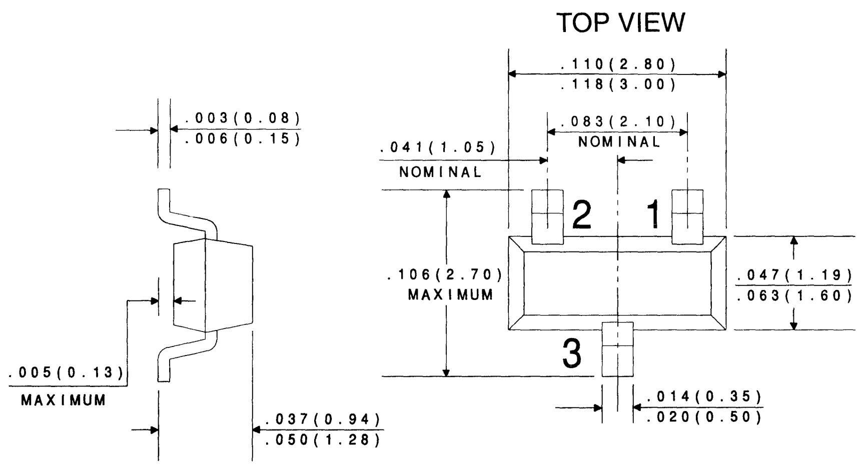
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	500	mA
Collector Current (Peak)	I_{CM}	1.0	A
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=60V		50	nA
I_{EBO}	V_{EB}=5.0V		10	nA
BV_{CBO}	I_C=10μA	80		V
BV_{CEO}	I_C=10mA	80		V
BV_{EBO}	I_E=10μA	5.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.15	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		0.50	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA		0.90	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		1.10	V
h_{FE}	V_{CE}=5.0V, I_C=0.1mA	75		
h_{FE}	V_{CE}=5.0V, I_C=100mA	100	300	
h_{FE}	V_{CE}=5.0V, I_C=500mA	70		
f_T	V_{CE}=10V, I_C=50mA, f=1.0MHz	100		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		20	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		110	pF

All dimensions in inches (mm).



LEAD CODE:

1) BASE
2) EMITTER
3) COLLECTOR

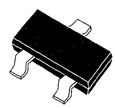
DATA SHEET

R2

Central™
Semiconductor Corp.

CMPT4401 NPN
CMPT4403 PNP

COMPLEMENTARY SILICON TRANSISTORS



SOT-23 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT4401, CMPT4403 types are complementary silicon transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose amplifier and switching applications.
Marking Codes are C2X, C2T Respectively.

MAXIMUM RATINGS ($T_A=25^oC$)

	SYMBOL	CMPT4401	CMPT4403	UNITS
Collector-Base Voltage	V_{CBO}	60	40	V
Collector-Emitter Voltage	V_{CEO}	40	40	V
Emitter-Base Voltage	V_{EBO}	6.0	5.0	V
Collector Current	I_C	600		mA
Power Dissipation	P_D	350		mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150		^oC
Thermal Resistance	Θ_{JA}	357		$^oC/W$

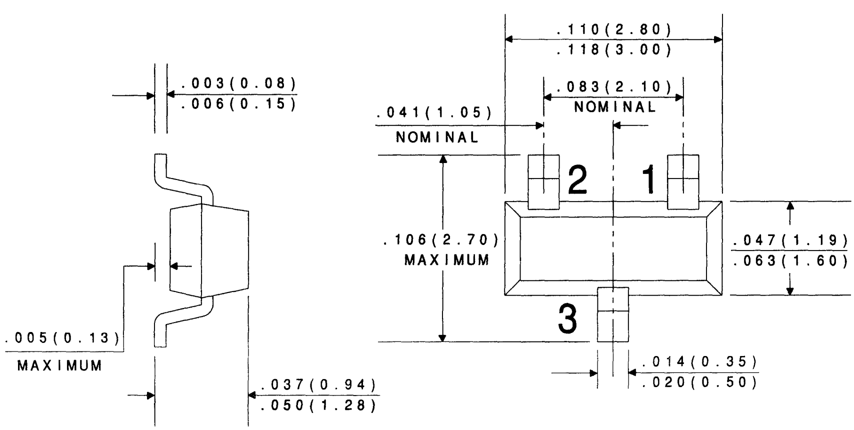
ELECTRICAL CHARACTERISTICS ($T_A=25^oC$ unless otherwise noted)

		CMPT4401		CMPT4403		
SYMBOL	**TEST CONDITIONS**	**MIN**	**MAX**	**MIN**	**MAX**	**UNITS**
I_{CEV}	V_{CE}=35V, V_{EB}=0.4V		0.1		0.1	μA
I_{BEV}	V_{CE}=35V, V_{EB}=0.4V		0.1		0.1	μA
BV_{CBO}	I_C=100μA	60		40		V
BV_{CEO}	I_C=1.0mA	40		40		V
BV_{EBO}	I_E=100μA	6.0		5.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.40		0.40	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		0.75		0.75	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA	0.75	0.95	0.75	0.95	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		1.2		1.3	V
h_{FE}	V_{CE}=1.0V, I_C=0.1mA	20		30		
h_{FE}	V_{CE}=1.0V, I_C=1.0mA	40		60		
h_{FE}	V_{CE}=1.0V, I_C=10mA	80		100		

SYMBOL	TEST CONDITIONS	CMPT4401 MIN	CMPT4401 MAX	CMPT4403 MIN	CMPT4403 MAX	UNITS
h_{FE}	V_{CE}=1.0V, I_C=150mA	100	300	-	-	
h_{FE}	V_{CE}=2.0V, I_C=150mA	-	-	100	300	
h_{FE}	V_{CE}=2.0V, I_C=500mA	40		20		
f_T	V_{CE}=10V, I_C=20mA, f=100MHz	250		200		MHz
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		6.5		8.5	pF
C_{ib}	V_{BE}=0.5V, I_C=0, f=1.0MHz		30		30	pF
h_{ie}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	1.0	15	1.5	15	kΩ
h_{re}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	0.1	8.0	0.1	8.0	$x10^{-4}$
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	40	500	60	500	
h_{oe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	1.0	30	1.0	100	μmhos
t_d	V_{CC}=30V, V_{BE}=2.0, I_C=150mA, I_{B1}=15mA		15		15	ns
t_r	V_{CC}=30V, V_{BE}=2.0, I_C=150mA, I_{B1}=15mA		20		20	ns
t_s	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA		225		225	ns
t_f	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA		30		30	ns

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

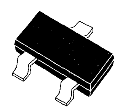
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R2

CMPT5086
CMPT5087

PNP SILICON TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT5086, CMPT5087 types are PNP silicon transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for applications requiring high gain and low noise.
Marking Codes are C2P and C2Q Respectively.

MAXIMUM RATINGS (T_A=25°C)

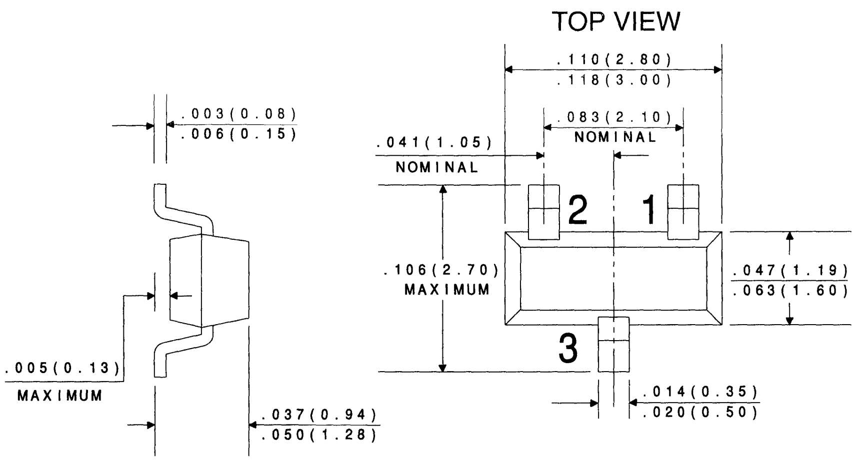
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current	I_C	50	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

		CMPT5086		CMPT5087		
SYMBOL	**TEST CONDITIONS**	**MIN**	**MAX**	**MIN**	**MAX**	**UNITS**
I_{CBO}	V_{CB}=10V		10		10	nA
I_{CBO}	V_{CB}=35V		50		50	nA
BV_{CBO}	I_C=100µA	50		50		V
BV_{CEO}	I_C=1.0mA	50		50		V
BV_{EBO}	I_E=100µA	3.0		3.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.30		0.30	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA		0.85		0.85	V
h_{FE}	V_{CE}=5.0V, I_C=0.1mA	150	500	250	800	
h_{FE}	V_{CE}=5.0V, I_C=1.0mA	150		250		
h_{FE}	V_{CE}=5.0V, I_C=10mA	150		250		
f_T	V_{CE}=5.0V, I_C=500µA, f=20MHz	40		40		MHz
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		4.0		4.0	pF
h_{fe}	V_{CE}=5.0V, I_C=1.0mA, f=1.0kHz	150	600	250	900	

SYMBOL	TEST CONDITIONS	CMPT5086 MIN	CMPT5086 MAX	CMPT5087 MIN	CMPT5087 MAX	UNITS
NF	V_{CE}=5.0V, I_C=20mA, R_S=10kΩ f=10Hz to 15.7kHz		3.0		2.0	dB
NF	V_{CE}=5.0V, I_C=100μA, R_S=3.0kΩ, f=1.0kHz		3.0		2.0	dB

All dimensions in inches (mm).



LEAD CODE:

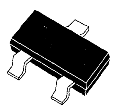
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R2

CMPT5088
CMPT5089

NPN SILICON TRANSISTORS



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT5088, CMPT5089 types are NPN silicon transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for applications requiring high gain and low noise.
Marking Codes are C1Q, C1R Respectively.

MAXIMUM RATINGS (T_A=25°C)

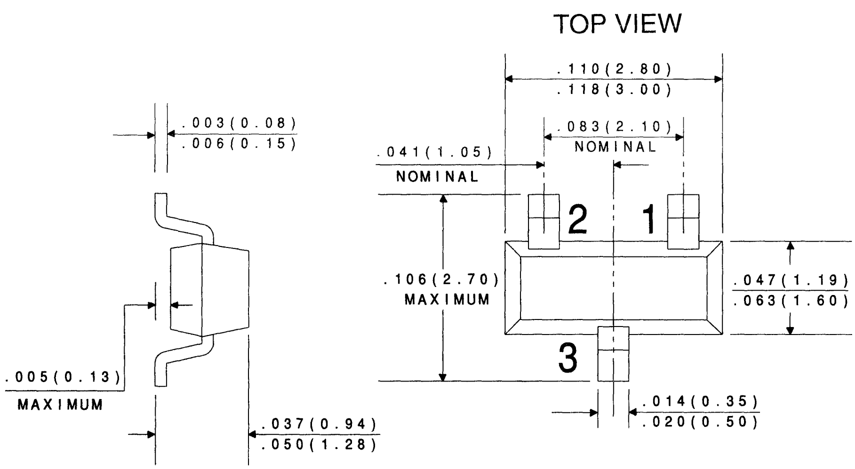
	SYMBOL	CMPT5088	CMPT5089	UNITS
Collector-Base Voltage	V_{CBO}	35	30	V
Collector-Emitter Voltage	V_{CEO}	30	25	V
Emitter-Base Voltage	V_{EBO}	4.5		V
Collector Current	I_C	50		mA
Power Dissipation	P_D	350		mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150		°C
Thermal Resistance	Θ_{JA}	357		°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

		CMPT5088		CMPT5089		
SYMBOL	**TEST CONDITIONS**	**MIN**	**MAX**	**MIN**	**MAX**	**UNITS**
I_{CBO}	V_{CB}=20V		50		-	nA
I_{CBO}	V_{CB}=15V		-		50	nA
I_{EBO}	V_{EB}=3.0V		50		-	nA
I_{EBO}	V_{EB}=4.5V		-		100	nA
BV_{CBO}	I_C=100μA	35		30		V
BV_{CEO}	I_C=1.0mA	30		25		V
BV_{EBO}	I_E=100μA	4.5		4.5		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.5		0.5	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA		0.8		0.8	V
h_{FE}	V_{CE}=5.0V, I_C=0.1mA	300	900	400	1200	
h_{FE}	V_{CE}=5.0V, I_C=1.0mA	350		450		
h_{FE}	V_{CE}=5.0V, I_C=10mA	300		400		
f_T	V_{CE}=5.0V, I_C=500μA, f=20MHz	50		50		MHz
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		4.0		4.0	pF

SYMBOL	TEST CONDITIONS	CMPT5088 MIN	CMPT5088 MAX	CMPT5089 MIN	CMPT5089 MAX	UNITS
C_{ib}	V_{BE}=0.5V, I_C=0, f=1.0MHz		10		10	pF
h_{fe}	V_{CE}=5.0V, I_C=1.0mA, f=1.0kHz	350	1400	450	1800	
NF	V_{CE}=5.0V, I_C=100μA, R_S=10kΩ f=10Hz to 15.7kHz		3.0		2.0	dB

All dimensions in inches (mm).



LEAD CODE:

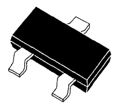
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R2

CMPT5179

NPN SILICON RF TRANSISTOR



SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT5179 type is an NPN silicon RF transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for low noise, high frequency amplifier and high output oscillator applications.

Marking code is C7H.

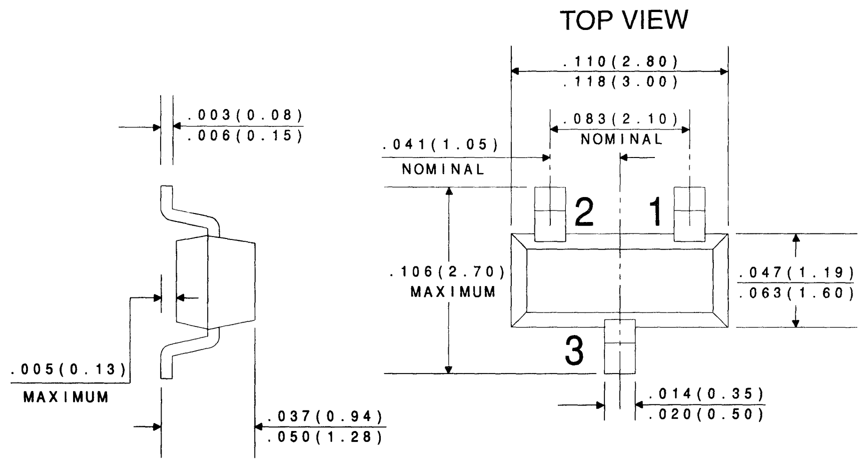
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	20	V
Collector-Emitter Voltage	V_{CEO}	12	V
Emitter-Base Voltage	V_{EBO}	2.5	V
Collector Current	I_C	50	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{CBO}	V_{CB}=15V			20	nA
BV_{CBO}	I_C=10μA	20			V
BV_{CEO}	I_C=3.0mA	12			V
BV_{EBO}	I_E=10μA	2.5			V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA			0.4	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA			1.0	V
h_{FE}	V_{CE}=1.0V, I_C=3.0mA	25			
f_T	V_{CE}=6.0V, I_C=5.0mA, f=100MHz	900	1450		MHz
C_{cb}	V_{CB}=10V, I_E=0, f=0.1 to 1.0MHz			1.0	pF
h_{fe}	V_{CE}=6.0V, I_C=2.0, f=1.0kHz	25			
G_{pe}	V_{CE}=6.0V, I_C=5.0mA, f=200MHz	15			dB
NF	V_{CE}=6.0V, I_C=1.5mA, R_S=50Ω, f=200MHz			4.5	dB

All dimensions in inches (mm).



LEAD CODE:

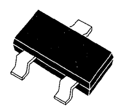
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R2

CMPT5401

PNP SILICON TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT5401 type is an PNP silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high voltage amplifier applications. **Marking Code is C2L.**

MAXIMUM RATINGS (T_A=25°C)

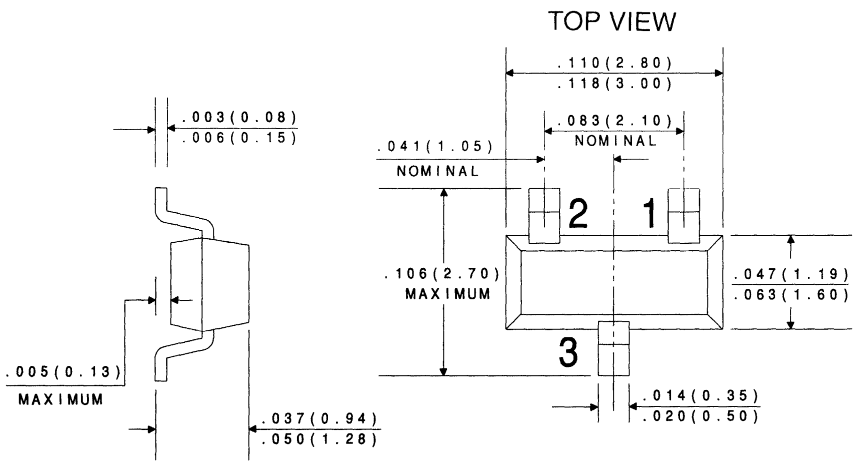
	SYMBOL		**UNITS**
Collector-Base Voltage	V_{CBO}	160	V
Collector-Emitter Voltage	V_{CEO}	150	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	500	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	**TEST CONDITIONS**	**MIN**	**MAX**	**UNITS**
I_{CBO}	V_{CB}=100V		50	nA
I_{CBO}	V_{CB}=100V, T_A=150°C		50	μA
BV_{CBO}	I_C=100μA	160		V
BV_{CEO}	I_C=1.0mA	150		V
BV_{EBO}	I_E=10μA	5.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.2	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		0.5	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA		1.0	V
$V_{BE(SAT)}$	I_C=50mA, I_B=5.0mA		1.0	V
h_{FE}	V_{CE}=5.0V, I_C=1.0mA	50		
h_{FE}	V_{CE}=5.0V, I_C=10mA	60	240	
h_{FE}	V_{CE}=5.0V, I_C=50mA	50		
f_T	V_{CE}=10V, I_C=10mA, f=100MHz	100	300	MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		6.0	pF

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	40	200	
NF	V_{CE}=5.0V, I_C=200µA, R_S=10Ω f=10Hz to 15.7kHz		8.0	dB

All dimensions in inches (mm).



LEAD CODE:

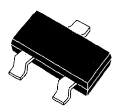
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R2

CMPT5551

NPN SILICON TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT5551 type is an NPN silicon transistor manufactured bythe epitaxial planar process, epoxy molded in a surface mount package, designed for high voltage amplifier applications.
Marking Code is 1FF.

MAXIMUM RATINGS (T_A=25°C)

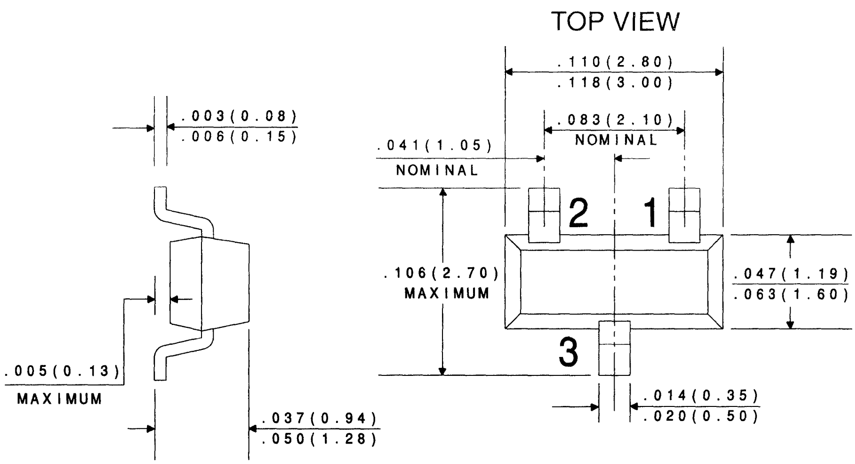
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	180	V
Collector-Emitter Voltage	V_{CEO}	160	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=120V		50	nA
I_{CBO}	V_{CB}=120V, T_A=100°C		50	μA
BV_{CBO}	I_C=100μA	180		V
BV_{CEO}	I_C=1.0mA	160		V
BV_{EBO}	I_E=10μA	6.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.15	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		0.20	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA		1.00	V
$V_{BE(SAT)}$	I_C=50mA, I_B=5.0mA		1.00	V
h_{FE}	V_{CE}=5.0V, I_C=1.0mA	80		
h_{FE}	V_{CE}=5.0V, IC=10mA	80	250	
h_{FE}	V_{CE}=5.0V, I_C=50mA	30		
f_T	V_{CE}=10V, I_C=10mA, f=100MHz	100	300	MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		6.0	pF

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	50	200	
N_F	VCE=5.0V, I_C=200μA, R_S=10Ω f=10Hz to 15.7kHz		8.0	dB

All dimensions in inches (mm).



LEAD CODE:

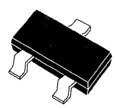
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R2

CMPT6427

NPN SILICON
DARLINGTON TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT6427 type is a NPN Silicon Darlington Transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for applications requiring extremely high gain.
Marking Code is C1V.

MAXIMUM RATINGS (T_A=25°C)

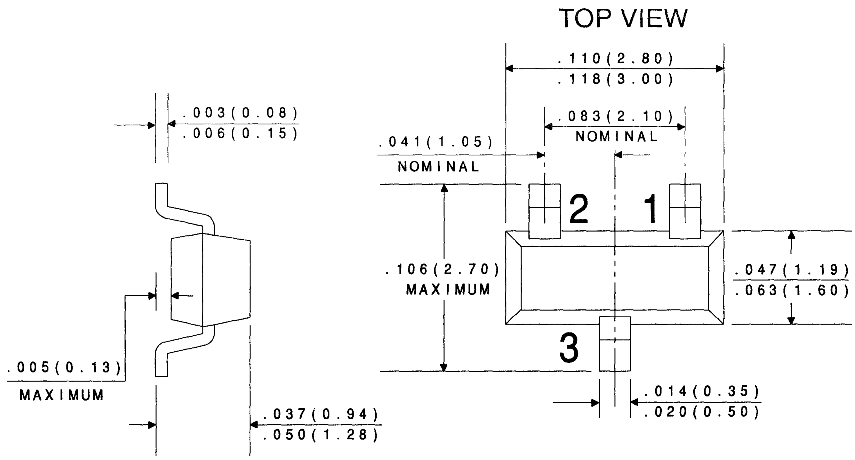
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	12	V
Collector Current	I_C	500	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=30V		50	nA
I_{CEO}	V_{CE}=25V		1.0	μA
I_{EBO}	V_{BE}=10V		50	nA
BV_{CBO}	I_C=100μA	40		V
BV_{CEO}	I_C=10mA	40		V
BV_{EBO}	I_E=10μA	12		V
$V_{CE(SAT)}$	I_C=50mA, I_B=0.5mA		1.20	V
$V_{CE(SAT)}$	I_C=500mA, I_B=0.5mA		1.50	V
$V_{BE(SAT)}$	I_C=500mA, I_B=0.5mA		2.00	V
$V_{BE(ON)}$	V_{CE}=5.0V, I_C=50mA		1.75	V
h_{FE}	V_{CE}=5.0V, I_C=10mA	10K	100K	
h_{FE}	V_{CE}=5.0V, I_C=100mA	20K	200K	
h_{FE}	V_{CE}=5.0V, I_C=500mA	14K	140K	
f_T	V_{CE}=5.0V, IC=10mA, f=100MHz	130		MHz

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		7.0	pF
C_{ib}	V_{BE}=0.5V, I_C=0, f=1.0MHz		15	pF
N_F	V_{CE}=5.0V, I_C=1.0mA, R_S=100kΩ, f=1.0kHz TO 15.7kHz		10	dB

All dimensions in inches (mm).



LEAD CODE:

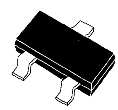
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R2

CMPT6428
CMPT6429

NPN SILICON TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT6428, CMPT6429 types are NPN Silicon Transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high gain amplifier applications.
Marking Codes are C1K and C1L Respectively.

MAXIMUM RATINGS (T_A=25°C)

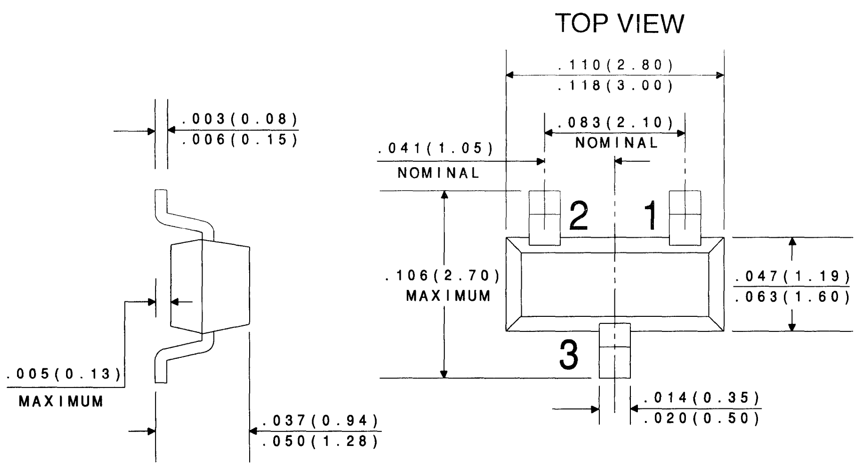
	SYMBOL	CMPT6428	CMPT6429	UNITS
Collector-Base Voltage	V_{CBO}	60	55	V
Collector-Emitter Voltage	V_{CEO}	50	45	V
Emitter-Base Voltage	V_{EBO}	6.0		V
Collector Current	I_C	200		mA
Power Dissipation	P_D	350		mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150		°C
Thermal Resistance	Θ_{JA}	357		°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

		CMPT6428		CMPT6429		
SYMBOL	**TEST CONDITIONS**	**MIN**	**MAX**	**MIN**	**MAX**	**UNITS**
I_{CBO}	V_{CB}=30V		10		10	nA
I_{CEO}	V_{CE}=30V		100		100	nA
I_{EBO}	V_{BE}=5.0V		10		10	nA
BV_{CBO}	I_C=100μA		60		55	V
BV_{CEO}	I_C=1.0mA		50		45	V
$V_{CE(SAT)}$	I_C=10mA, I_B=0.5mA		0.20		0.20	V
$V_{CE(SAT)}$	I_C=100mA, I_B=5.0mA		0.60		0.60	V
$V_{BE(ON)}$	V_{CE}=5.0V, I_C=1.0mA	0.56	0.66	0.56	0.66	V
h_{FE}	V_{CE}=5.0V, I_C=10μA	250		500		
h_{FE}	V_{CE}=5.0V, I_C=100μA	250	650	500	1250	
h_{FE}	V_{CE}=5.0V, I_C=1.0mA	250		500		
h_{FE}	V_{CE}=5.0V, I_C=10mA	250		500		
f_T	V_{CE}=5.0V, I_C=1.0mA, f=100MHz	100	700	100	700	MHz

SYMBOL	TEST CONDITIONS	CMPT6428 MIN	CMPT6428 MAX	CMPT6429 MIN	CMPT6429 MAX	UNITS
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		3.0		3.0	pF
C_{ib}	V_{BE}=0.5V, I_C=0, f=1.0MHz		8.0		8.0	pF

All dimensions in inches (mm).



LEAD CODE:

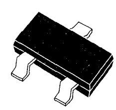
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R2

CMPT6517 NPN
CMPT6520 PNP

COMPLEMENTARY SILICON HIGH VOLTAGE TRANSISTORS



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT6517, CMPT6520 types are complementary silicon transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high voltage driver and amplifier applications.
Marking Codes are C1Z and C2Z Respectively.

MAXIMUM RATINGS ($T_A=25^oC$)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	350	V
Collector-Emitter Voltage	V_{CEO}	350	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	500	mA
Base Current	I_B	250	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	^oC
Thermal Resistance	Θ_{JA}	357	$^oC/W$

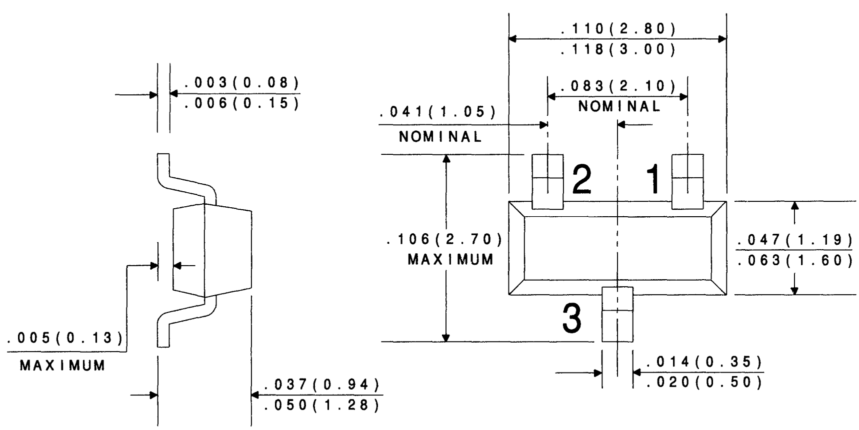
ELECTRICAL CHARACTERISTICS ($T_A=25^oC$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=250V		50	nA
I_{EBO}	V_{EB}=5.0V (CMPT6517)		50	nA
I_{EBO}	V_{EB}=4.0V (CMPT6520)		50	nA
BV_{CBO}	I_C=100μA	350		V
BV_{CEO}	I_C=1.0mA	350		V
BV_{EBO}	I_E=10μA (CMPT6517)	6.0		V
BV_{EBO}	I_E=10μA (CMPT6520)	5.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.30	V
$V_{CE(SAT)}$	I_C=20mA, I_B=2.0mA		0.35	V
$V_{CE(SAT)}$	I_C=30mA, I_B=3.0mA		0.50	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		1.0	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA		0.75	V
$V_{BE(SAT)}$	I_C=20mA, I_B=2.0mA		0.85	V

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$V_{BE(SAT)}$	I_C=30mA, I_B=3.0mA		0.90	V
$V_{BE(ON)}$	V_{CE}=10V, I_C=100mA		2.0	V
h_{FE}	V_{CE}=10V, I_C=1.0mA	20		
h_{FE}	V_{CE}=10V, I_C=10mA	30		
h_{FE}	V_{CE}=10V, I_C=30mA	30	200	
h_{FE}	V_{CE}=10V, I_C=50mA	20	200	
h_{FE}	V_{CE}=10V, I_C=100mA	15		
f_T	V_{CE}=20V, I_C=10mA, f=20MHz	40	200	MHz
C_{cb}	V_{CB}=20V, I_C=0, f=1.0MHz		6.0	pF
C_{eb}	V_{EB}=0.5V, I_E=0, f=1.0MHz (CMPT6517)		80	pF
C_{eb}	V_{EB}=0.5V, I_E=0, f=1.0MHz (CMPT6520)		100	pF

All dimensions in inches (mm).

TOP VIEW



DATA
SHEET

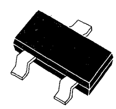
LEAD CODE:

1) BASE
2) EMITTER
3) COLLECTOR

R2

CMPT8099 NPN
CMPT8599 PNP

COMPLEMENTARY SILICON TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT8099, CMPT8599 types are Complementary Silicon Transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for general purpose audio amplifier applications.
Marking Codes are CKB and C2W Respectively.

MAXIMUM RATINGS (T_A=25°C)

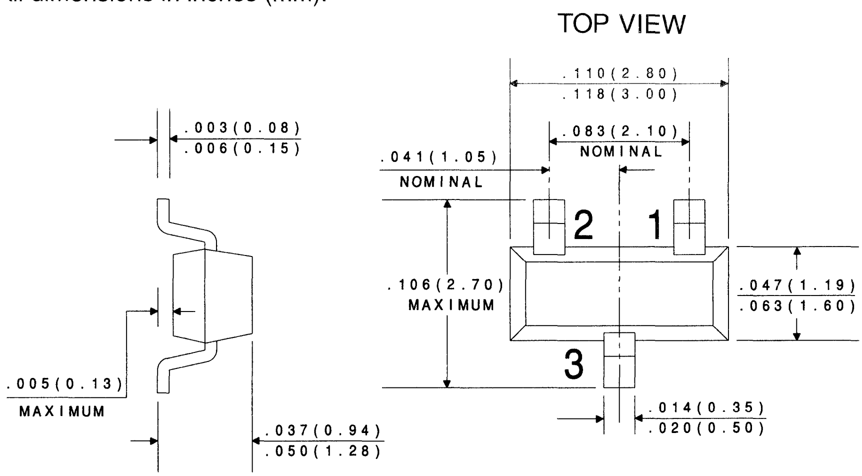
	SYMBOL	CMPT8099	CMPT8599	UNITS
Collector-Base Voltage	V_{CBO}	80	80	V
Collector-Emitter Voltage	V_{CEO}	80	80	V
Emitter-Base Voltage	V_{EBO}	6.0	5.0	V
Collector Current	I_C	500		mA
Power Dissipation	P_D	350		mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150		°C
Thermal Resistance	Θ_{JA}	357		°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

		CMPT8099		CMPT8599		
SYMBOL	TEST CONDITIONS	MIN	MAX	MIN	MAX	UNITS
I_{CBO}	V_{CB}=80V		0.1		0.1	μA
I_{EBO}	V_{BE}=6.0V		0.1		-	μA
I_{EBO}	V_{BE}=4.0V		-		0.1	μA
BV_{CBO}	I_C=100μA	80		80		V
BV_{CEO}	I_C=10mA	80		80		V
BV_{EBO}	I_E=10μA	6.0		5.0		V
$V_{CE(SAT)}$	I_C=100mA, I_B=5.0mA		0.4		0.4	V
$V_{CE(SAT)}$	I_C=100mA, I_B=10mA		0.3		0.3	V
$V_{BE(ON)}$	VCE=5.0V, I_C=10mA	0.6	0.8	0.6	0.8	V
h_{FE}	V_{CE}=5.0V, I_C=1.0mA	100	300	100	300	
h_{FE}	V_{CE}=5.0V, I_C=10mA	100		100		

SYMBOL	TEST CONDITIONS	CMPT8099 MIN	CMPT8099 MAX	CMPT8599 MIN	CMPT8599 MAX	UNITS
h_{FE}	V_{CE}=5.0V, I_C=100mA	75		75		
f_T	V_{CE}=5.0V, I_C=10mA, f=100MHz	150		150		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		6.0		4.5	pF
C_{ib}	V_{BE}=0.5V, I_C=0, f=1.0MHz		25		30	pF

All dimensions in inches (mm).



LEAD CODE:

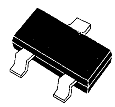
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R2

CMPTA06 NPN
CMPTA56 PNP

COMPLEMENTARY
SILICON TRANSISTORS



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPTA06, CMPTA56 types are complementary silicon transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose and switching applications.
Marking Codes are C1G, C2G Respectively.

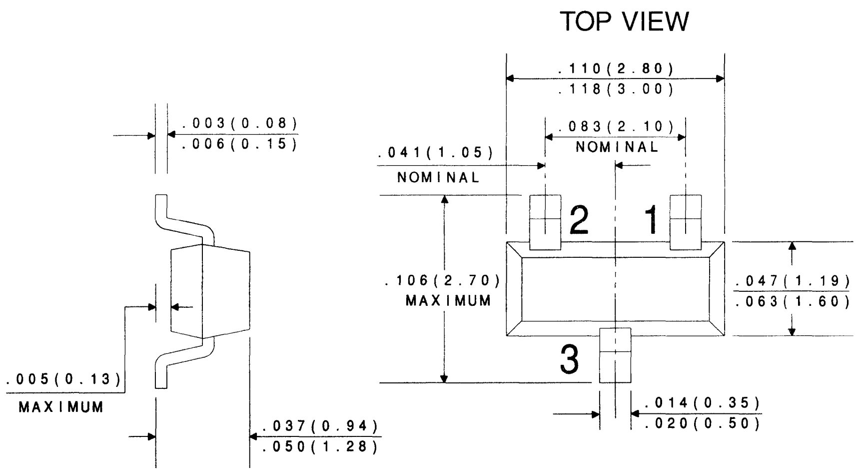
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	4.0	V
Collector Current	I_C	500	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=80V		100	nA
I_{CEO}	V_{CE}=60V		100	nA
BV_{CEO}	I_C=1.0mA	80		V
BV_{EBO}	I_E=100μA	4.0		V
$V_{CE(SAT)}$	I_C=100mA, I_B=10mA		0.25	V
$V_{BE(ON)}$	V_{CE}=1.0V, I_C=100mA		1.20	V
h_{FE}	V_{CE}=1.0V, I_C=10mA	50		
h_{FE}	V_{CE}=1.0V, I_C=100mA	50		
f_T	V_{CE}=2.0V, I_C=10mA, f=100MHz (CMPTA06)	100		MHz
f_T	V_{CE}=1.0V, I_C=100mA, f=100MHz(CMPTA56)	50		MHz

All dimensions in inches (mm).



LEAD CODE:

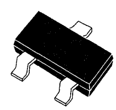
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R2

CMPTA13 CMPTA14 NPN
CMPTA63 CMPTA64 PNP

SILICON COMPLEMENTARY DARLINGTON TRANSISTORS



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPTA13, CMPTA63 series types are complementary silicon Darlington transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for applications requiring extremely high gain.
Marking Codes are C1M, C1N, C2U and C2V Respectively.

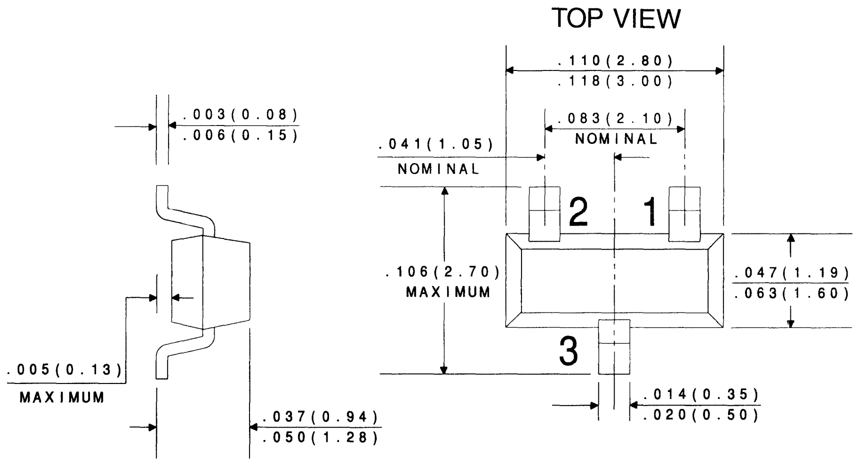
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CES}	30	V
Emitter-Base Voltage	V_{EBO}	10	V
Collector Current	I_C	500	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=30V		100	nA
I_{EBO}	V_{BE}=10V		100	nA
BV_{CES}	I_C=100µA	30		V
$V_{CE(SAT)}$	I_C=100mA, I_B=0.1mA		1.5	V
$V_{BE(ON)}$	V_{CE}=5.0V, I_C=100mA		2.0	V
h_{FE}	V_{CE}=5.0V, I_C=10mA (CMPTA13, CMPTA63)	5,000		
h_{FE}	V_{CE}=5.0V, I_C=10mA (CMPTA14, CMPTA64)	10,000		
h_{FE}	V_{CE}=5.0V, I_C=100mA (CMPTA13, CMPTA63)	10,000		
h_{FE}	V_{CE}=5.0V, I_C=100mA (CMPTA14, CMPTA64)	20,000		
f_T	V_{CE}=5.0V, I_C=10mA, f=100MHz	125		MHz

All Dimensions in inches (mm).



LEAD CODE:

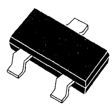
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R2

CMPTA27

SILICON DARLINGTON TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPTA27 type is a Silicon Darlington Transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for applications requiring extremely high gain.
Marking Code is FG.

MAXIMUM RATINGS (T_A=25°C)

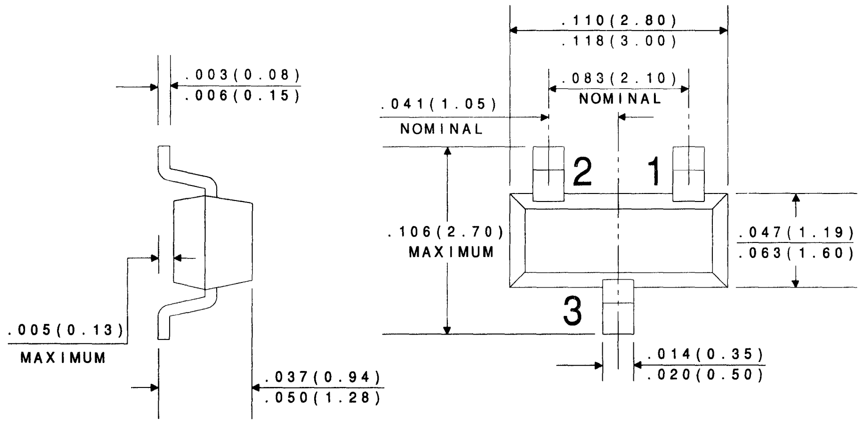
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CES}	60	V
Emitter-Base Voltage	V_{EBO}	10	V
Collector Current	I_C	500	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CES}	V_{CE}=50V		500	nA
I_{CBO}	V_{CB}=50V		100	nA
I_{EBO}	V_{BE}=10V		100	nA
BV_{CES}	I_C=100μA	60		V
BV_{CBO}	I_C=100μA	60		V
$V_{CE(SAT)}$	I_C=100mA, I_B=0.1mA		1.5	V
$V_{BE(ON)}$	V_{CE}=5.0V, I_C=100mA		2.0	V
h_{FE}	V_{CE}=5.0V, I_C=10mA	10,000		
h_{FE}	V_{CE}=5.0V, I_C=100mA	10,000		
f_T	V_{CE}=5.0V, I_C=10mA, f=100MHz	125		MHz

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

1) BASE
2) EMITTER
3) COLLECTOR

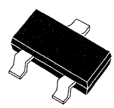
DATA SHEET

R2

Central™
Semiconductor Corp.

CMPTA29

HIGH VOLTAGE NPN SILICON DARLINGTON TRANSISTOR



SOT-23 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPTA29 is a Silicon NPN Darlington Transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for applications requiring extremely high voltage and high gain.
Marking Code is C29.

MAXIMUM RATINGS: (T_A=25°C)

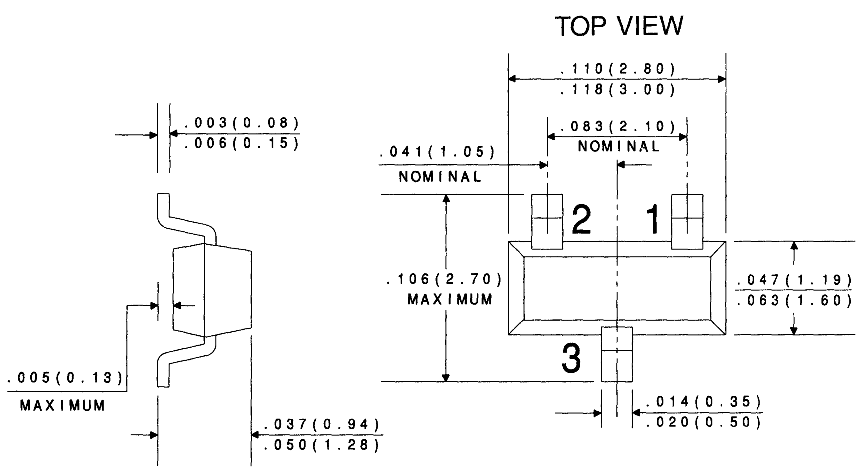
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CES}	100	V
Emitter-Base Voltage	V_{EBO}	12	V
Collector Current	I_C	500	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	357	°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CES}	V_{CE}=80V		500	nA
I_{CBO}	V_{CB}=80V		100	nA
I_{EBO}	V_{BE}=10V		100	nA
BV_{CES}	I_C=100μA	100		V
BV_{CBO}	I_C=100μA	100		V
BV_{EBO}	I_E=10μA	12		V
$V_{CE(SAT)}$	I_C=10mA, I_B=10μA		1.2	V
$V_{CE(SAT)}$	I_C=100mA, I_B=100mA		1.5	V
$V_{BE(ON)}$	V_{CE}=5.0V, I_C=100mA		2.0	V

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=5.0V, I_C=10mA	10,000		
h_{FE}	V_{CE}=5.0V, I_C=100mA	10,000		
f_T	V_{CE}=5.0V, I_C=10mA, f=100MHz	125		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		8.0	pF

All dimensions in inches (mm).



LEAD CODE:

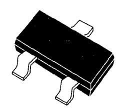
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R1

CMPTA42 NPN
CMPTA92 PNP

SILICON COMPLEMENTARY HIGH VOLTAGE TRANSISTOR



SOT-23 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPTA42, CMPTA92 types are complementary surface mount epoxy molded silicon planar epitaxial transistors designed for high voltage applications.
Marking Codes are C1D, C2D Respectively.

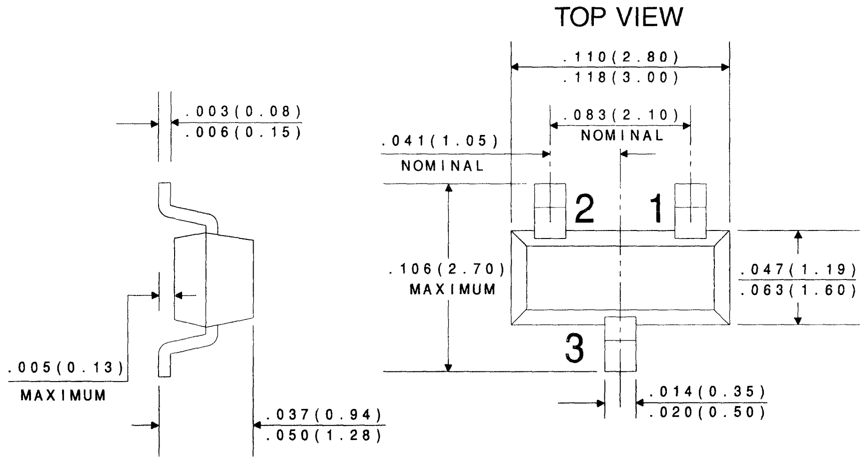
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL	CMPTA42	CMPTA92	UNITS
Collector-Base Voltage	V_{CBO}	300	300	V
Collector-Emitter Voltage	V_{CEO}	300	300	V
Emitter-Base Voltage	V_{EBO}	6.0	5.0	V
Collector Current	I_C	500		mA
Power Dissipation	P_D	350		mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150		°C
Thermal Resistance	Θ_{JA}	357		°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

		CMPTA42		CMPTA92		
SYMBOL	**TEST CONDITIONS**	**MIN**	**MAX**	**MIN**	**MAX**	**UNITS**
I_{CBO}	V_{CB}=200V		100		250	nA
I_{EBO}	V_{BE}=6.0V		100		-	nA
I_{EBO}	V_{BE}=3.0V		-		100	nA
BV_{CBO}	I_C=100μA	300		300		V
BV_{CEO}	I_C=1.0mA	300		300		V
BV_{EBO}	I_E=100μA	6.0		5.0		V
$V_{CE(SAT)}$	I_C=20mA, I_B=2.0mA		0.5		0.5	V
$V_{BE(SAT)}$	I_C=20mA, I_B=2.0mA		0.9		0.9	V
h_{FE}	V_{CE}=10V, I_C=1.0mA	25		25		
h_{FE}	V_{CE}=10V, I_C=10mA	40		40		
h_{FE}	V_{CE}=10V, I_C=30mA	40		25		
f_T	V_{CE}=20V, I_C=10mA, f=100MHz	50		50		MHz
C_{ob}	V_{CB}=20V, I_E=0, f=1.0MHz		3.0		6.0	pF

All dimensions in inches (mm).



LEAD CODE:

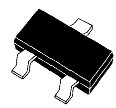
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R2

CMPTA44

NPN SILICON EXTREMELY HIGH VOLTAGE TRANSISTOR



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPTA44 type is a surface mount epoxy molded silicon planar epitaxial transistors designed for extremely high voltage applications.
Marking Code is C3Z.

MAXIMUM RATINGS (T_A=25^{o}C)

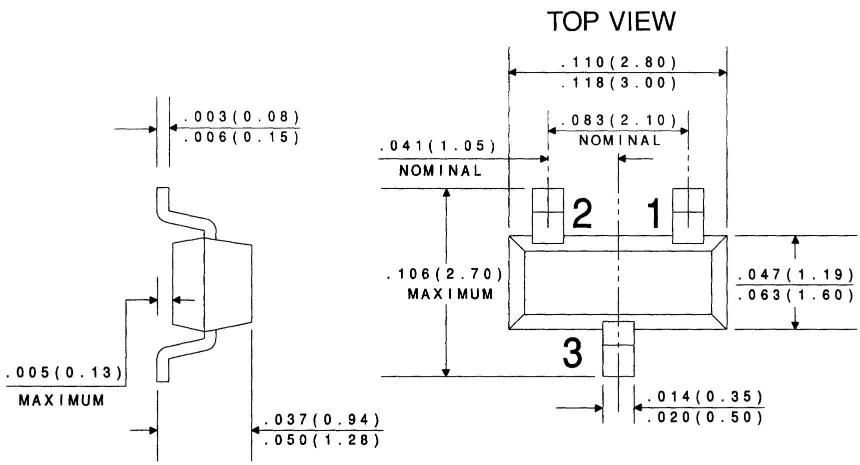
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	450	V
Collector-Emitter Voltage	V_{CEO}	400	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	300	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	^{o}C
Thermal Resistance	Θ_{JA}	357	^{o}C/W

ELECTRICAL CHARACTERISTICS (T_A=25^{o}C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=400V		100	nA
I_{CES}	V_{CE}=400V		500	nA
I_{EBO}	V_{BE}=4.0V		100	nA
BV_{CBO}	I_C=100μA	450		V
BV_{CES}	I_C=100μA	450		V
BV_{CEO}	I_C=1.0mA	400		V
BV_{EBO}	I_E=10μA	6.0		V
$V_{CE(SAT)}$	I_C=1.0mA, I_B=0.1mA		0.40	V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.50	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		0.75	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA		0.75	V
h_{FE}	V_{CE}=10V, I_C=1.0mA	40		
h_{FE}	V_{CE}=10V, I_C=10mA	50	200	

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=10V, I_C=50mA	45		
h_{FE}	V_{CE}=10V, I_C=100mA	20		
f_T	V_{CE}=10V, I_C=10mA, f=10MHz	20		MHz
C_{ob}	V_{CB}=20V, I_E=0, f=1.0MHz		7.0	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		130	pF

All dimensions in inches (mm).



LEAD CODE:

1) BASE
2) EMITTER
3) COLLECTOR

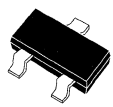
DATA SHEET

R2

Central™
Semiconductor Corp.

CMPTH10

NPN SILICON RF TRANSISTOR



SOT-23 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPTH10 type is an NPN silicon RF transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for low noise UHF/VHF amplifier and high output oscillator applications.
Marking code is C3E.

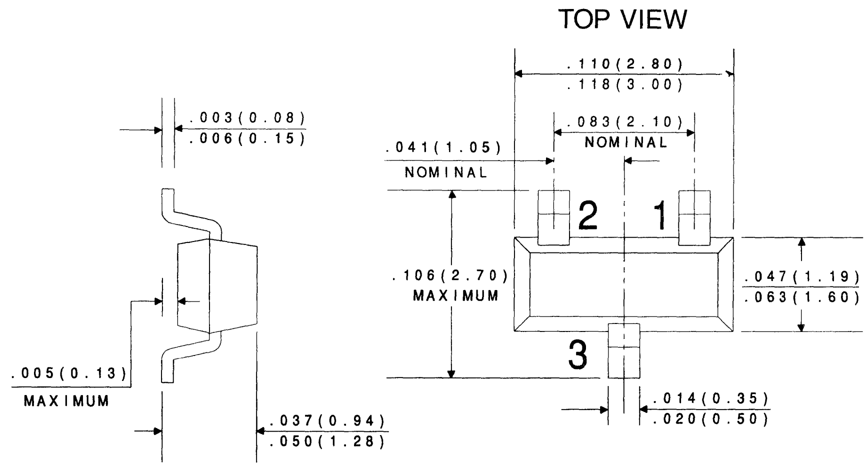
MAXIMUM RATINGS (T_A=25^{O}C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CEO}	25	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	^{O}C
Thermal Resistance	Θ_{JA}	357	^{O}C/W

ELECTRICAL CHARACTERISTICS (T_A=25^{O}C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=25V		100	nA
I_{EBO}	V_{EB}=2.0V		100	nA
BV_{CBO}	I_C=100μA	30		V
BV_{CEO}	I_C=1.0mA	25		V
BV_{EBO}	I_E=10μA	3.0		V
$V_{CE(SAT)}$	I_C=4.0mA, I_B=0.4mA		0.50	V
$V_{BE(ON)}$	V_{CE}=10V, I_B=4.0mA		0.95	V
h_{FE}	V_{CE}=10V, I_C=4.0mA	60		
f_T	V_{CE}=10V, I_C=4.0mA, f=100MHz	650		MHz
C_{cb}	V_{CB}=10V, I_E=0, f=1.0MHz		0.70	pF
C_{rb}	V_{CB}=10V, I_E=0, f=1.0MHz		0.65	pF
$rb'C_c$	V_{CB}=10V, I_C=4.0mA, f=31.8MHz		9.0	ps

All dimensions in inches (mm).



LEAD CODE:

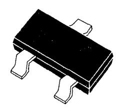
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R2

CMPZ4614
THRU
CMPZ4627

350mW LOW NOISE ZENER DIODE
5% TOLERANCE



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMIONDUCTOR CMPZ4614 Series Silicon Zener Diode is high quality voltage regulator designed for low leakage, low current and low noise applications.

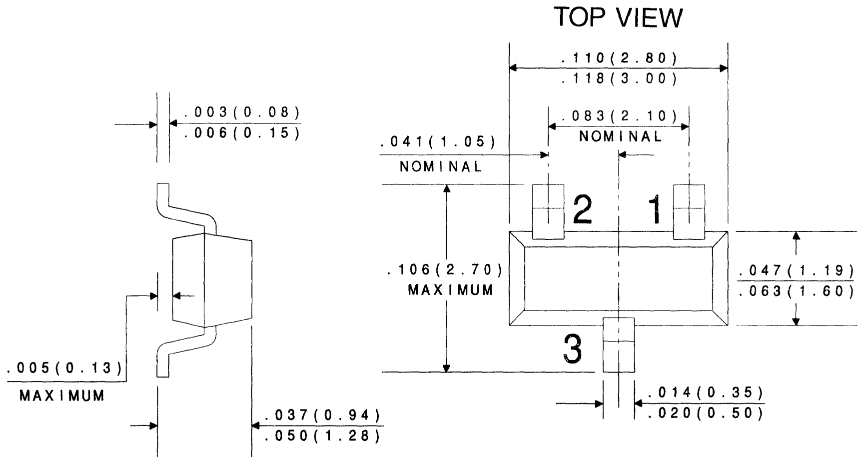
ELECTRICAL CHARACTERISTICS

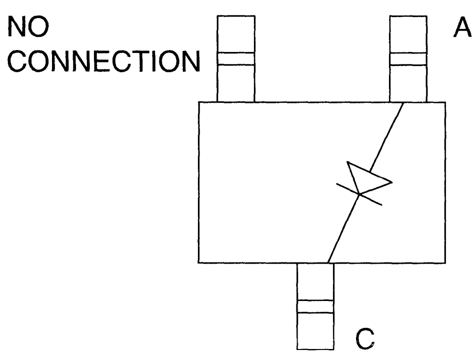
(T_A=25^{o}C) V_F=1.0 MAX @ I_F=200mA FOR ALL TYPES.

TYPE NO.	ZENER VOLTAGE V_Z @ I_{ZT}	TEST CURRENT I_{ZT}	MAXIMUM ZENER IMPEDANCE Z_{ZT} @ I_{ZT}	MAXIMUM REVERSE LEAKAGE CURRENT I_R @ V_R		MAXIMUM ZENER CURRENT I_{ZM}	MAXIMUM NOISE DENSITY N_D @ I_{ZT}=250μA
	VOLTS	μA	Ω	μA	VOLTS	mA	$\mu V/\sqrt{Hz}$
CMPZ4614*	1.8	250	1200	7.5	1.0	120	1.0
CMPZ4615*	2.0	250	1250	5.0	1.0	110	1.0
CMPZ4616*	2.2	250	1300	4.0	1.0	100	1.0
CMPZ4617*	2.4	250	1400	2.0	1.0	95	1.0
CMPZ4618*	2.7	250	1500	1.0	1.0	90	1.0
CMPZ4619*	3.0	250	1600	0.8	1.0	85	1.0
CMPZ4620*	3.3	250	1650	7.5	1.5	80	1.0
CMPZ4621*	3.6	250	1700	7.5	2.0	75	1.0
CMPZ4622*	3.9	250	1650	5.0	2.0	70	1.0
CMPZ4623*	4.3	250	1600	4.0	2.0	65	1.0
CMPZ4624*	4.7	250	1550	10	3.0	60	1.0
CMPZ4625*	5.1	250	1500	10	3.0	55	2.0
CMPZ4626*	5.6	250	1400	10	4.0	50	4.0
CMPZ4627*	6.2	250	1200	10	5.0	45	5.0

* Available on special order only, please consult factory.

All dimensions in inches (mm).



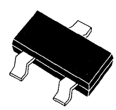


DATA SHEET

R2

CMPZ4678
THRU
CMPZ4717

350mW LOW LEVEL ZENER DIODE
5% TOLERANCE



SOT-23 Case

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPZ4678 Series Silicon Zener Diode is a high quality voltage regulator designed for applications requiring an extremely low operating current and low leakage.

ELECTRICAL CHARACTERISTICS
(T_A=25^{o}C) V_F=1.5V MAX @ I_F=100mA FOR ALL TYPES.

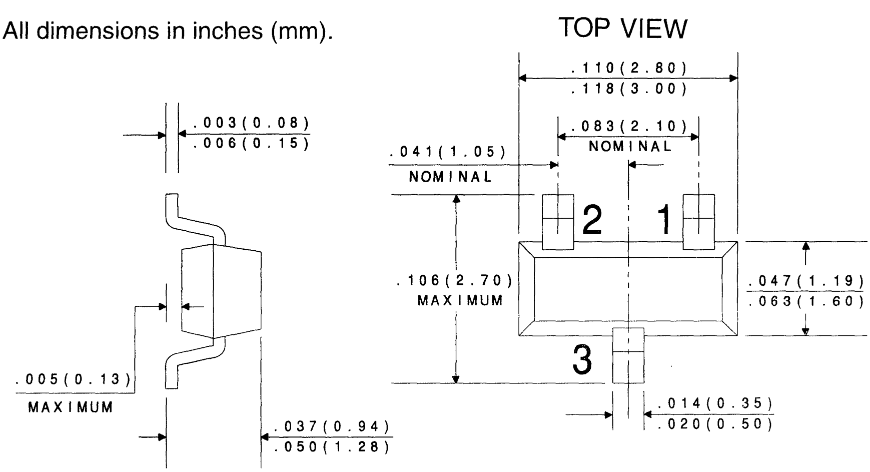
Type No.	Nominal Zener Voltage V_Z @ I_{ZT}	Test Current I_{ZT}	MAXIMUM REVERSE LEAKAGE CURRENT I_R @ V_R		Maximum Voltage Change** ΔV_Z	Maximum Zener Current I_{ZM}
	Volts	μA	μA	Volts	Volts	mA
CMPZ4678*	1.8	50	7.5	1.0	0.70	120.0
CMPZ4679*	2.0	50	5.0	1.0	0.70	110.0
CMPZ4680*	2.2	50	4.0	1.0	0.75	100.0
CMPZ4681*	2.4	50	2.0	1.0	0.80	95.0
CMPZ4682*	2.7	50	1.0	1.0	0.85	90.0
CMPZ4683*	3.0	50	0.8	1.0	0.90	85.0
CMPZ4684*	3.3	50	7.5	1.5	0.95	80.0
CMPZ4685*	3.6	50	7.5	2.0	0.95	75.0
CMPZ4686*	3.9	50	5.0	2.0	0.97	70.0
CMPZ4687*	4.3	50	4.0	2.0	0.99	65.0
CMPZ4688*	4.7	50	10	3.0	0.99	60.0
CMPZ4689*	5.1	50	10	3.0	0.97	55.0
CMPZ4690*	5.6	50	10	4.0	0.96	50.0
CMPZ4691*	6.2	50	10	5.0	0.95	45.0
CMPZ4692*	6.8	50	10	5.1	0.90	35.0
CMPZ4693*	7.5	50	10	5.7	0.75	31.8
CMPZ4694*	8.2	50	1.0	6.2	0.50	29.0
CMPZ4695*	8.7	50	1.0	6.6	0.10	27.4
CMPZ4696*	9.1	50	1.0	6.9	0.08	26.2
CMPZ4697*	10	50	1.0	7.6	0.10	24.8
CMPZ4698*	11	50	0.05	8.4	0.11	21.6
CMPZ4699*	12	50	0.05	9.1	0.12	20.4

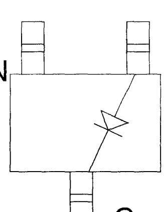
* Available on special order only, please consult factory.
** ΔV_Z=V_Z@100μA MINUS V_Z @ 10μA.

Type No.	Nominal Zener Voltage V_Z @ I_{ZT} Volts	Test Current I_{ZT} µA	MAXIMUM REVERSE LEAKAGE CURRENT I_R @ V_R µA	Volts	Maximum Voltage Change** ΔV_Z Volts	Maximum Zener Current I_{ZM} mA
CMPZ4700*	13	50	0.05	9.8	0.13	19.0
CMPZ4701*	14	50	0.05	10.6	0.14	17.5
CMPZ4702*	15	50	0.05	11.4	0.15	16.3
CMPZ4703*	16	50	0.05	12.1	0.16	15.4
CMPZ4704*	17	50	0.05	12.9	0.17	14.5
CMPZ4705*	18	50	0.05	13.6	0.18	13.2
CMPZ4706*	19	50	0.05	14.4	0.19	12.5
CMPZ4707*	20	50	0.01	15.2	0.20	11.9
CMPZ4708*	22	50	0.01	16.7	0.22	10.8
CMPZ4709*	24	50	0.01	18.2	0.24	9.9
CMPZ4710*	25	50	0.01	19.0	0.25	9.5
CMPZ4711*	27	50	0.01	20.4	0.27	8.8
CMPZ4712*	28	50	0.01	21.2	0.28	8.5
CMPZ4713*	30	50	0.01	22.8	0.30	7.9
CMPZ4714*	33	50	0.01	25.0	0.33	7.2
CMPZ4715*	36	50	0.01	27.3	0.36	6.6
CMPZ4716*	39	50	0.01	29.6	0.39	6.1
CMPZ4717*	43	50	0.01	32.6	0.43	5.5

* Available on special order only, please consult factory.
** $\Delta V_Z = V_Z$@100µA MINUS V_Z @ 10µA.

All dimensions in inches (mm).



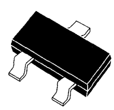


DATA SHEET

R2

CMPZ5221B
THRU
CMPZ5261B

350 mW ZENER DIODE
5% TOLERANCE



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPZ5221B Series Silicon Zener Diode is a high quality voltage regulator for use in industrial, commercial, entertainment and computer applications. Higher voltage devices are available on special order.

ABSOLUTE MAXIMUM RATINGS	**SYMBOL**		**UNITS**
Power Dissipation (@ T_A=25°C)	P_D	350	mW
Operating and Storage Temperature	T_J,T_{stg}	-65 to + 175	°C

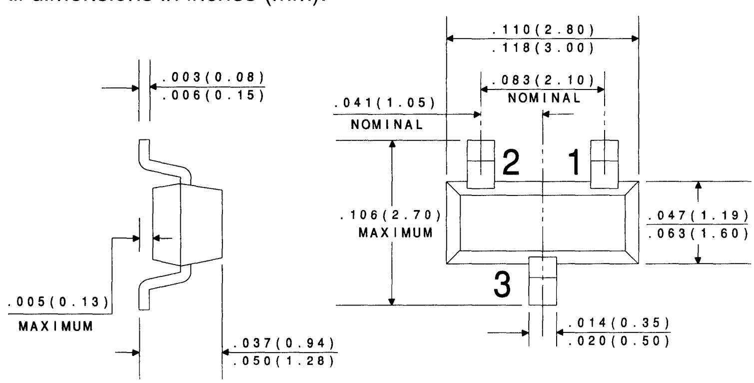
ELECTRICAL CHARACTERISTICS (T_A=25°C), V_F=0.9V MAX @ I_F = 10mA FOR ALL TYPES.

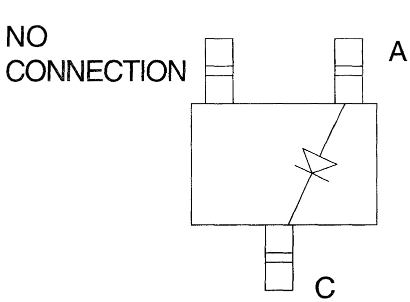
TYPE	ZENER VOLTAGE V_Z @ I_{ZT}			TEST CURRENT	MAXIMUM ZENER IMPEDANCE			MAXIMUM REVERSE CURRENT		MAX. TEMP. COEFF.	MARKING CODE
	MIN	NOM	MAX	I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}		I_R @ V_R		ΘV_Z	
	VOLTS	VOLTS	VOLTS	mA	Ω	Ω	mA	µA	VOLTS	%/°C	
CMPZ5221B	2.280	2.4	2.520	20	30	1200	0.25	100	1.0	-0.085	18A
CMPZ5222B	2.375	2.5	2.625	20	30	1250	0.25	100	1.0	-0.085	18B
CMPZ5223B	2.565	2.7	2.835	20	30	1300	0.25	75	1.0	-0.080	18C
CMPZ5224B	2.660	2.8	2.940	20	30	1400	0.25	75	1.0	-0.080	18D
CMPZ5225B	2.850	3.0	3.150	20	29	1600	0.25	50	1.0	-0.075	18E
CMPZ5226B	3.135	3.3	3.465	20	28	1600	0.25	25	1.0	-0.070	C8A
CMPZ5227B	3.420	3.6	3.780	20	24	1700	0.25	15	1.0	-0.065	C8B
CMPZ5228B	3.705	3.9	4.095	20	23	1900	0.25	10	1.0	-0.060	C8C
CMPZ5229B	4.085	4.3	4.515	20	22	2000	0.25	5.0	1.0	±0.055	C8D
CMPZ5230B	4.465	4.7	4.935	20	19	1900	0.25	5.0	2.0	±0.030	C8E
CMPZ5231B	4.845	5.1	5.355	20	17	1600	0.25	5.0	2.0	±0.030	C8F
CMPZ5232B	5.320	5.6	5.880	20	11	1600	0.25	5.0	3.0	+0.038	C8G
CMPZ5233B	5.700	6.0	6.300	20	7.0	1600	0.25	5.0	3.5	+0.038	C8H
CMPZ5234B	5.890	6.2	6.510	20	7.0	1000	0.25	5.0	4.0	+0.045	C8J
CMPZ5235B	6.460	6.8	7.140	20	5.0	750	0.25	3.0	5.0	+0.050	C8K
CMPZ5236B	7.125	7.5	7.875	20	6.0	500	0.25	3.0	6.0	+0.058	C8L
CMPZ5237B	7.790	8.2	8.610	20	8.0	500	0.25	3.0	6.5	+0.062	C8M
CMPZ5238B	8.265	8.7	9.135	20	8.0	600	0.25	3.0	6.5	+0.065	C8N
CMPZ5239B	8.645	9.1	9.555	20	10	600	0.25	3.0	7.0	+0.068	C8P
CMPZ5240B	9.500	10	10.50	20	17	600	0.25	3.0	8.0	+0.075	C8Q
CMPZ5241B	10.45	11	11.55	20	22	600	0.25	2.0	8.4	+0.076	C8R
CMPZ5242B	11.40	12	12.60	20	30	600	0.25	1.0	9.1	+0.077	C8S
CMPZ5243B	12.35	13	13.65	9.5	13	600	0.25	0.5	9.9	+0.079	C8T
CMPZ5244B	13.30	14	14.70	9.0	15	600	0.25	0.1	10	+0.082	C8U

TYPE	ZENER VOLTAGE V_Z @ I_{ZT}			TEST CURRENT	MAXIMUM ZENER IMPEDANCE			MAXIMUM REVERSE CURRENT		MAX. TEMP. COEFF.	MARKING CODE
	MIN	NOM	MAX	I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}		I_R @ V_R		ΘV_Z	
	VOLTS	VOLTS	VOLTS	mA	Ω	Ω	mA	µA	VOLTS	%/°C	
CMPZ5245B	14.25	15	15.75	8.5	16	600	0.25	0.1	11	+0.082	C8V
CMPZ5246B	15.20	16	16.80	7.8	17	600	0.25	0.1	12	+0.083	C8W
CMPZ5247B	16.15	17	17.85	7.4	19	600	0.25	0.1	13	+0.084	C8X
CMPZ5248B	17.10	18	18.90	7.0	21	600	0.25	0.1	14	+0.085	C8Y
CMPZ5249B	18.05	19	19.95	6.6	23	600	0.25	0.1	14	+0.086	C8Z
CMPZ5250B	19.00	20	21.00	6.2	25	600	0.25	0.1	15	+0.086	81A
CMPZ5251B	20.90	22	23.10	5.6	29	600	0.25	0.1	17	+0.087	81B
CMPZ5252B	22.80	24	25.20	5.2	33	600	0.25	0.1	18	+0.088	81C
CMPZ5253B	23.75	25	26.25	5.0	35	600	0.25	0.1	19	+0.089	81D
CMPZ5254B	25.65	27	28.35	4.6	41	600	0.25	0.1	21	+0.090	81E
CMPZ5255B	26.60	28	29.40	4.5	44	600	0.25	0.1	21	+0.091	81F
CMPZ5256B	28.50	30	31.50	4.2	49	600	0.25	0.1	23	+0.091	81G
CMPZ5257B	31.35	33	34.65	3.8	58	700	0.25	0.1	25	+0.092	81H
CMPZ5258B	34.20	36	37.80	3.4	70	700	0.25	0.1	27	+0.093	81J
CMPZ5259B	37.05	39	40.95	3.2	80	800	0.25	0.1	30	+0.094	81K
CMPZ5260B	40.85	43	45.15	3.0	93	900	0.25	0.1	33	+0.095	81L
CMPZ5261B	44.65	47	49.35	2.7	105	1000	0.25	0.1	36	+0.095	81M

All dimensions in inches (mm).

TOP VIEW



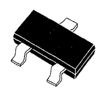


DATA SHEET

R2

CMPZDA3V6 THRU CMPZDA33V

DUAL ZENER DIODE
3.6 VOLTS THRU 33 VOLTS
350mW, 5% TOLERANCE



SOT-23 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

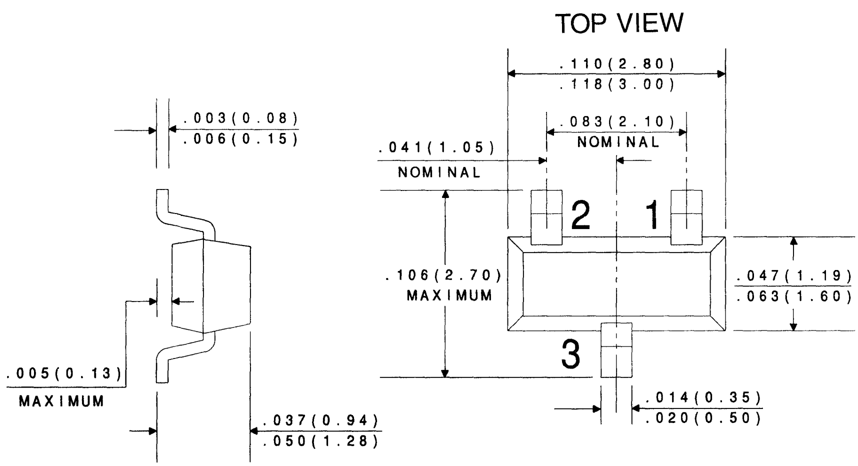
The CENTRAL SEMICONDUCTOR CMPZDA3V6 Series Silicon Dual Zener Diode is a high quality voltage regulator, connected in a common anode configuration, for use in industrial, commercial, entertainment and computer applications.

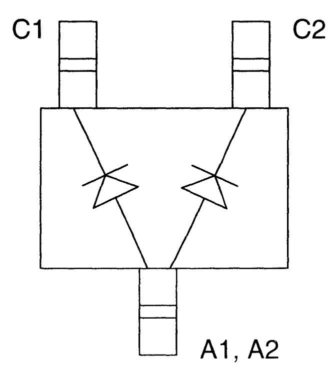
ABSOLUTE MAXIMUM RATINGS	SYMBOL		UNIT
Power Dissipation (@T_A=25^{o}C)	P_D	350	mW
Operating and Storage Temperature	T_J,T_{stg}	-65 to +150	^{o}C
Thermal Resistance	Θ_{JA}	357	^{o}C/W

ELECTRICAL CHARACTERISTICS (T_A=25^{o}C), V_F=0.9V MAX @ I_F=10mA FOR ALL TYPES.

TYPE NO.	ZENER VOLTAGE V_Z @ I_{ZT}		TEST CURRENT	MAXIMUM ZENER IMPEDANCE			MAXIMUM REVERSE CURRENT		MAXIMUM ZENER CURRENT	MAXIMUM ZENER VOLTAGE TEMPERATURE COEFFICIENT	MARKING CODE
	MIN	MAX	I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}		I_R @ V_R		I_{ZM}	ΘV_Z	
	VOLTS	VOLTS	mA	Ω	Ω	mA	µA	VOLTS	mA	%/^{o}C	
CMPZDA3V6	3.4	3.8	5.0	95	600	1.0	2.0	1.0	45	-0.06	WW7
CMPZDA3V9	3.7	4.1	5.0	90	600	1.0	2.0	1.0	43	-0.06	WW8
CMPZDA4V3	4.0	4.6	5.0	90	600	1.0	1.0	1.0	40	-0.05	WW9
CMPZDA4V7	4.4	5.0	5.0	80	500	1.0	3.0	2.0	38	-0.03	ZZ1
CMPZDA5V1	4.8	5.4	5.0	60	480	1.0	2.0	2.0	35	0.02	ZZ2
CMPZDA5V6	5.2	6.0	5.0	40	400	1.0	1.0	2.0	32	0.03	ZZ3
CMPZDA6V2	5.8	6.6	5.0	10	150	1.0	3.0	4.0	28	0.04	ZZ4
CMPZDA6V8	6.4	7.2	5.0	15	80	1.0	2.0	4.0	25	0.05	ZZ5
CMPZDA7V5	7.0	7.9	5.0	15	80	1.0	1.0	5.0	23	0.05	ZZ6
CMPZDA8V2	7.7	8.7	5.0	15	80	1.0	0.7	5.0	21	0.06	ZZ7
CMPZDA9V1	8.5	9.6	5.0	15	100	1.0	0.5	6.0	18	0.06	ZZ8
CMPZDA10V	9.4	10.6	5.0	20	150	1.0	0.2	7.0	16	0.07	ZZ9
CMPZDA11V	10.4	11.6	5.0	20	150	1.0	0.1	8.0	15	0.07	YY1
CMPZDA12V	11.4	12.7	5.0	25	150	1.0	0.1	8.0	13	0.07	YY2
CMPZDA13V	12.4	14.1	5.0	30	170	1.0	0.1	8.0	12	0.08	YY3
CMPZDA15V	13.8	15.6	5.0	30	200	1.0	0.05	10.5	11	0.08	YY4
CMPZDA16V	15.3	17.1	5.0	40	200	1.0	0.05	11.2	10	0.08	YY5
CMPZDA18V	16.8	19.1	5.0	45	225	1.0	0.05	12.6	9.2	0.08	YY6
CMPZDA20V	18.8	21.2	5.0	55	225	1.0	0.05	14.0	8.3	0.08	YY7
CMPZDA22V	20.8	23.3	5.0	55	250	1.0	0.05	15.4	7.6	0.09	YY8
CMPZDA24V	22.8	25.6	5.0	70	250	1.0	0.05	16.8	7.0	0.09	YY9
CMPZDA27V	25.1	28.9	2.0	80	300	0.5	0.05	18.9	6.2	0.09	W10
CMPZDA30V	28.0	32.0	2.0	80	300	0.5	0.05	21.0	5.6	0.09	W11
CMPZDA33V	31.0	35.0	2.0	80	325	0.5	0.05	23.1	5.0	0.09	W12

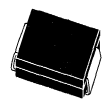
All dimensions in inches (mm).





CMR1-02
CMR1-04
CMR1-06
CMR1-10

GENERAL PURPOSE RECTIFIER
1.0 AMP, 200 THRU 1,000 VOLTS



SMB CASE

Central™
Semiconductor Corp.

FEATURES:

- LOW COST
- HIGH RELIABILITY
- SPECIAL SELECTIONS AVAILABLE
- GLASS PASSIVATED CHIP
- SUPERIOR LOT TO LOT CONSISTENCY
- "C" BEND CONSTRUCTION PROVIDES STRAIN RELIEF WHEN MOUNTED ON PC BOARD

DESCRIPTION: The CENTRAL SEMICONDUCTOR 1.0 Amp Surface Mount Silicon Rectifier is a high quality, well constructed, highly reliable component designed for use in all types of commercial, industrial, entertainment, computer, and automotive applications. To order devices on 12mm Tape and Reel (3000/13" Reel), add TR13 suffix to part number.

MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

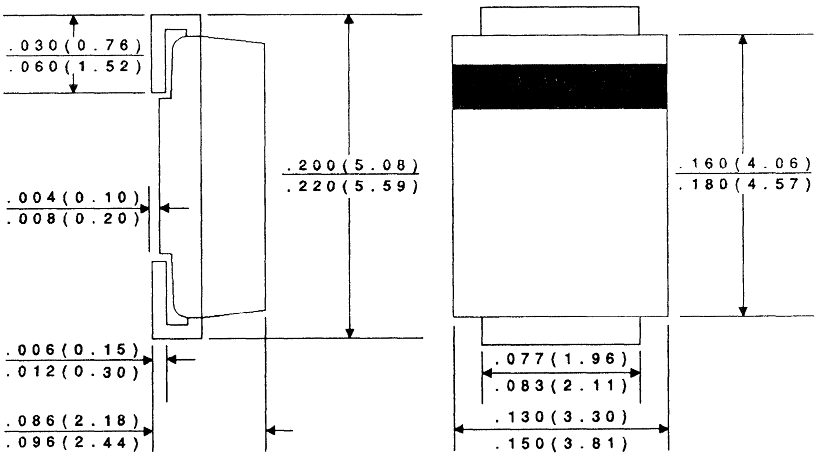
	SYMBOL	**CMR1-02**	**CMR1-04**	**CMR1-06**	**CMR1-10**	**UNITS**
Peak Repetitive Reverse Voltage	V_{RRM}	200	400	600	1000	V
DC Blocking Voltage	V_R	200	400	600	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	140	280	420	700	V
Average Forward Current(T_A=75°C)	I_O		1.0			A
Peak Forward Surge Current (8.3ms)	I_{FSM}		30			A
Operating and Storage Junction Temperature	T_J, T_{stg}		-65 to +175			°C
Thermal Resistance	Θ_{JL}		20			°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	**TEST CONDITIONS**	**MIN**	**MAX**	**UNITS**
V_F	I_F=1.0A		1.1	V
I_R	V_R=Rated V_{RRM}		10	μA
I_R	V_R=Rated V_{RRM}, T_A=125°C		50	μA

All dimensions in inches (mm).

TOP VIEW



Marking Codes:

DEVICE	MARKING CODE
CMR1-02	C02
CMR1-04	C04
CMR1-06	C06
CMR1-10	C10

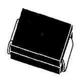
R2

CMR1-02M
CMR1-04M
CMR1-06M
CMR1-10M

NEW

GENERAL PURPOSE RECTIFIER
1.0 AMP, 200 THRU 1,000 VOLTS

SUPER™ mini



SMA CASE

Central™
Semiconductor Corp.

FEATURES:

- SUPER MINIATURE CASE
- SPECIAL SELECTIONS AVAILABLE
- LOW COST
- SUPERIOR LOT TO LOT CONSISTENCY
- HIGH RELIABILITY
- "C" BEND CONSTRUCTION PROVIDES STRAIN RELIEF WHEN MOUNTED ON PC BOARD
- GLASS PASSIVATED CHIP

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 1.0 Amp Surface Mount Silicon Rectifier is a high quality, well constructed, highly reliable component designed for use in all types of commercial, industrial, entertainment, computer, and automotive applications where small size is required. The SMA case occupies 30% less board space than the SMB case. To order devices on 12mm Tape and Reel (5000/13" Reel), add TR13 suffix to part number.

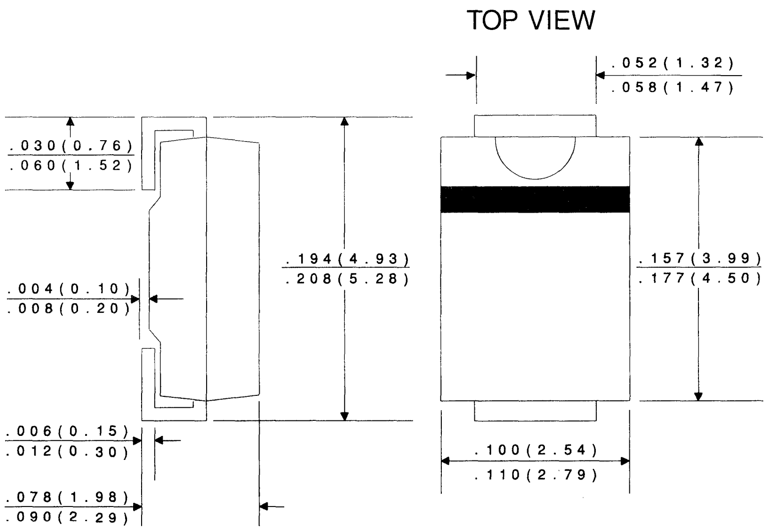
MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

	SYMBOL	CMR1-02M	CMR1-04M	CMR1-06M	CMR1-10M	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	200	400	600	1000	V
DC Blocking Voltage	V_R	200	400	600	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	140	280	420	700	V
Average Forward Current (T_L=100°C)	I_O		1.0			A
Peak Forward Surge Current (8.3ms)	I_{FSM}		30			A
Operating and Storage Junction Temperature	T_J, T_{stg}		-65 to +150			°C
Thermal Resistance	Θ_{JL}		30			°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
V_F	I_F=1.0A			1.1	V
I_R	V_R=Rated V_{RRM}			5.0	μA
I_R	V_R=Rated V_{RRM}, T_A=125°C			50	μA
C_J	V_R=4.0V, f=1.0MHz		8.0		pF

All dimensions in inches (mm).



DEVICE	MARKING CODE
CMR1-02M	C02M
CMR1-04M	C04M
CMR1-06M	C06M
CMR1-10M	C10M

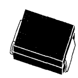
DATA SHEET

CMR1F-02M
CMR1F-04M
CMR1F-06M
CMR1F-10M

NEW

FAST RECOVERY RECTIFIER
1.0 AMP, 200 THRU 1,000 VOLTS

SUPER™ mini



SMA CASE

Central™
Semiconductor Corp.

FEATURES:

- SUPER MINIATURE CASE
- SPECIAL SELECTIONS AVAILABLE
- LOW COST
- SUPERIOR LOT TO LOT CONSISTENCY
- HIGH RELIABILITY
- "C" BEND CONSTRUCTION PROVIDES STRAIN RELIEF WHEN MOUNTED ON PC BOARD
- GLASS PASSIVATED CHIP

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 1.0 Amp Surface Mount Fast Recovery Silicon Rectifier is a high quality, well constructed, highly reliable component designed for use in all types of commercial, industrial, entertainment, computer, and automotive applications where small size is required. The SMA case occupies 30% less board space than the SMB case. To order devices on 12mm Tape and Reel (5000/13" Reel), add TR13 suffix to part number.

MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

	SYMBOL	CMR1F -02M	CMR1F -04M	CMR1F -06M	CMR1F -10M	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	200	400	600	1000	V
DC Blocking Voltage	V_R	200	400	600	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	140	280	420	700	V
Average Forward Current (T_L=120°C)	I_O		1.0			A
Peak Forward Surge Current (8.3ms)	I_{FSM}		30			A
Operating and Storage Junction Temperature	T_J,T_{stg}		-65 to +150			°C
Thermal Resistance	Θ_{JL}		30			°C/W

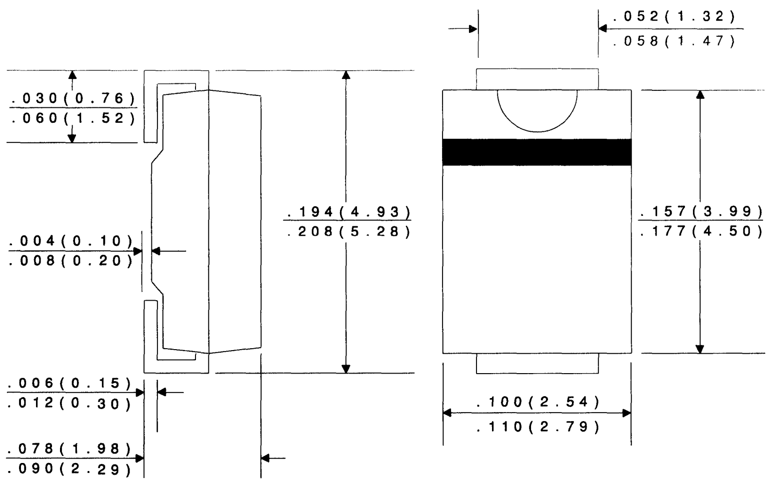
ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_R	V_R=Rated V_{RRM}			5.0	µA
I_R	V_R=Rated V_{RRM}, T_A=125°C			200	µA
V_F	I_F=1.0A			1.3	V
C_J	V_R=4.0V, f=1.0MHz		15		pF

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
t_{rr}	I_F=0.5A, I_R=1.0A, Recover to 0.25A (CMR1F-02M, -04M)			150	ns
t_{rr}	I_F=0.5A, I_R=1.0A, Recover to 0.25A (CMR1F-06M)			250	ns
t_{rr}	I_F=0.5A, I_R=1.0A, Recover to 0.25A (CMR1F-10M)			500	ns

All dimensions in inches (mm).

TOP VIEW

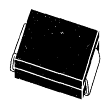


DEVICE	MARKING CODE
CMR1F-02M	CF02M
CMR1F-04M	CF04M
CMR1F-06M	CF06M
CMR1F-10M	CF10M

DATA SHEET

CMR1U-01
CMR1U-02
CMR1U-04
CMR1U-06

ULTRA FAST RECOVERY RECTIFIER
1.0 AMP, 100 THRU 600 VOLTS



SMB CASE

Central™
Semiconductor Corp.

FEATURES:

- LOW COST
- SPECIAL SELECTIONS AVAILABLE
- HIGH RELIABILITY
- SUPERIOR LOT TO LOT CONSISTENCY
- GLASS PASSIVATED CHIP
- "C" BEND CONSTRUCTION PROVIDES STRAIN RELIEF WHEN MOUNTED ON PC BOARD

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 1.0 Amp Surface Mount Silicon Ultra Fast Recovery Rectifier is a high quality, well constructed, highly reliable component designed for use in all types of commercial, industrial, entertainment, computer, and automotive applications. To order devices on 12mm Tape and Reel (3000/13" Reel), add TR13 suffix to part number.

MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

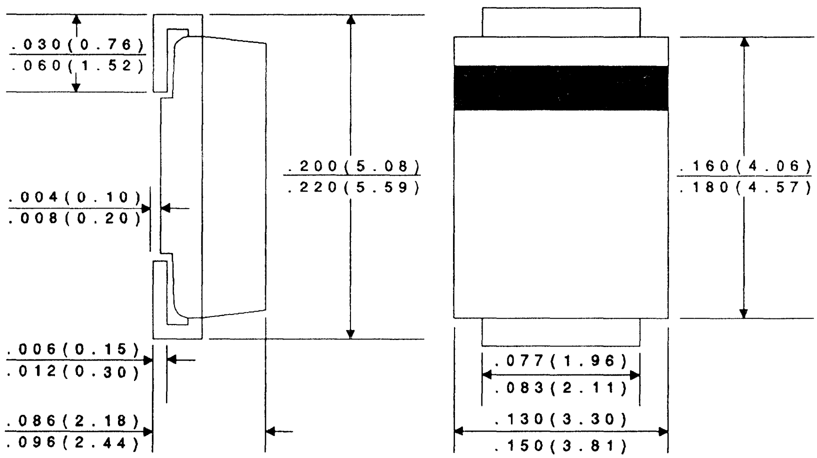
	SYMBOL	CMR1U -01	CMR1U -02	CMR1U -04	CMR1U -06	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	100	200	400	600	V
DC Blocking Voltage	V_R	100	200	400	600	V
RMS Reverse Voltage	$V_{R(RMS)}$	70	140	280	420	V
Average Forward Current(T_A=75°C)	I_O	1.0				A
Peak Forward Surge Current (8.3ms)	I_{FSM}	30				A
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +175				°C
Thermal Resistance	Θ_{JL}	20				°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_R	V_R=Rated V_{RRM}		5.0	μA
I_R	V_R=Rated V_{RRM}, T_A=125°C		100	μA
V_F	I_F=1.0A, (CMR1U-01, CMR1U-02)		1.00	V
V_F	I_F=1.0A, (CMR1U-04)		1.25	V
V_F	I_F=1.0A, (CMR1U-06)		1.40	V
t_{rr}	IF=0.5A, IR=1.0A, Recover to 0.25A (CMR1U-01, -02, -04)		50	ns
t_{rr}	IF=0.5A, IR=1.0A, Recover to 0.25A (CMR1U-06)		100	ns

All dimensions in inches (mm).

TOP VIEW



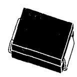
Marking Codes:

DEVICE	MARKING CODE
CMR1U-01	CU01
CMR1U-02	CU02
CMR1U-04	CU04
CMR1U-06	CU06

CMR1U-01M
CMR1U-02M
CMR1U-04M
CMR1U-06M

ULTRA FAST RECOVERY RECTIFIER
1.0 AMP, 100 THRU 600 VOLTS

SUPER™ mini



SMA CASE

Central™
Semiconductor Corp.

FEATURES:

- SUPER MINIATURE CASE
- SPECIAL SELECTIONS AVAILABLE
- LOW COST
- SUPERIOR LOT TO LOT CONSISTENCY
- HIGH RELIABILITY
- "C" BEND CONSTRUCTION PROVIDES STRAIN
- GLASS PASSIVATED CHIP RELIEF WHEN MOUNTED ON PC BOARD

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 1.0 Amp Surface Mount Ultra Fast Recovery Silicon Rectifier is a high quality, well constructed, highly reliable component designed for use in all types of commercial, industrial, entertainment, computer, and automotive applications where small size is required. The SMA case occupies 30% less board space than the SMB case. To order devices on 12mm Tape and Reel (5000/13" Reel), add TR13 suffix to part number.

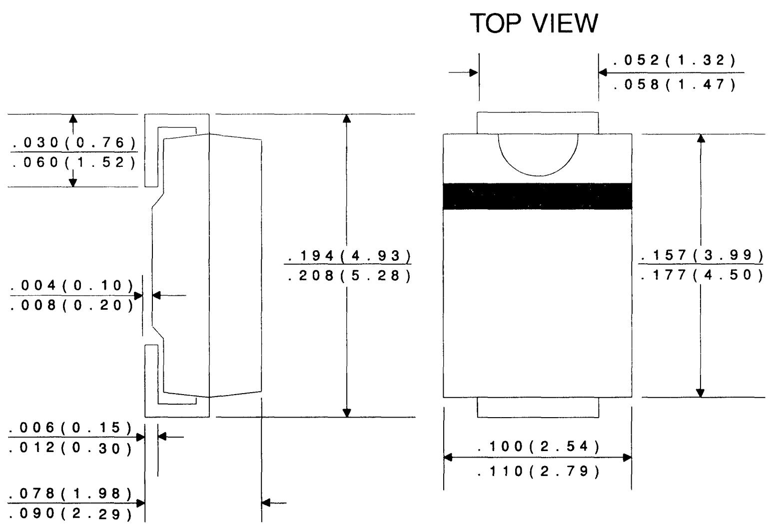
MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

	SYMBOL	**CMR1U -01M**	**CMR1U -02M**	**CMR1U -04M**	**CMR1U -06M**	**UNITS**
Peak Repetitive Reverse Voltage	V_{RRM}	100	200	400	600	V
DC Blocking Voltage	V_R	100	200	400	600	V
RMS Reverse Voltage	$V_{R(RMS)}$	70	140	280	420	V
Average Forward Current(T_A=75°C)	I_O		1.0			A
Peak Forward Surge Current (8.3ms)	I_{FSM}		30			A
Operating and Storage Junction Temperature	T_J, T_{stg}		-65 to +175			°C
Thermal Resistance	Θ_{JL}		30			°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	**TEST CONDITIONS**	**MIN**	**MAX**	**UNITS**
I_R	V_R=Rated V_{RRM}		5.0	μA
V_F	I_F=1.0A, (CMR1U-01M, CMR1U-02M)		1.00	V
V_F	I_F=1.0A, (CMR1U-04M)		1.25	V
V_F	I_F=1.0A, (CMR1U-06M)		1.40	V
t_{rr}	I_F=0.5A, I_R=1.0A, Recover to 0.25A (CMR1U-01M, -02M)		35	ns
t_{rr}	I_F=0.5A, I_R=1.0A, Recover to 0.25A (CMR1U-04M)		50	ns
t_{rr}	I_F=0.5A, I_R=1.0A, Recover to 0.25A (CMR1U-06M)		75	ns

All dimensions in inches (mm).

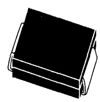


Marking Codes:

DEVICE	MARKING CODE
CMR1U-01M	CU01M
CMR1U-02M	CU02M
CMR1U-04M	CU04M
CMR1U-06M	CU06M

CMR2-02
CMR2-04
CMR2-06
CMR2-10

GENERAL PURPOSE RECTIFIER
2.0 AMP, 200 THRU 1,000 VOLTS



SMB CASE

Central™
Semiconductor Corp.

FEATURES:

- LOW COST
- SPECIAL SELECTIONS AVAILABLE
- HIGH RELIABILITY
- SUPERIOR LOT TO LOT CONSISTENCY
- GLASS PASSIVATED CHIP
- "C" BEND CONSTRUCTION PROVIDES STRAIN RELIEF WHEN MOUNTED ON PC BOARD

DESCRIPTION:
The CENTRAL SEMICONDUCTOR 2.0 Amp Surface Mount Silicon Rectifier is a high quality, well constructed, highly reliable component designed for use in all types of commercial, industrial, entertainment, computer, and automotive applications. To order devices on 12mm Tape and Reel (3000/13" Reel), add TR13 suffix to part number.

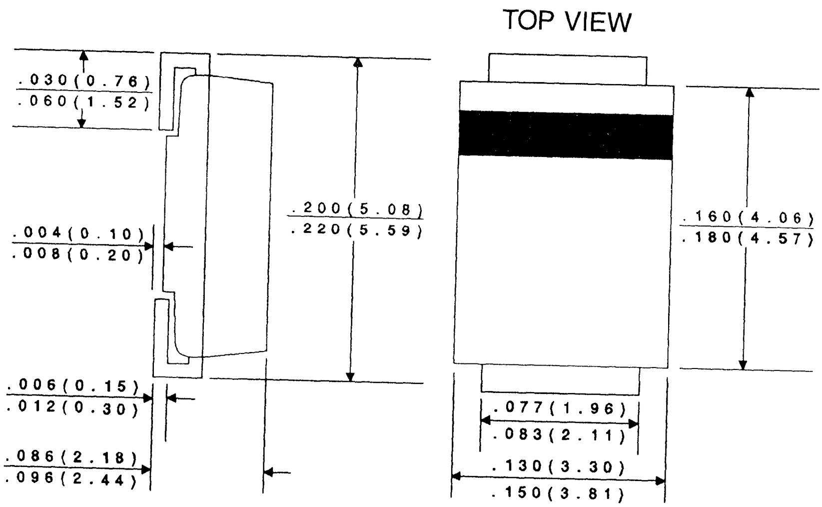
MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

	SYMBOL	CMR2-02	CMR2-04	CMR2-06	CMR2-10	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	200	400	600	1000	V
DC Blocking Voltage	V_R	200	400	600	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	140	280	420	700	V
Average Forward Current (T_A=50°C)	I_O		2.0			A
Peak Forward Surge Current (8.3ms)	I_{FSM}		60			A
Operating and Storage Junction Temperature	T_J,T_{stg}		-65 to +150			°C
Thermal Resistance	Θ_{JL}		20			°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
V_F	I_F=2.0A			1.1	V
I_R	V_R=Rated V_{RRM}			0.5	μA
I_R	V_R=Rated V_{RRM}, T_A=125°C			125	μA
t_{rr}	I_F=0.5A, I_R=1.0A, Recover to 0.25A			2.5	μs
C_J	V_R=4.0V, f=1.0MHz		30		pF

All dimensions in inches (mm).

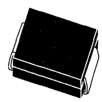


Marking Codes:

DEVICE	MARKING CODE
CMR2-02	C202
CMR2-04	C204
CMR2-06	C206
CMR2-10	C210

CMR2U-01
CMR2U-02
CMR2U-04
CMR2U-06

ULTRA FAST RECOVERY RECTIFIER
2.0 AMP, 100 THRU 600 VOLTS



SMB CASE

Central™
Semiconductor Corp.

FEATURES:

- LOW COST
- SPECIAL SELECTIONS AVAILABLE
- HIGH RELIABILITY
- SUPERIOR LOT TO LOT CONSISTENCY
- GLASS PASSIVATED CHIP
- "C" BEND CONSTRUCTION PROVIDES STRAIN RELIEF WHEN MOUNTED ON PC BOARD

DESCRIPTION:
The CENTRAL SEMICONDUCTOR 2.0 Amp Surface Mount Silicon Ultra Fast Recovery Rectifier is a high quality, well constructed, highly reliable component designed for use in all types of commercial, industrial, entertainment, computer, and automotive applications. To order devices on 12mm Tape and Reel (3000/13" Reel), add TR13 suffix to part number.

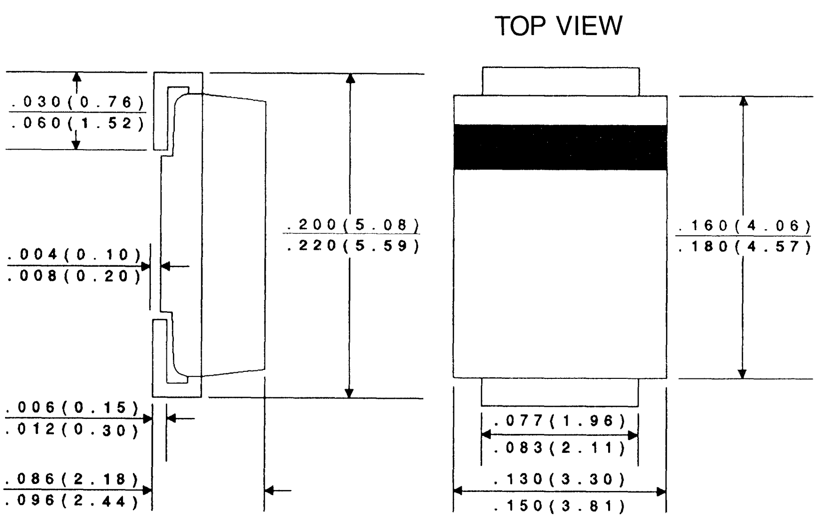
MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

	SYMBOL	**CMR2U -01**	**CMR2U -02**	**CMR2U -04**	**CMR2U -06**	**UNITS**
Peak Repetitive Reverse Voltage	V_{RRM}	100	200	400	600	V
DC Blocking Voltage	V_R	100	200	400	600	V
RMS Reverse Voltage	$V_{R(RMS)}$	70	140	280	420	V
Average Forward Current (T_A=50°C)	I_O		2.0			A
Peak Forward Surge Current (8.3ms)	I_{FSM}		50			A
Operating and Storage Junction Temperature	T_J,T_{stg}		-65 to +150			°C
Thermal Resistance	Θ_{JL}		20			°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	**TEST CONDITIONS**	**MIN**	**TYP**	**MAX**	**UNITS**
I_R	V_R=Rated V_{RRM}			10	µA
I_R	V_R=Rated V_{RRM}, T_A=100°C			50	µA
V_F	I_F=2.0A, (CMR2U-01, CMR2U-02)			1.00	V
V_F	I_F=2.0A, (CMR2U-04)			1.25	V
V_F	I_F=2.0A, (CMR2U-06)			1.40	V
t_{rr}	I_F=0.5A, I_R=1.0A, Recover to 0.25A			50	ns
C_J	V_R=4.0V, f=1.0MHz		50		pF

All dimensions in inches (mm).



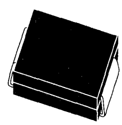
Marking Codes:

DEVICE	MARKING CODE
CMR2U-01	CU201
CMR2U-02	CU202
CMR2U-04	CU204
CMR2U-06	CU206

DATA SHEET

CMR3-02
CMR3-04
CMR3-06
CMR3-10

GENERAL PURPOSE RECTIFIER
3.0 AMP, 200 THRU 1,000 VOLTS



SMC CASE

Central™
Semiconductor Corp.

FEATURES:

- LOW COST
- SPECIAL SELECTIONS AVAILABLE
- HIGH RELIABILITY
- SUPERIOR LOT TO LOT CONSISTENCY
- GLASS PASSIVATED CHIP
- "C" BEND CONSTRUCTION PROVIDES STRAIN RELIEF WHEN MOUNTED ON PC BOARD

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 3.0 Amp Surface Mount Silicon Rectifier is a high quality, well constructed, highly reliable component designed for use in all types of commercial, industrial, entertainment, computer, and automotive applications. To order devices on 16mm Tape and Reel (3000/13" Reel), add TR13 suffix to part number.

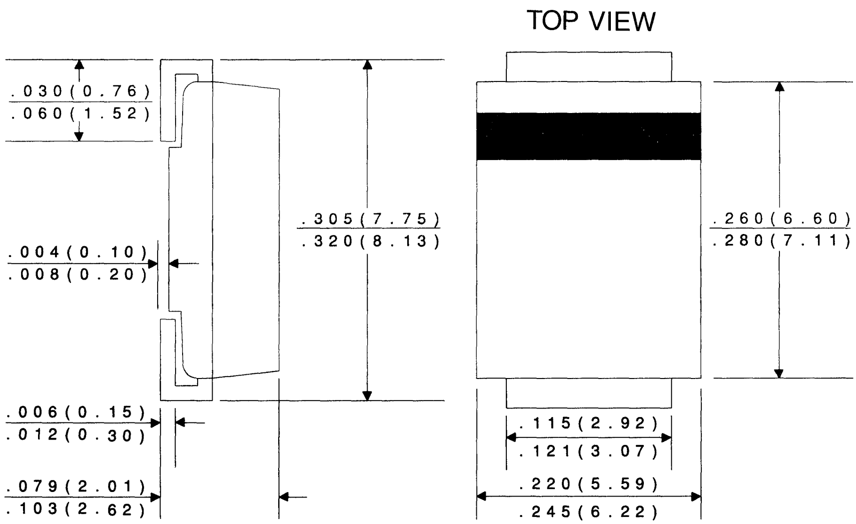
MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

	SYMBOL	CMR3-02	CMR3-04	CMR3-06	CMR3-10	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	200	400	600	1000	V
DC Blocking Voltage	V_R	200	400	600	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	140	280	420	700	V
Average Forward Current(T_A=75°C)	I_O		3.0			A
Peak Forward Surge Current (8.3ms)	I_{FSM}		200			A
Operating and Storage Junction Temperature	T_J, T_{stg}		-65 to +175			°C
Thermal Resistance	Θ_{JL}		10			°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
V_F	I_F=3.0A		1.2	V
I_R	V_R=Rated V_{RRM}		5.0	μA
I_R	V_R=Rated V_{RRM}, T_A=125°C		250	μA

All dimensions in inches (mm).



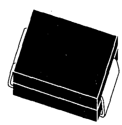
Marking Codes:

DEVICE	MARKING CODE
CMR3-02	C302
CMR3-04	C304
CMR3-06	C306
CMR3-10	C310

DATA SHEET

CMR3U-01
CMR3U-02
CMR3U-04
CMR3U-06

ULTRA FAST RECOVERY RECTIFIER
3.0 AMP, 100 THRU 600 VOLTS



SMC CASE

Central™
Semiconductor Corp.

FEATURES:

- LOW COST
- SPECIAL SELECTIONS AVAILABLE
- HIGH RELIABILITY
- SUPERIOR LOT TO LOT CONSISTENCY
- GLASS PASSIVATED CHIP
- "C" BEND CONSTRUCTION PROVIDES STRAIN RELIEF WHEN MOUNTED ON PC BOARD

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 3.0 Amp Surface Mount Silicon Ultra Fast Recovery Rectifier is a high quality, well constructed, highly reliable component designed for use in all types of commercial, industrial, entertainment, computer, and automotive applications. To order devices on 16mm Tape and Reel (3000/13" Reel), add TR13 suffix to part number.

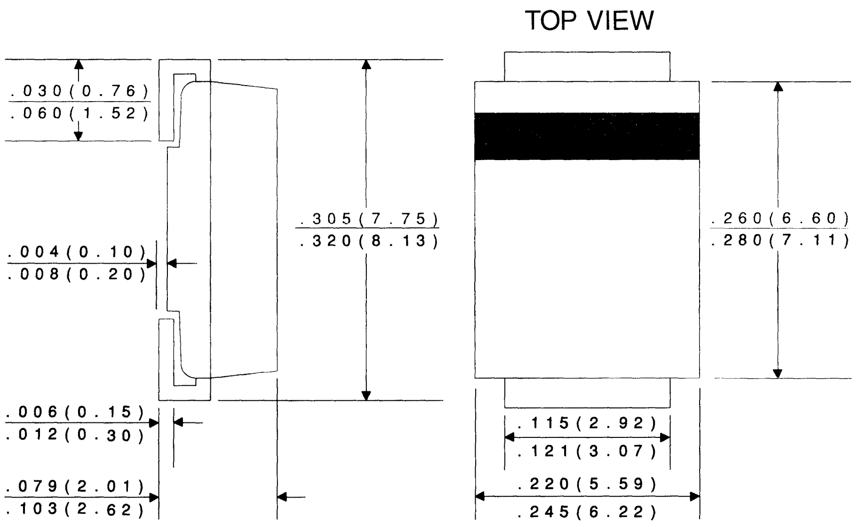
MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

	SYMBOL	CMR3U -01	CMR3U -02	CMR3U -04	CMR3U -06	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	100	200	400	600	V
DC Blocking Voltage	V_R	100	200	400	600	V
RMS Reverse Voltage	$V_{R(RMS)}$	70	140	280	420	V
Average Forward Current(T_A=75°C)	I_O		3.0			A
Peak Forward Surge Current (8.3ms)	I_{FSM}		150			A
Operating and Storage Junction Temperature	T_J,T_{stg}		-65 to +175			°C
Thermal Resistance	Θ_{JL}		10			°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_R	V_R=Rated V_{RRM}		5.0	µA
I_R	V_R=Rated V_{RRM}, T_A=100°C		500	µA
V_F	I_F=3.0A, (CMR3U-01, CMR3U-02)		1.00	V
V_F	I_F=3.0A, (CMR3U-04)		1.25	V
V_F	I_F=3.0A, (CMR3U-06)		1.40	V
t_{rr}	I_F=500mA, I_R=1.0A, Irr=250mA (CMR3U-01, -02, -04)		50	ns
t_{rr}	I_F=500mA, I_R=1.0A, Irr=250mA (CMR3U-06)		100	ns

All dimensions in inches (mm).



Marking Codes:

DEVICE	MARKING CODE
CMR3U-01	CU301
CMR3U-02	CU302
CMR3U-04	CU304
CMR3U-06	CU306

DATA SHEET

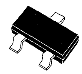
R1

Central™
Semiconductor Corp.

CMSD4448

**SUPER-MINI
HIGH SPEED
SWITCHING DIODE**

SUPER™ mini



SOT-323 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMSD4448 type is a ultra-high speed silicon switching diode manufactured by the epitaxial planar process, in an epoxy molded super-mini surface mount package, designed for high speed switching applications.

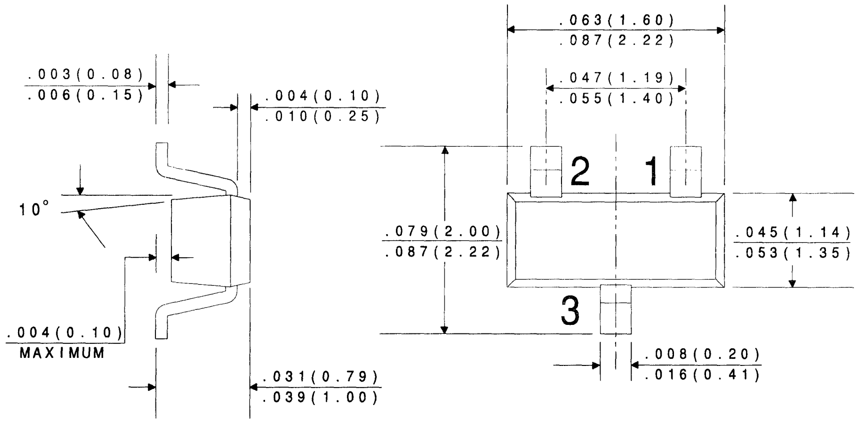
MAXIMUM RATINGS: (T_A=25°C)

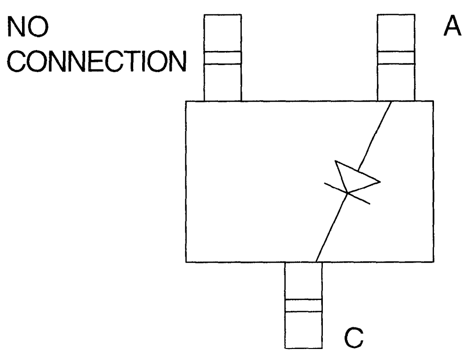
	SYMBOL		UNITS
Continuous Reverse Voltage	V_R	75	V
Peak Repetitive Reverse Voltage	V_{RRM}	100	V
Continuous Forward Current	I_F	250	mA
Peak Repetitive Forward Current	I_{FRM}	250	mA
Forward Surge Current, tp=1 µsec.	I_{FSM}	4000	mA
Forward Surge Current, tp=1 sec.	I_{FSM}	1000	mA
Power Dissipation	P_D	250	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	500	°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
V_{BR}	I_R=5.0µA	75		V
V_{BR}	I_R=100µA	100		V
I_R	V_R=20V		25	nA
V_F	I_F=5.0mA	0.62	0.72	V
V_F	I_F=100mA		1.0	V
C_T	V_R=0, f=1 MHz		4.0	pF
t_{rr}	I_R=I_F=10mA, R_L=100Ω, Rec. to 1.0mA		4.0	ns

All dimensions in inches (mm).



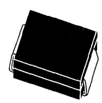


DATA
SHEET

R1

CMSH1-20
CMSH1-40
CMSH1-60
CMSH1-100

SCHOTTKY BARRIER RECTIFIER
1.0 AMP, 20 THRU 100 VOLTS



SMB CASE

Central™
Semiconductor Corp.

FEATURES:

- LOW COST
- SUPERIOR LOT TO LOT CONSISTENCY
- HIGH RELIABILITY
- "C" BEND CONSTRUCTION PROVIDES STRAIN RELIEF WHEN MOUNTED ON PC BOARD
- SPECIAL SELECTIONS AVAILABLE

DESCRIPTION:
The CENTRAL SEMICONDUCTOR 1.0 Amp Surface Mount Silicon Schottky Rectifier is a high quality, well constructed, highly reliable component designed for use in all types of commercial, industrial, entertainment, computer, and automotive applications. To order devices on 12mm Tape and Reel (3000/13" Reel), add TR13 suffix to part number.

MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

	SYMBOL	CMSH1 -20	CMSH1 -40	CMSH1 -60	CMSH1 -100	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	20	40	60	100	V
DC Blocking Voltage	V_R	20	40	60	100	V
RMS Reverse Voltage	$V_{R(RMS)}$	14	28	42	70	V
Average Forward Current(T_A=75°C)	I_O		1.0			A
Peak Forward Surge Current (8.3ms)	I_{FSM}		30			A
Operating and Storage Junction Temperature	T_J,T_{stg}		-65 to +150			°C
Thermal Resistance	Θ_{JL}		20			°C/W

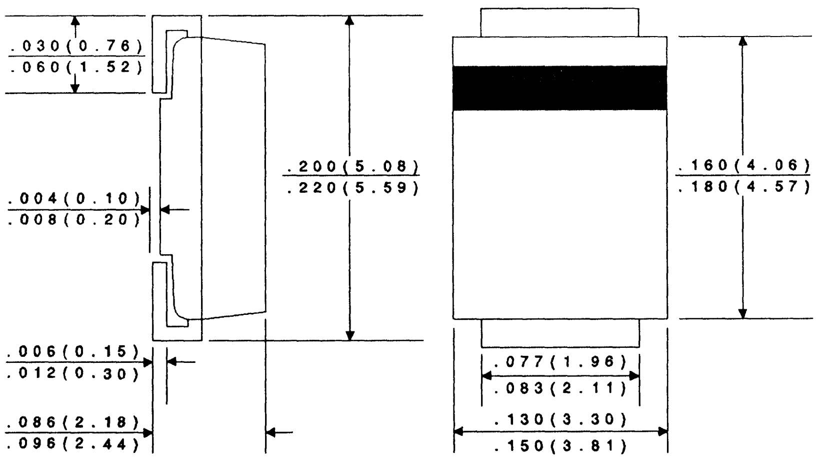
ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
V_F	I_F=1.0A (CMSH1-20 AND CMSH1-40)			0.55	V
V_F	I_F=1.0A (CMSH1-60)			0.70	V
V_F	I_F=1.0A (CMSH1-100)			0.85	V
I_R	V_R=Rated V_{RRM}			0.50	mA
I_R	V_R=Rated V_{RRM}, T_A=125°C			20	mA

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
C_J	V_R=4.0V, f=1.0MHz, (CMSH1-20 AND CMSH1-40)		110		pF
C_J	V_R=4.0V, f=1.0MHz, (CMSH1-60)		80		pF
C_J	V_R=4.0V, f=1.0MHz, (CMSH1-100)		50		pF

All dimensions in inches (mm).

TOP VIEW



Marking Codes:

DEVICE	MARKING CODE
CMSH1-20	CS20
CMSH1-40	CS40
CMSH1-60	CS60
CMSH1-100	CS100

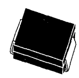
DATA SHEET

R2

CMSH1-20M
CMSH1-40M
CMSH1-60M

SCHOTTKY BARRIER RECTIFIER
1.0 AMP, 20 THRU 60 VOLTS

SUPER™ mini



SMA CASE

Central™
Semiconductor Corp.

FEATURES:

- SUPER MINIATURE CASE
- SUPERIOR LOT TO LOT CONSISTENCY
- LOW COST
- "C" BEND CONSTRUCTION PROVIDES STRAIN RELIEF WHEN MOUNTED ON PC BOARD
- HIGH RELIABILITY
- SPECIAL SELECTIONS AVAILABLE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 1.0 Amp Surface Mount Silicon Schottky Rectifier is a high quality, well constructed, highly reliable component designed for use in all types of commercial, industrial, entertainment, computer, and automotive applications where small size is required. The SMA case occupies 30% less board space than the SMB case. To order devices on 12mm Tape and Reel (5000/ 13" Reel), add TR13 suffix to part number.

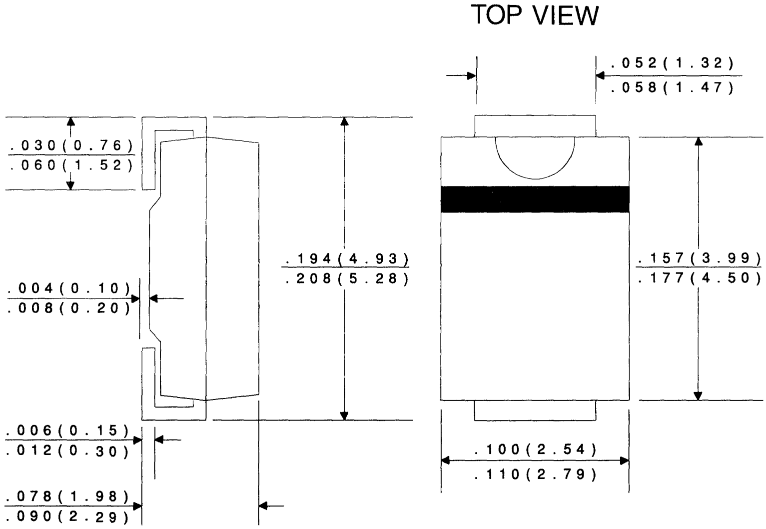
MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

	SYMBOL	CMSH1-20M	CMSH1-40M	CMSH1-60M	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	20	40	60	V
DC Blocking Voltage	V_R	20	40	60	V
RMS Reverse Voltage	$V_{R(RMS)}$	14	28	42	V
Average Forward Current(T_L=75°C)	I_O	1.0	1.0		A
Average Forward Current(T_L=100°C)	I_O			1.0	A
Peak Forward Surge Current (8.3ms)	I_{FSM}	30	30	30	A
Operating and Storage Junction Temperature	T_J,T_{stg}		-65 to +150		°C
Thermal Resistance	Θ_{JL}	30	30	30	°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
V_F	I_F=1.0A (CMSH1-20M AND CMSH1-40M)			0.50	V
V_F	I_F=1.0A (CMSH1-60M)			0.70	V
I_R	V_R=Rated V_{RRM}			0.50	mA
I_R	V_R=Rated V_{RRM}, T_A=100°C			10	mA
C_J	V_R=4.0V, f=1.0MHz, (CMSH1-20M AND CMSH1-40M)		100		pF
C_J	V_R=4.0V, f=1.0MHz, (CMSH1-60M)		80		pF

All dimensions in inches (mm).

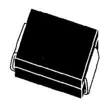


DEVICE	MARKING CODE
CMSH1-20M	CS20M
CMSH1-40M	CS40M
CMSH1-60M	CS60M

DATA SHEET

CMSH2-20
CMSH2-40
CMSH2-60

SCHOTTKY BARRIER RECTIFIER
2.0 AMP, 20 THRU 60 VOLTS



SMB CASE

Central™
Semiconductor Corp.

FEATURES:

- LOW COST
- SUPERIOR LOT TO LOT CONSISTENCY
- HIGH RELIABILITY
- "C" BEND CONSTRUCTION PROVIDES STRAIN RELIEF WHEN MOUNTED ON PC BOARD
- SPECIAL SELECTIONS AVAILABLE

DESCRIPTION:
The CENTRAL SEMICONDUCTOR 2.0 Amp Surface Mount Silicon Schottky Rectifier is a high quality, well constructed, highly reliable component designed for use in all types of commercial, industrial, entertainment, computer, and automotive applications. To order devices on 12mm Tape and Reel (3000/ 13" Reel), add TR13 suffix to part number.

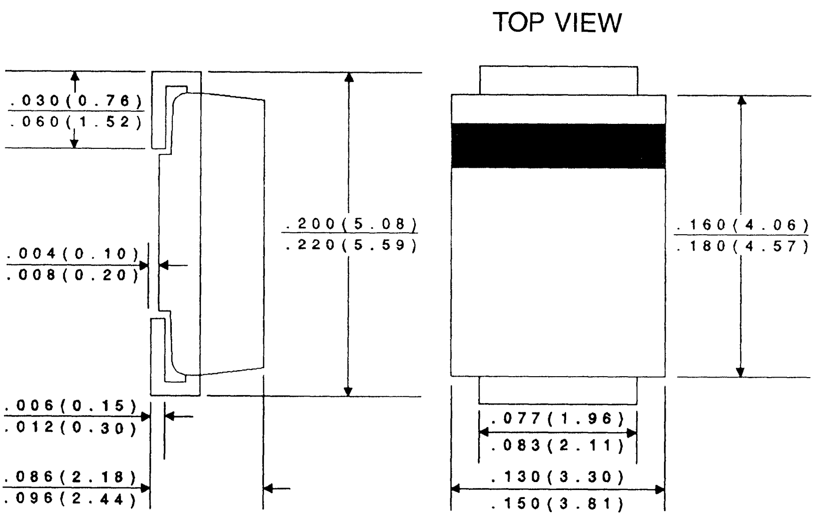
MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

	SYMBOL	**CMSH2 -20**	**CMSH2 -40**	**CMSH2 -60**	**UNITS**
Peak Repetitive Reverse Voltage	V_{RRM}	20	40	60	V
DC Blocking Voltage	V_R	20	40	60	V
RMS Reverse Voltage	$V_{R(RMS)}$	14	28	42	V
Average Forward Current(T_A=55°C)	I_O		2.0		A
Peak Forward Surge Current (8.3ms)	I_{FSM}		30		A
Operating and Storage Junction Temperature	T_J, T_{stg}		-65 to +150		°C
Thermal Resistance	Θ_{JL}		20		°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	**TEST CONDITIONS**	**MIN**	**TYP**	**MAX**	**UNITS**
I_R	V_R=Rated V_{RRM}			0.50	mA
I_R	V_R=Rated V_{RRM}, T_A=100°C			20	mA
V_F	I_F=2.0A (CMSH2-20 AND CMSH2-40)			0.50	V
V_F	I_F=2.0A (CMSH2-60)			0.70	V
C_J	V_R=4.0V, f=1.0MHz, (CMSH2-20 AND CMSH2-40)		150		pF
C_J	V_R=4.0V, f=1.0MHz, (CMSH2-60)		120		pF

All dimensions in inches (mm).



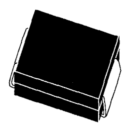
Marking Codes:

DEVICE	MARKING CODE
CMSH2-20	CS220
CMSH2-40	CS240
CMSH2-60	CS260

DATA SHEET

CMSH3-20
CMSH3-40
CMSH3-60

SCHOTTKY BARRIER RECTIFIER
3.0 AMP, 20 THRU 60 VOLTS



SMC CASE

Central™
Semiconductor Corp.

FEATURES:

- LOW COST
- SUPERIOR LOT TO LOT CONSISTENCY
- HIGH RELIABILITY
- "C" BEND CONSTRUCTION PROVIDES STRAIN RELIEF WHEN MOUNTED ON PC BOARD
- SPECIAL SELECTIONS AVAILABLE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 3.0 Amp Surface Mount Silicon Schottky Rectifier is a high quality, well constructed, highly reliable component designed for use in all types of commercial, industrial, entertainment,computer, and automotive applications. To order devices on 16mm Tape and Reel (3000/13" Reel), add TR13 suffix to part number.

MAXIMUM RATINGS: (T_A=25°C unless otherwise noted)

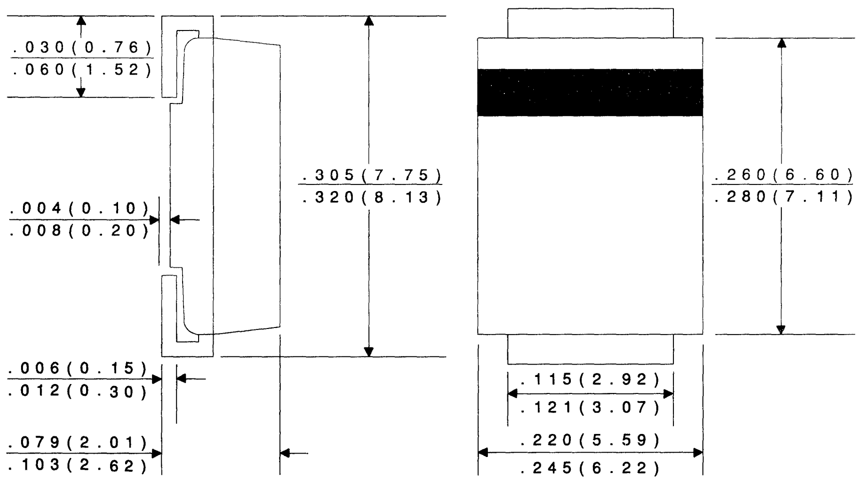
	SYMBOL	CMSH3-20	CMSH3-40	CMSH3-60	UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	20	40	60	V
DC Blocking Voltage	V_R	20	40	60	V
RMS Reverse Voltage	$V_{R(RMS)}$	14	28	42	V
Average Forward Current(T_A=75°C)	I_O		3.0		A
Peak Forward Surge Current (8.3ms)	I_{FSM}		150		A
Operating and Storage Junction Temperature	T_J, T_{stg}		-65 to +150		°C
Thermal Resistance	Θ_{JL}		10		°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_R	V_R=Rated V_{RRM}			500	μA
I_R	V_R=Rated V_{RRM}, T_A=100°C			20	mA
V_F	I_F=3.0A (CMSH3-20 AND CMSH3-40)			0.50	V
V_F	I_F=3.0A (CMSH3-60)			0.70	V

All dimensions in inches (mm).

TOP VIEW



Marking Codes:

DEVICE	MARKING CODE
CMSH3-20	CS320
CMSH3-40	CS340
CMSH3-60	CS360

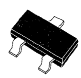
DATA SHEET

CMST2222A

SUPER-MINI
NPN SILICON TRANSISTOR

Central™
Semiconductor Corp.

SUPER™ mini



SOT-323 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMST2222A type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a super-mini surface mount package, designed for small signal general purpose and switching applications.

MAXIMUM RATINGS: (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	75	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	250	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	500	°C/W

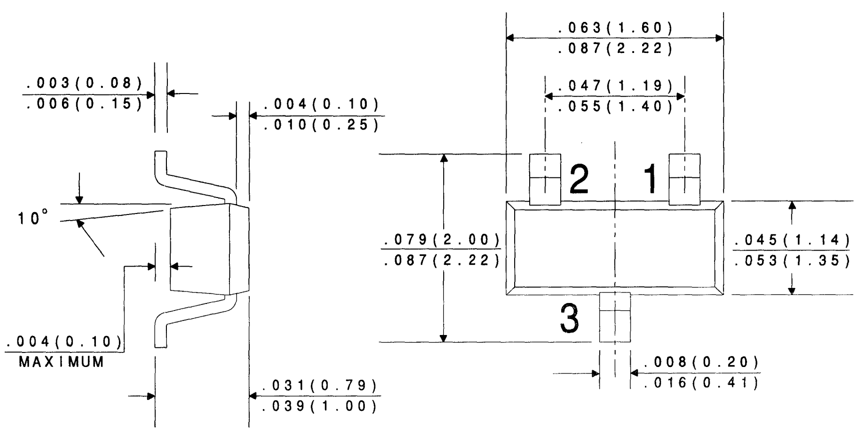
ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=60V		10	nA
I_{CBO}	V_{CB}=60V, T_A=125°C		10	µA
I_{EBO}	V_{EB}=3.0V		10	nA
I_{CEV}	V_{CE}=60V, V_{EB}=3.0V		10	nA
BV_{CBO}	I_C=10µA	75		V
BV_{CEO}	I_C=10mA	40		V
BV_{EBO}	I_E=10µA	6.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.3	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		1.0	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA	0.6	1.2	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		2.0	V
h_{FE}	V_{CE}=10V, I_C=0.1mA	35		
h_{FE}	V_{CE}=10V, I_C=1.0mA	50		
h_{FE}	V_{CE}=10V, I_C=10mA	75		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=10V, I_C=150mA	100	300	
h_{FE}	V_{CE}=1.0V, I_C=150mA	50		
h_{FE}	V_{CE}=10V, I_C=500mA	40		
f_T	V_{CE}=20V, I_C=20mA, f=100MHz	300		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		8.0	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		25	pF
h_{ie}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	2.0	8.0	kΩ
h_{ie}	V_{CE}=10V, I_C=10mA, f=1.0kHz	0.25	1.25	kΩ
h_{re}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz		8.0	$x10^{-4}$
h_{re}	V_{CE}=10V, I_C=10mA, f=1.0kHz		4.0	$x10^{-4}$
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	50	300	
h_{fe}	V_{CE}=10V, I_C=10mA, f=1.0kHz	75	375	
h_{oe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	5.0	35	μmhos
h_{oe}	V_{CE}=10V, I_C=10mA, f=1.0kHz	25	200	μmhos
$rb'C_c$	V_{CB}=10V, I_E=20mA, f=31.8MHz		150	ps
NF	V_{CE}=10V, I_C=100mA, R_S=1.0kΩ, f=1.0kHz		4.0	dB
t_d	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		10	ns
t_r	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		25	ns
t_s	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA		225	ns
t_f	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA		60	ns

All dimensions in inches (mm).

TOP VIEW



DATA SHEET

LEAD CODE:

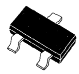
1) BASE
2) EMITTER
3) COLLECTOR

R1

CMST2907A

SUPER-MINI
PNP SILICON TRANSISTOR

SUPER™ mini



SOT-323 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMST2907A type is an PNP silicon transistor manufactured by the epitaxial planar process, epoxy molded in a super-mini surface mount package, designed for small signal general purpose and switching applications.

MAXIMUM RATINGS: (T_A=25°C)

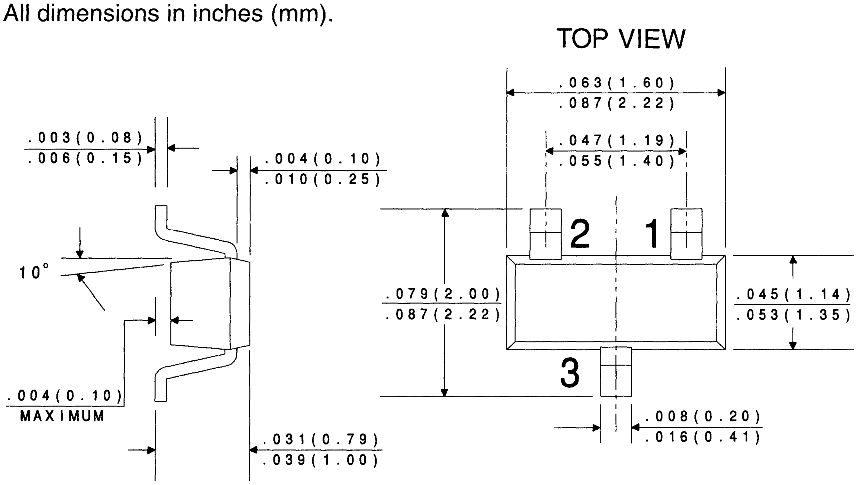
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	250	mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	500	°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=50V		10	nA
I_{CBO}	V_{CB}=50V, T_A=125°C		10	μA
I_{CEV}	V_{CE}=30V, V_{BE}=0.5V		50	nA
BV_{CBO}	I_C=10μA	60		V
BV_{CEO}	I_C=10mA	60		V
BV_{EBO}	I_E=10μA	5.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.4	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		1.6	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA		1.3	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		2.6	V
h_{FE}	V_{CE}=10V, I_C=0.1mA	75		
h_{FE}	V_{CE}=10V, I_C=1.0mA	100		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=10V, I_C=10mA	100		
h_{FE}	V_{CE}=10V, I_C=150mA	100	300	
h_{FE}	V_{CE}=10V, I_C=500mA	50		
f_T	V_{CE}=20V, I_C=50mA, f=100MHz	200		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		8.0	pF
C_{ib}	V_{BE}=2.0V, I_C=0, f=1.0MHz		30	pF
t_{on}	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		45	ns
t_d	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		10	ns
t_r	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		40	ns
t_{off}	V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA		100	ns
t_s	V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA		80	ns
t_f	V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA		30	ns

All dimensions in inches (mm).



DATA SHEET

LEAD CODE:

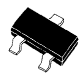
1) BASE
2) EMITTER
3) COLLECTOR

R1

CMST3904 NPN
CMST3906 PNP

SUPER-MINI
COMPLEMENTARY
SILICON TRANSISTORS

SUPER™
mini



SOT-323 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMST3904, CMST3906 types are complementary silicon transistors manufactured by the epitaxial planar process, epoxy molded in a super-mini surface mount package, designed for small signal general purpose amplifier and switching applications.

MAXIMUM RATINGS: (T_A=25°C)

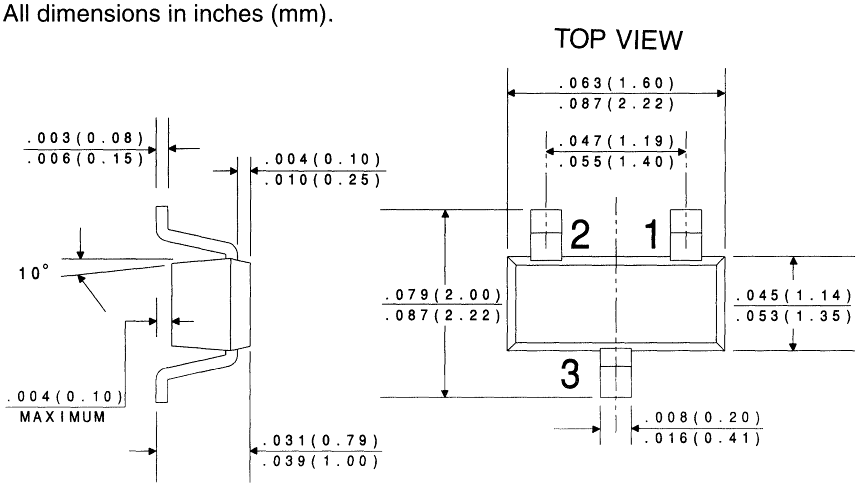
	SYMBOL	CMST3904	CMST3906	UNITS
Collector-Base Voltage	V_{CBO}	60	40	V
Collector-Emitter Voltage	V_{CEO}	40	40	V
Emitter-Base Voltage	V_{EBO}	6.0	5.0	V
Collector Current	I_C	200		mA
Power Dissipation	P_D	250		mW
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150		°C
Thermal Resistance	Θ_{JA}	500		°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

		CMST3904		CMST3906		
SYMBOL	**TEST CONDITIONS**	**MIN**	**MAX**	**MIN**	**MAX**	**UNITS**
I_{CEV}	V_{CE}=30V, V_{EB}=3.0V		50		50	nA
BV_{CBO}	I_C=10μA		60		40	V
BV_{CEO}	I_C=1.0mA		40		40	V
BV_{EBO}	I_E=10μA		6.0		5.0	V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.20		0.25	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		0.30		0.40	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA	0.65	0.85	0.65	0.85	V
$V_{BE(SAT)}$	I_C=50mA, I_B=5.0mA		0.95		0.95	V
h_{FE}	V_{CE}=1.0V, I_C=0.1mA	40		60		
h_{FE}	V_{CE}=1.0V, I_C=1.0mA	70		80		
h_{FE}	V_{CE}=1.0V, I_C=10mA	100	300	100	300	

SYMBOL	TEST CONDITIONS	CMST3904 MIN	CMST3904 MAX	CMST3906 MIN	CMST3906 MAX	UNITS
h_{FE}	V_{CE}=1.0V, I_C=50mA	60		60		
h_{FE}	V_{CE}=1.0V, I_C=100mA	30		30		
f_T	V_{CE}=20V, I_C=10mA, f=100MHz	300		250		MHz
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		4.0		4.5	pF
C_{ib}	V_{BE}=0.5V, I_C=0, f=1.0MHz		8.0		10	pF
h_{ie}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	1.0	10	2.0	12	kΩ
h_{re}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	0.5	8.0	0.1	10	$x10^{-4}$
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	100	400	100	400	
h_{oe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	1.0	40	3.0	60	μmhos
NF	V_{CE}=5.0V, I_C=100mA, R_S=1.0kΩ f=10Hz to 15.7kHz		5.0		4.0	dB
t_d	V_{CC}=3.0V, V_{BE}=0.5, I_C=10mA, I_{B1}=1.0mA		35		35	ns
t_r	V_{CC}=3.0V, V_{BE}=0.5, I_C=10mA, I_{B1}=1.0mA		35		35	ns
t_s	V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=1.0mA		200		225	ns
t_f	V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=1.0mA		50		75	ns

All dimensions in inches (mm).



LEAD CODE:

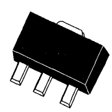
1) BASE
2) EMITTER
3) COLLECTOR

DATA SHEET

R1

CQ89D
CQ89M
CQ89N

2.0 AMP TRIAC
400 THRU 800 VOLTS



SOT-89 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CQ89D series types are epoxy molded silicon triacs designed for full wave AC control applications featuring gate triggering in all four (4) quadrants.

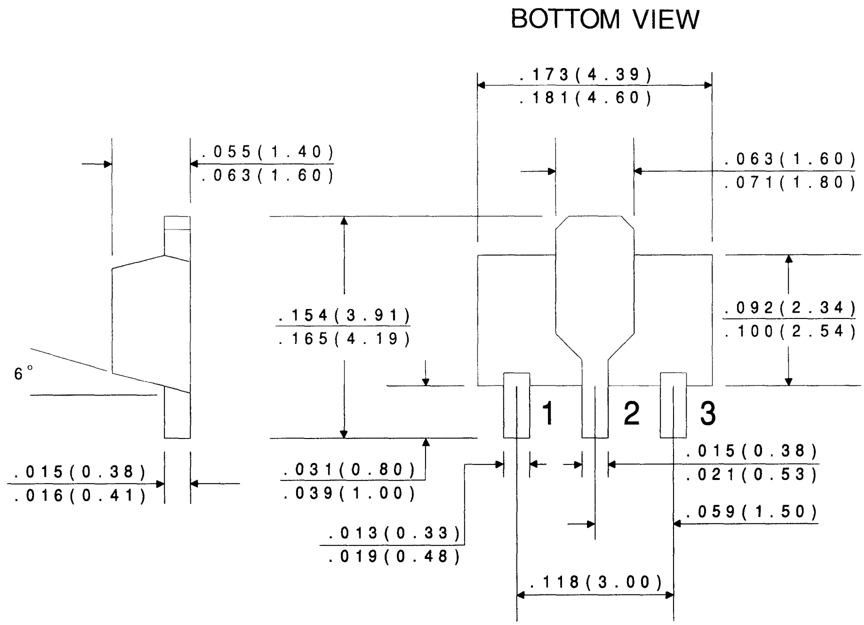
MAXIMUM RATINGS (T_C=25°C)

	SYMBOL	CQ89D	CQ89M	CQ89N	UNITS
Peak Repetitive Off-State Voltage	V_{DRM}	400	600	800	V
RMS On-State Current (T_C=80°C)	$I_{T(RMS)}$		2.0		A
Peak One Cycle Surge (10ms)	I_{TSM}		10		A
Peak Gate Current	I_{GM}		1.0		A
Average Gate Power Dissipation	$P_{G(AV)}$		0.1		W
StorageTemperature	T_{stg}		-45 to +150		°C
Junction Temperature	T_J		-45 to +125		°C
Thermal Resistance	Θ_{J-C}		10		°C/W

ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{DRM}	V_D=Rated V_{DRM}			5.00	μA
I_{DRM}	V_D=Rated V_{DRM}, T_C=125°C			200	μA
I_{GT}	V_D=12V, QUAD I, II, III, IV			25	mA
I_H	V_D=12V			25	mA
V_{GT}	V_D=12V			2.00	V
V_{TM}	I_T=3.0A			1.75	V
dv/dt	V_D=$\frac{2}{3}V_{DRM}$, T_C=125°C	100			V/μs

All dimensions in inches (mm).



LEAD CODE:

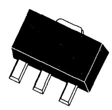
1) GATE
2) MT2
3) MT1

DATA SHEET

R2

CQ89DS
CQ89MS
CQ89NS

2.0 AMP TRIAC
400 THRU 800 VOLTS



SOT-89 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CQ89DS series types are epoxy molded silicon triacs designed for full wave AC control applications featuring gate triggering in all four (4) quadrants.

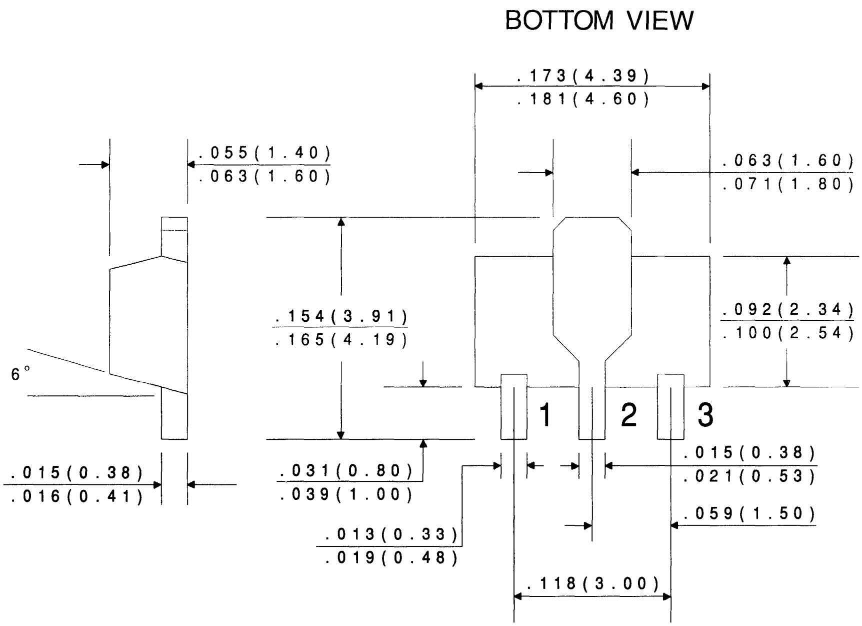
MAXIMUM RATINGS (T_C=25°C)

	SYMBOL	CQ89DS	CQ89MS	CQ89NS	UNITS
Peak Repetitive Off-State Voltage	V_{DRM}	400	600	800	V
RMS On-State Current (T_C=80°C)	$I_{T(RMS)}$		2.0		A
Peak One Cycle Surge (10ms)	I_{TSM}		10		A
Peak Gate Current	I_{GM}		1.0		A
Average Gate Power Dissipation	$P_{G(AV)}$		0.1		W
StorageTemperature	T_{stg}		-45 to +150		°C
Junction Temperature	T_J		-45 to +125		°C
Thermal Resistance	$\Theta_{J\text{-}C}$		10		°C/W

ELECTRICAL CHARACTERISTICS (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{DRM}	V_D=Rated V_{DRM}			5.0	µA
I_{DRM}	V_D=Rated V_{DRM}, T_C=125°C			200	µA
I_{GT}	V_D=12V, QUAD I, II, III, IV			5.0	mA
I_H	V_D=12V			5.0	mA
V_{GT}	V_D=12V			2.0	V
V_{TM}	I_T=3.0A			1.75	V
dv/dt	V_D= / V_{DRM}, T_C=125°C	30			V/µs

All dimensions in inches (mm).



LEAD CODE:

1) GATE
2) MT2
3) MT1

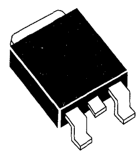
DATA SHEET

R1

CSHD3-40

SCHOTTKY RECTIFIER
SINGLE, 3.0 AMPS, 40 VOLTS

DPAK POWER!



DPAK CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CSHD3-40 is a Silicon Schottky Rectifier designed for surface mount fast switching applications requiring a low forward voltage drop.

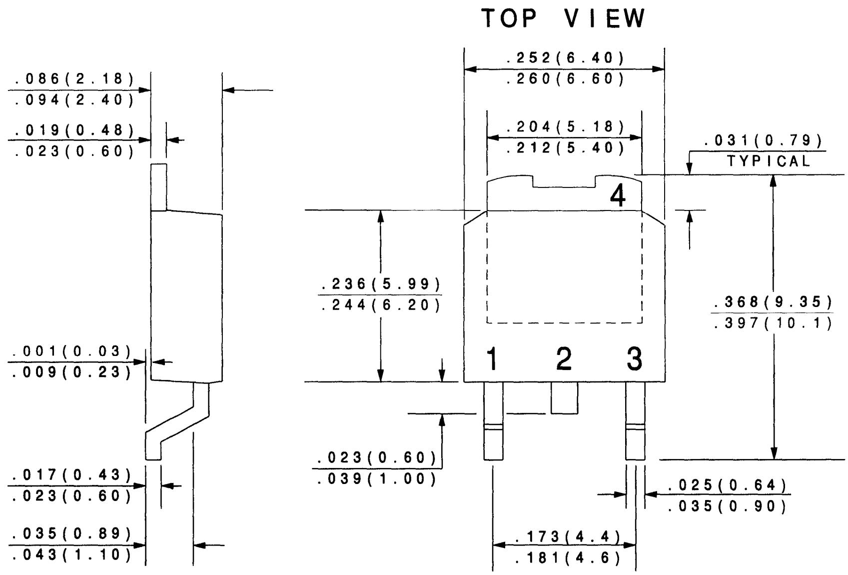
MAXIMUM RATINGS: (T_C=25°C unless otherwise noted)

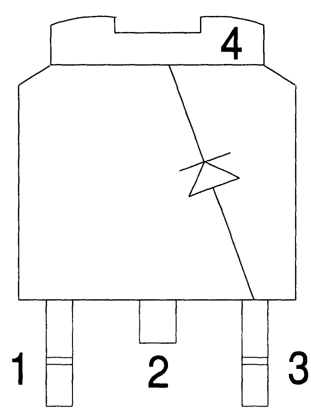
	SYMBOL		UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	40	V
Average Rectified Forward Current (T_C=120°C)	I_O	3.0	A
RMS Forward Current	$I_{F(RMS)}$	6.0	A
Peak Forward Surge Current (tp=10ms)	I_{FSM}	75	A
Peak Repetitive Reverse Surge Current (tp=2μs)	I_{RRM}	1.0	A
Critical Rate of Rise of Reverse Voltage	dV/dt	1000	V/μs
Operating and Storage			
Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JC}	5.5	°C/W

ELECTRICAL CHARACTERISTICS: (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
I_R	V_R=40V		100	μA
I_R	V_R=40V, T_C=125°C		10	mA
V_F	I_F=3.0A, T_C=125°C		0.57	V
V_F	I_F=6.0A		0.84	V

All dimensions in inches (mm).





LEAD CODE:

1) NO CONNECTION
2) CATHODE
3) ANODE
4) CATHODE

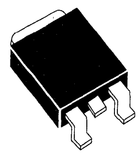
PIN 2 IS COMMON TO THE TAB (4).

R2

DATA SHEET

CSHD3-60

SCHOTTKY RECTIFIER
SINGLE, 3.0 AMPS, 60 VOLTS



DPAK CASE

Central Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CSHD3-60 is a Silicon Schottky Rectifier designed for surface mount fast switching applications requiring a low forward voltage drop.

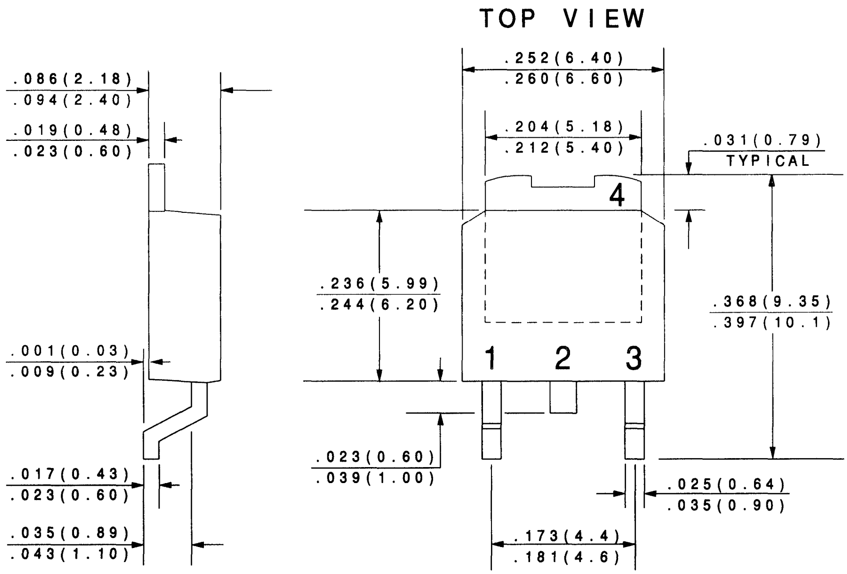
MAXIMUM RATINGS: (T_C=25°C unless otherwise noted)

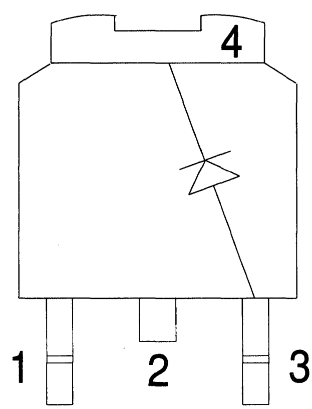
	SYMBOL		UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	60	V
Average Rectified Forward Current (T_C=120°C)	I_O	3.0	A
RMS Forward Current	$I_{F(RMS)}$	6.0	A
Peak Forward Surge Current (tp=10ms)	I_{FSM}	50	A
Peak Repetitive Reverse Surge Current (tp=2μs)	I_{RRM}	1.0	A
Critical Rate of Rise of Reverse Voltage	dV/dt	1000	V/μs
Operating and Storage			
Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JC}	3.5	°C/W

ELECTRICAL CHARACTERISTICS: (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
I_R	V_R=60V		30	μA
I_R	V_R=60V, T_C=125°C		10	mA
V_F	I_F=3.0A		0.65	V
V_F	I_F=3.0A, T_C=125°C		0.59	V

All dimensions in inches (mm).





LEAD CODE:

1) NO CONNECTION
2) CATHODE
3) ANODE
4) CATHODE

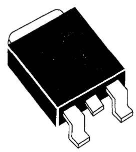
PIN 2 IS COMMON TO THE TAB (4).

NEW

CSHD6-40C

SCHOTTKY RECTIFIER
DUAL,COMMON CATHODE
6.0 AMPS, 40 VOLTS

DPAK POWER!



DPAK CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CSHD6-40C is a Silicon Schottky Rectifier designed for surface mount fast switching applications requiring a low forward voltage drop.

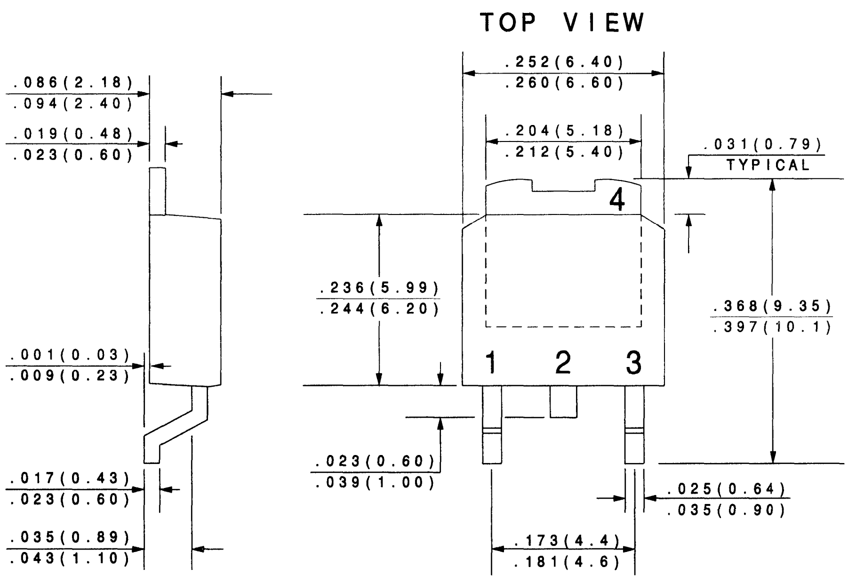
MAXIMUM RATINGS: (T_C=25°C unless otherwise noted)

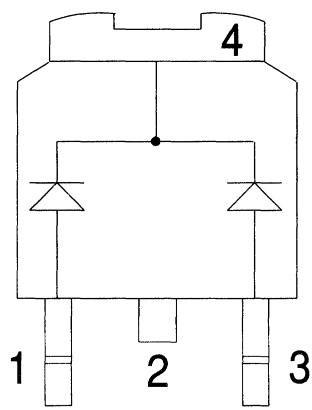
	SYMBOL		UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	40	V
Average Rectified Forward Current (T_C=120°C)	I_O	3.0	A
RMS Forward Current	$I_{F(RMS)}$	6.0	A
Peak Forward Surge Current (tp=10ms)	I_{FSM}	75	A
Peak Repetitive Reverse Surge Current (tp=2µs)	I_{RRM}	1.0	A
Critical Rate of Rise of Reverse Voltage	dV/dt	1000	V/µs
Operating and Storage			
Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance, Per Diode	Θ_{JC}	5.5	°C/W

ELECTRICAL CHARACTERISTICS PER DIODE: (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
I_R	V_R=40V		100	µA
I_R	V_R=40V, T_C=125°C		10	mA
V_F	I_F=3.0A, T_C=125°C		0.57	V
V_F	I_F=6.0A		0.84	V

All dimensions in inches (mm).





DATA SHEET

LEAD CODE:

1) ANODE #1
2) CATHODE
3) ANODE #2
4) CATHODE

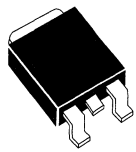
PIN 2 IS COMMON TO THE TAB (4).

R2

CSHD6-60C

SCHOTTKY RECTIFIER
DUAL,COMMON CATHODE
6.0 AMPS, 60 VOLTS

DPAK POWER!



DPAK CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CSHD6-60C is a Silicon Schottky Rectifier designed for surface mount fast switching applications requiring a low forward voltage drop.

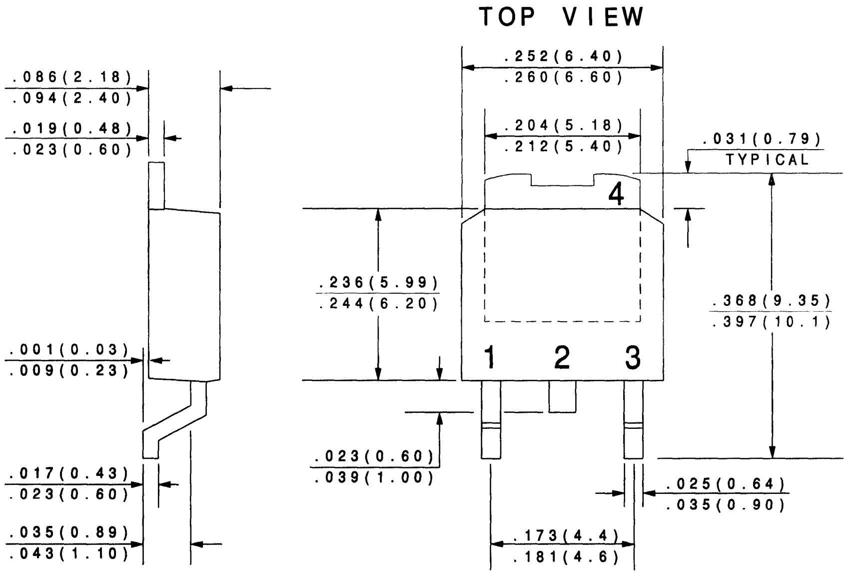
MAXIMUM RATINGS: (T_C=25°C unless otherwise noted)

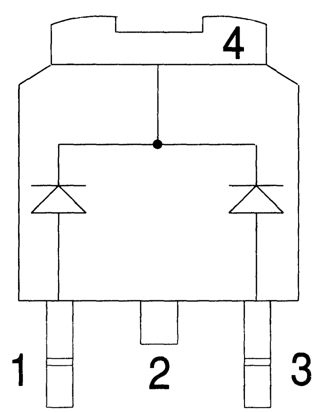
	SYMBOL		UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	60	V
Average Rectified Forward Current (T_C=120°C)	I_O	3.0	A
RMS Forward Current	$I_{F(RMS)}$	6.0	A
Peak Forward Surge Current (tp=10ms)	I_{FSM}	50	A
Peak Repetitive Reverse Surge Current (tp=2μs)	I_{RRM}	1.0	A
Critical Rate of Rise of Reverse Voltage	dV/dt	1000	V/μs
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance, Per Diode	Θ_{JC}	3.5	°C/W

ELECTRICAL CHARACTERISTICS PER DIODE: (TC=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
I_R	V_R=60V		30	μA
I_R	V_R=60V, T_C=125°C		10	mA
V_F	I_F=3.0A		0.65	V
V_F	I_F=3.0A, T_C=125°C		0.59	V

All dimensions in inches (mm).





LEAD CODE:

1) ANODE #1
2) CATHODE
3) ANODE #2
4) CATHODE

PIN 2 IS COMMON TO THE TAB (4).

DATA SHEET

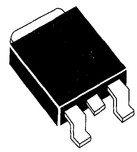
R1

NEW

CUD3-02

ULTRA-FAST RECOVERY RECTIFIER
SINGLE, 4.0 AMPS, 200 VOLTS

DPAK POWER!



DPAK CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CUD3-02 is a Silicon Ultra-Fast Recovery Rectifier designed for surface mount ultra fast switching applications requiring a low forward voltage drop.

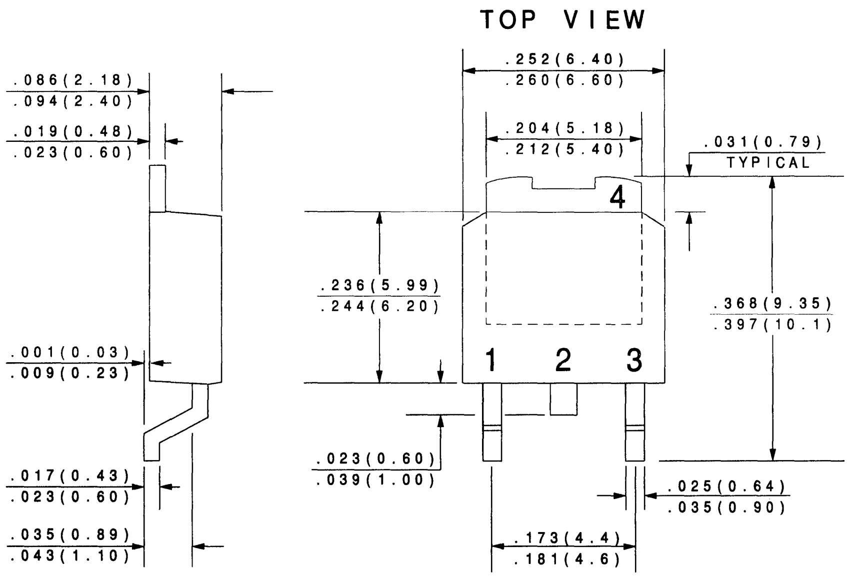
MAXIMUM RATINGS: (T_C=25°C unless otherwise noted)

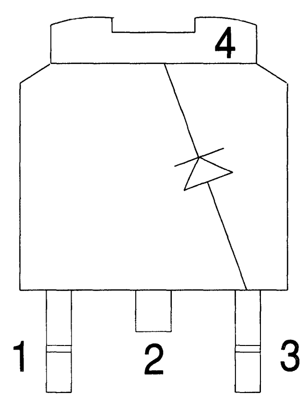
	SYMBOL		UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	200	V
Peak Non Repetitive Surge Reverse Voltage	V_{RSM}	200	V
Average Rectified Forward Current (T_C=130°C)	I_O	4.0	A
RMS Forward Current	$I_{F(RMS)}$	10	A
Peak Forward Surge Current (tp=10ms)	I_{FSM}	70	A
Operating and Storage			
Junction Temperature	T_J, T_{stg}	-40 to +150	°C
Thermal Resistance	Θ_{JC}	5.0	°C/W

ELECTRICAL CHARACTERISTICS: (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
I_R	V_R=200V		20	µA
I_R	V_R=200V, T_C=100°C		500	µA
V_F	I_F=12A		1.25	V
V_F	I_F=4.0A, T_C=100°C		0.85	V
t_{rr}	V_R=30V, I_F=1.0A, di/dt=50A/ms		35	ns

All dimensions in inches (mm).





LEAD CODE:

1) NO CONNECTION
2) CATHODE
3) ANODE
4) CATHODE

PIN 2 IS COMMON TO THE TAB (4).

DATA SHEET

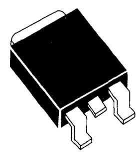
R1

NEW

CUD6-02C

ULTRA-FAST RECOVERY RECTIFIER
DUAL, COMMON CATHODE
5.0 AMPS, 200 VOLTS

DPAK POWER!



DPAK CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CUD6-02C is a Silicon Ultra-Fast Recovery Rectifier designed for surface mount ultra fast switching applications requiring a low forward voltage drop.

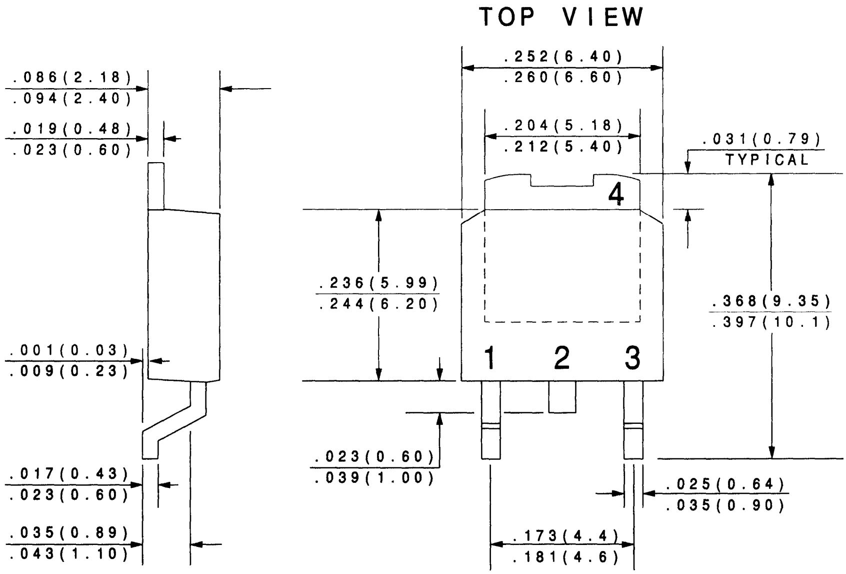
MAXIMUM RATINGS: (T_C=25°C unless otherwise noted)

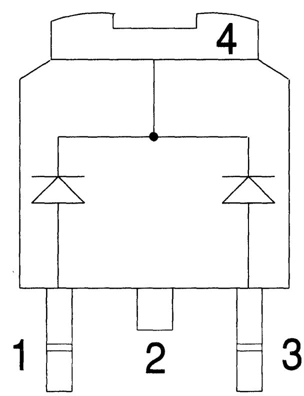
	SYMBOL		UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	200	V
Peak Non Repetitive Surge Reverse Voltage	V_{RSM}	200	V
Average Forward Current Per Diode (T_C=130°C)	I_O	5.0	A
Average Forward Current Per Device (T_C=130°C)	I_O	10	A
RMS Forward Current Per Diode	$I_{F(RMS)}$	10	A
Peak Forward Surge Current Per Diode (tp=10ms)	I_{FSM}	70	A
Operating and Storage			
Junction Temperature	T_J,T_{stg}	-40 to +150	°C
Thermal Resistance, Per Diode	Θ_{JC}	5.0	°C/W
Thermal Resistance, Per Device	Θ_{JC}	2.7	°C/W

ELECTRICAL CHARACTERISTICS: (T_C=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
I_R	V_R=200V		20	µA
I_R	V_R=200V, T_C=100°C		500	µA
V_F	I_F=10A		1.25	V
V_F	I_F=5.0A, T_C=100°C		0.85	V
t_{rr}	V_R=30V, I_F=1.0A, di/dt=50A/ms		35	ns

All dimensions in inches (mm).





LEAD CODE:

1) ANODE #1
2) CATHODE
3) ANODE #2
4) CATHODE

PIN 2 IS COMMON TO THE TAB (4).

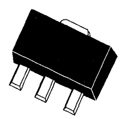
R1

DATA SHEET

Central™
Semiconductor Corp.

CXSH-4

SCHOTTKY BARRIER RECTIFIER



SOT-89 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CXSH-4 type is a schottky barrier rectifier mounted in an epoxy molded case using a metal to silicon junction to yield low forward voltage drop. This device utilizes a single chip with anode connections made to PIN 1 and PIN 3.

MAXIMUM RATINGS (T_A=25^{o}C)

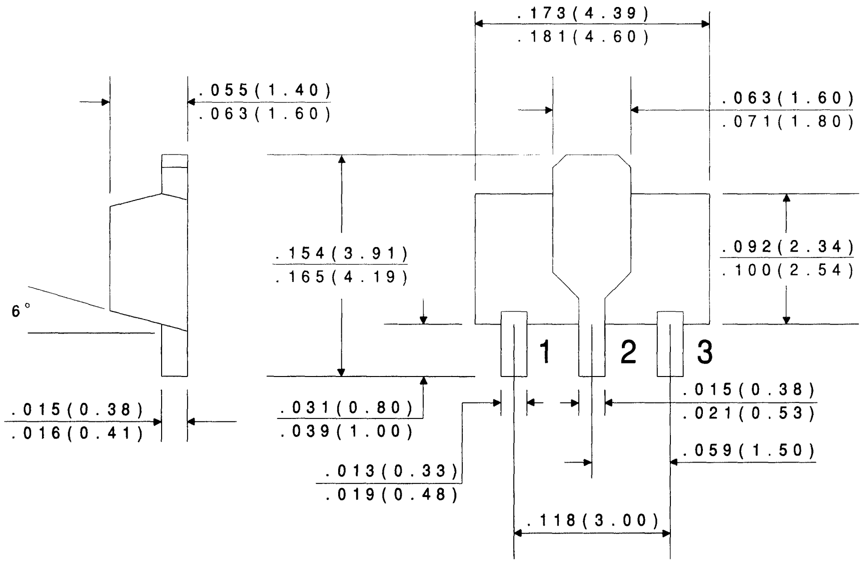
	SYMBOL		UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	40	V
DC Blocking Voltage	V_R	40	V
RMS Reverse Voltage	$V_{R(RMS)}$	28	V
Average Forward Current	I_O	1.0	A
Peak Forward Surge Current(8.3ms, Non-Rep.)	I_{FSM}	10	A
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	^{o}C

ELECTRICAL CHARACTERISTICS (T_A=25^{o}C unless otherwise noted)

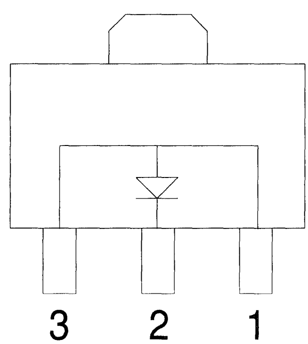
SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_R	V_R=40V		1.0	mA
I_R	V_R=40V, T_A=100^{o}C		10	mA
V_F	I_F=1.0A		0.55	V

All dimemsions in inches (mm).

BOTTOM VIEW



TOP VIEW



LEAD CODE:

1) ANODE
2) CATHODE
3) ANODE

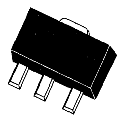
PIN 2 IS COMMON TO THE TAB.

DATA SHEET

R2

CXT2222A

NPN SILICON TRANSISTOR



SOT-89 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CXT2222A type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose and switching applications.

MAXIMUM RATINGS (T_A=25°C)

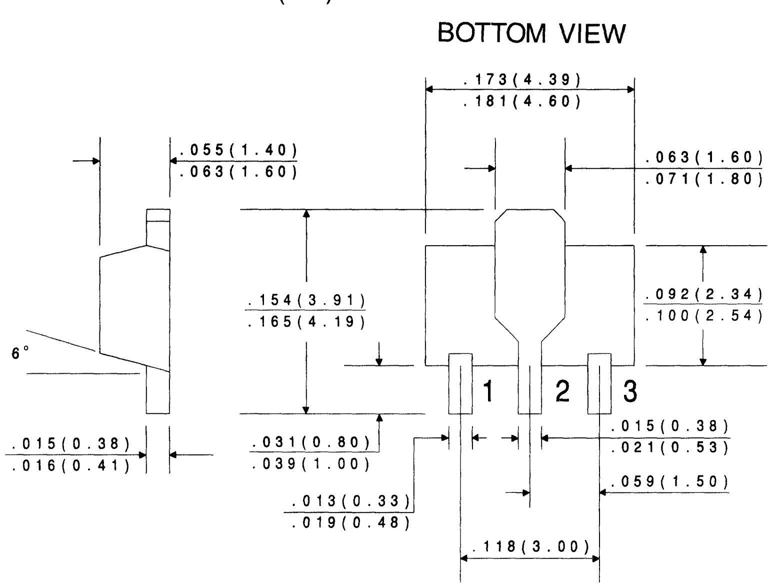
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	75	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	1.2	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	104	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=60V		10	nA
I_{CBO}	V_{CB}=60V, T_A=125°C		10	μA
I_{EBO}	V_{EB}=3.0V		10	nA
I_{CEV}	V_{CE}=60V, V_{EB}=3.0V		10	nA
BV_{CBO}	I_C=10μA	75		V
BV_{CEO}	I_C=10mA	40		V
BV_{EBO}	I_E=10μA	6.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.3	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		1.0	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA	0.6	1.2	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		2.0	V
h_{FE}	V_{CE}=10V, I_C=0.1mA	35		
h_{FE}	V_{CE}=10V, I_C=1.0mA	50		
h_{FE}	V_{CE}=10V, I_C=10mA	75		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=10V, I_C=150mA	100	300	
h_{FE}	V_{CE}=1.0V, I_C=150mA	50		
h_{FE}	V_{CE}=10V, I_C=500mA	40		
f_T	V_{CE}=20V, I_C=20mA, f=100MHz	300		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		8.0	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		25	pF
h_{ie}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	2.0	8.0	kΩ
h_{ie}	V_{CE}=10V, I_C=10mA, f=1.0kHz	0.25	1.25	kΩ
h_{re}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz		8.0	$x10^{-4}$
h_{re}	V_{CE}=10V, I_C=10mA, f=1.0kHz		4.0	$x10^{-4}$
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	50	300	
h_{fe}	V_{CE}=10V, I_C=10mA, f=1.0kHz	75	375	
h_{oe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	5.0	35	µmhos
h_{oe}	V_{CE}=10V, I_C=10mA, f=1.0kHz	25	200	µmhos
$rb'C_c$	V_{CB}=10V, I_E=20mA, f=31.8MHz		150	ps
NF	V_{CE}=10V, I_C=100µA, R_S=1.0kΩ, f=1.0kHz		4.0	dB
t_d	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		10	ns
t_r	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		25	ns
t_s	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA		225	ns
t_f	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA		60	ns

All dimensions in inches (mm).



LEAD CODE:

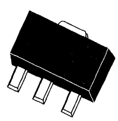
1) EMITTER
2) COLLECTOR
3) BASE

DATA SHEET

R2

CXT2907A

PNP SILICON TRANSISTOR



SOT-89 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CXT2907A type is an PNP silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose and switching applications.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	1.2	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	104	°C/W

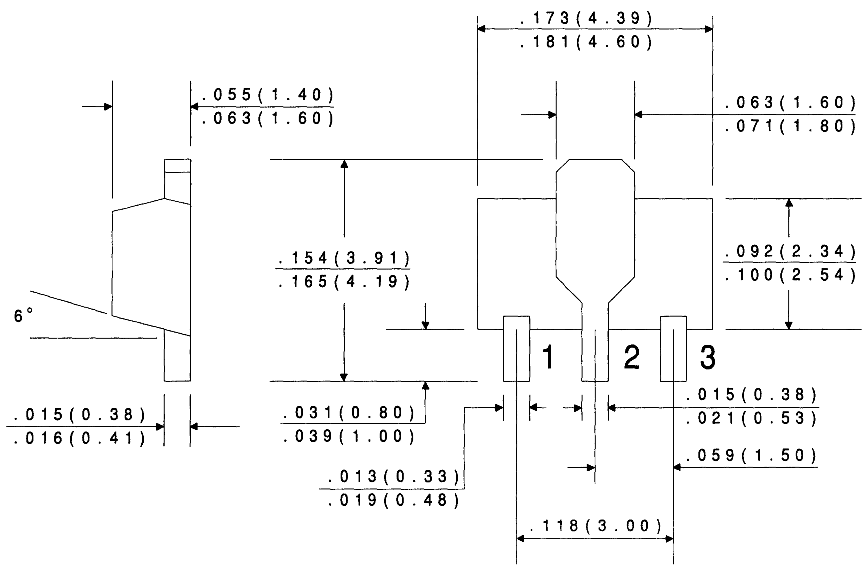
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=50V		10	nA
I_{CBO}	V_{CB}=50V, T_A=125°C		10	μA
I_{CEV}	V_{CE}=30V, V_{BE}=0.5V		50	nA
BV_{CBO}	I_C=10μA	60		V
BV_{CEO}	I_C=10mA	60		V
BV_{EBO}	I_E=10μA	5.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.4	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		1.6	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA		1.3	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		2.6	V
h_{FE}	V_{CE}=10V, I_C=0.1mA	75		
h_{FE}	V_{CE}=10V, I_C=1.0mA	100		
h_{FE}	V_{CE}=10V, I_C=10mA	100		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=10V, I_C=150mA	100	300	
h_{FE}	V_{CE}=10V, I_C=500mA	50		
f_T	V_{CE}=20V, I_C=50mA, f=100MHz	200		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		8.0	pF
C_{ib}	V_{BE}=2.0V, I_C=0, f=1.0MHz		30	pF
t_{on}	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		45	ns
t_d	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		10	ns
t_r	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		40	ns
t_{off}	V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA		100	ns
t_s	V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA		80	ns
t_f	V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA		30	ns

All dimensions in inches (mm).

BOTTOM VIEW



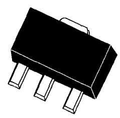
LEAD CODE:

1) EMITTER
2) COLLECTOR
3) BASE

R2

CXT3019

NPN SILICON TRANSISTOR



SOT-89 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CXT3019 type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high current general purpose amplifier applications.

MAXIMUM RATINGS (T_A=25°C)

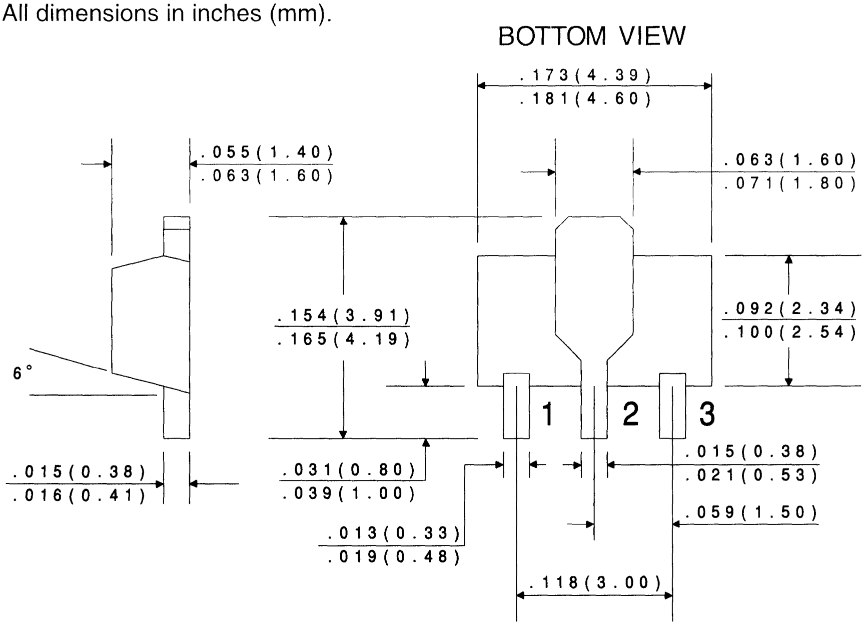
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	140	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	7.0	V
Collector Current	I_C	1.0	A
Collector Current (Peak)	I_{CM}	1.5	A
Power Dissipation	PD	1.2	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	104	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=90V		10	nA
I_{EBO}	V_{EB}=5.0V		10	nA
BV_{CBO}	I_C=100μA	140		V
BV_{CEO}	I_C=30mA	80		V
BV_{EBO}	I_E=100μA	7.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.2	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		0.5	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA		1.1	V
h_{FE}	V_{CE}=10V, I_C=0.1mA	50		
h_{FE}	V_{CE}=10V, I_C=10mA	90		
h_{FE}	V_{CE}=10V, I_C=150mA	100	300	
h_{FE}	V_{CE}=10V, I_C=500mA	50		
h_{FE}	V_{CE}=10V, I_C=1.0A	15		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
f_T	V_{CE}=10V, I_C=50mA, f=1.0MHz	100		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		12	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		60	pF
NF	V_{CE}=10V, I_C=100μA, R_S=1kΩ, f=1.0kHz		4.0	dB

All dimensions in inches (mm).



LEAD CODE:

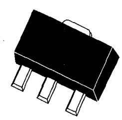
1) EMITTER
2) COLLECTOR
3) BASE

DATA SHEET

R2

CXT3904 NPN
CXT3906 PNP

COMPLEMENTARY SILICON TRANSISTORS



SOT-89 CASE

Central™
Semiconductor Corp.

DESCRIPTION

The CENTRAL SEMICONDUCTOR CXT3904, CXT3906 types are complementary silicon transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose and switching applications.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL	CXT3904	CXT3906	UNITS
Collector-Base Voltage	V_{CBO}	60	40	V
Collector-Emitter Voltage	V_{CEO}	40	40	V
Emitter-Base Voltage	V_{EBO}	6.0	5.0	V
Collector Current	I_C	200		mA
Power Dissipation	P_D	1.2		W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150		°C
Thermal Resistance	Θ_{JA}	104		°C/W

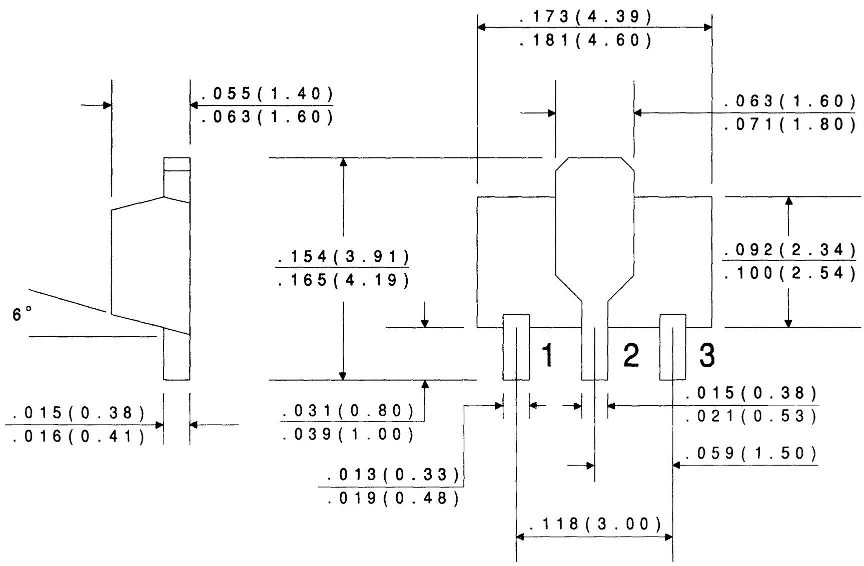
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

		CXT3904		CXT3906		
SYMBOL	TEST CONDITIONS	MIN	MAX	MIN	MAX	UNITS
I_{CEV}	V_{CE}=30V, V_{EB}=3.0V		50		50	nA
BV_{CBO}	I_C=10mA	60		40		V
BV_{CEO}	I_C=1.0mA	40		40		V
BV_{EBO}	I_E=10μA	6.0		5.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.20		0.25	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		0.30		0.40	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA	0.65	0.85	0.65	0.85	V
$V_{BE(SAT)}$	I_C=50mA, I_B=5.0mA		0.95		0.95	V
h_{FE}	V_{CE}=1.0V, I_C=0.1mA	40		60		
h_{FE}	V_{CE}=1.0V, I_C=1.0mA	70		80		
h_{FE}	V_{CE}=1.0V, I_C=10mA	100	300		100	300
h_{FE}	V_{CE}=1.0V, I_C=50mA	60		60		

SYMBOL	TEST CONDITIONS	CXT3904 MIN	CXT3904 MAX	CXT3906 MIN	CXT3906 MAX	UNITS
h_{FE}	V_{CE}=1.0V, I_C=100mA	30		30		
f_T	V_{CE}=20V, I_C=10mA, f=100MHz	300		250		MHz
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		4.0		4.5	pF
C_{ib}	V_{BE}=0.5V, I_C=0, f=1.0MHz		8.0		10	pF
h_{ie}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	1.0	10	2.0	12	kΩ
h_{re}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	0.5	8.0	0.1	10	$x10^{-4}$
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	100	400	100	400	
h_{oe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	1.0	40	3.0	60	mmhos
NF	V_{CE}=5.0V, I_C=100μA, R_S=1.0kΩ f=10Hz to 15.7kHz		5.0		4.0	dB
t_d	V_{CC}=3.0V, V_{BE}=0.5, I_C=10mA, I_{B1}=1.0mA		35		35	ns
t_r	V_{CC}=3.0V, V_{BE}=0.5, I_C=10mA, I_{B1}=1.0mA		35		35	ns
t_s	V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=1.0mA		200		225	ns
t_f	V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=1.0mA		50		75	ns

All dimensions in inches (mm).

BOTTOM VIEW



LEAD CODE:

1) EMITTER
2) COLLECTOR
3) BASE

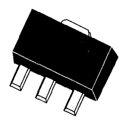
DATA SHEET

R2

Central™
Semiconductor Corp.

CXT4033

PNP SILICON TRANSISTOR



SOT-89 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR CXT4033 type is an PNP silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high current general purpose amplifier applications.

MAXIMUM RATINGS (T_A=25°C)

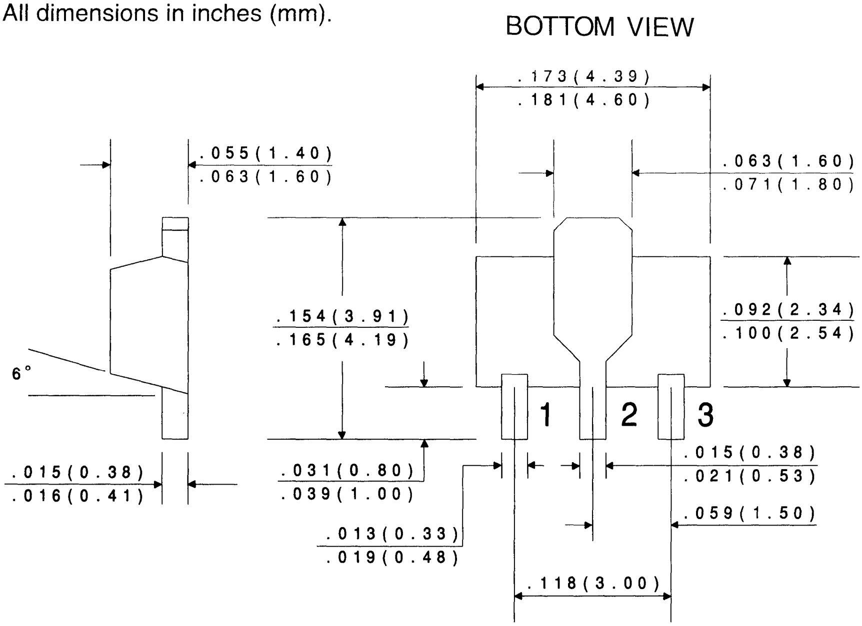
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	1.0	A
Collector Current (Peak)	I_{CM}	1.5	A
Power Dissipation	P_D	1.2	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	104	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=60V		50	nA
I_{EBO}	V_{EB}=5.0V		10	nA
BV_{CBO}	I_C=10μA	80		V
BV_{CEO}	I_C=10mA	80		V
BV_{EBO}	I_E=10μA	5.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.15	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		0.50	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA		0.90	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		1.10	V
h_{FE}	V_{CE}=5.0V, I_C=0.1mA	75		
h_{FE}	VCE=5.0V, I_C=100mA	100	300	
h_{FE}	V_{CE}=5.0V, I_C=500mA	70		
h_{FE}	V_{CE}=5.0V, I_C=1.0A	25		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
f_T	V_{CE}=10V, I_C=50mA, f=1.0MHz	100		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		20	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		110	pF

All dimensions in inches (mm).



LEAD CODE:

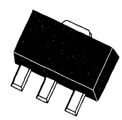
1) EMITTER
2) COLLECTOR
3) BASE

DATA SHEET

R2

CXT5401

PNP SILICON TRANSISTOR



SOT-89 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CXT5401 type is an PNP silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high voltage amplifier applications.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	160	V
Collector-Emitter Voltage	V_{CEO}	150	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	500	mA
Power Dissipation	P_D	1.2	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	104	°C/W

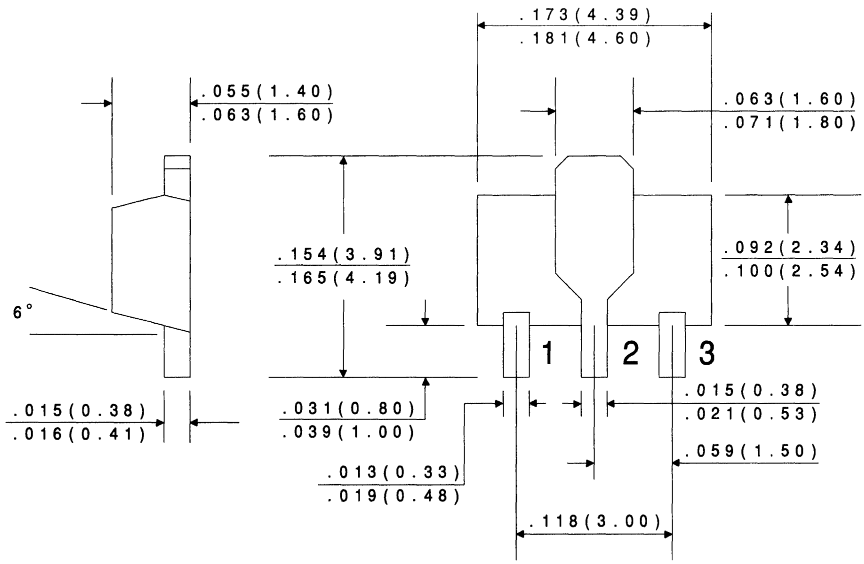
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=120V		50	nA
I_{CBO}	V_{CB}=120V, T_A=100°C		50	μA
BV_{CBO}	I_C=100μA	160		V
BV_{CEO}	I_C=1.0mA	150		V
BV_{EBO}	I_E=10μA	5.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.2	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		0.5	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA		1.0	V
$V_{BE(SAT)}$	I_C=50mA, I_B=5.0mA		1.0	V
h_{FE}	V_{CE}=5.0V, I_C=1.0mA	50		
h_{FE}	V_{CE}=5.0V, I_C=10mA	60	240	
h_{FE}	V_{CE}=5.0V, I_C=50mA	50		
f_T	V_{CE}=10V, I_C=10mA, f=100MHz	100	300	MHz

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		6.0	pF
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	40	200	
NF	V_{CE}=5.0V, I_C=200μA, R_S=10Ω f=10Hz to 15.7kHz		8.0	dB

All dimensions in inches (mm).

BOTTOM VIEW



LEAD CODE:

1) EMITTER
2) COLLECTOR
3) BASE

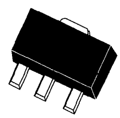
DATA SHEET

R2

Central™
Semiconductor Corp.

CXT5551

NPN SILICON TRANSISTOR



SOT-89 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CXT5551 type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high voltage amplifier applications.

MAXIMUM RATINGS ($T_A=25^oC$)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	180	V
Collector-Emitter Voltage	V_{CEO}	160	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	1.2	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	^oC
Thermal Resistance	Θ_{JA}	104	$^oC/W$

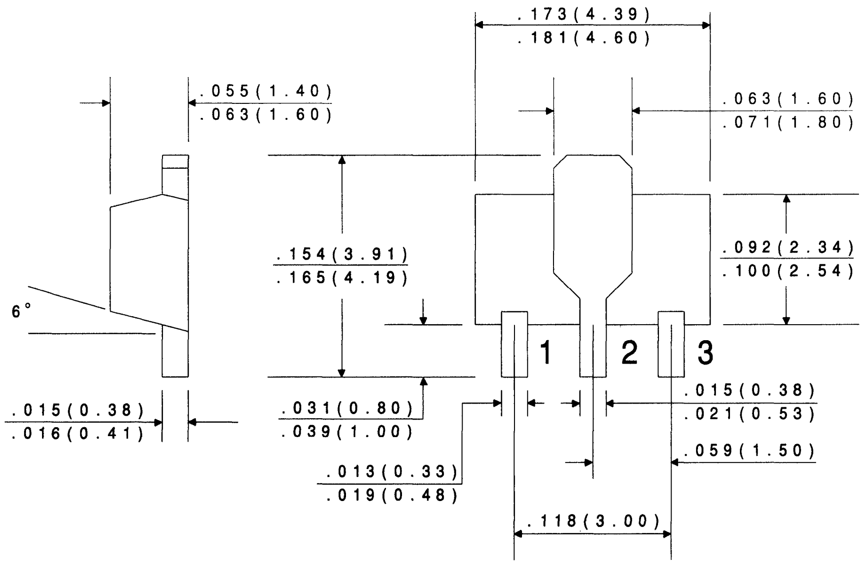
ELECTRICAL CHARACTERISTICS ($T_A=25^oC$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	$V_{CB}=120V$		50	nA
I_{CBO}	$V_{CB}=120V$, $T_A=100^oC$		50	μA
BV_{CBO}	$I_C=100mA$	180		V
BV_{CEO}	$I_C=1.0mA$	160		V
BV_{EBO}	$I_E=10mA$	6.0		V
$V_{CE(SAT)}$	$I_C=10mA$, $I_B=1.0mA$		0.15	V
$V_{CE(SAT)}$	$I_C=50mA$, $I_B=5.0mA$		0.20	V
$V_{BE(SAT)}$	$I_C=10mA$, $I_B=1.0mA$		1.00	V
$V_{BE(SAT)}$	$I_C=50mA$, $I_B=5.0mA$		1.00	V
h_{FE}	$V_{CE}=5.0V$, $I_C=1.0mA$	80		
h_{FE}	$V_{CE}=5.0V$, $I_C=10mA$	80	250	
h_{FE}	$V_{CE}=5.0V$, $I_C=50mA$	30		
f_T	$V_{CE}=10V$, $I_C=10mA$, f=100MHz	100	300	MHz

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		6.0	pF
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	50	200	
NF	V_{CE}=5.0V, I_C=200mA, R_S=10W f=10Hz to 15.7kHz		8.0	dB

All dimensions in inches (mm).

BOTTOM VIEW



LEAD CODE:

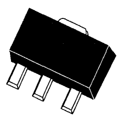
1) EMITTER
2) COLLECTOR
3) BASE

DATA SHEET

R2

CXTA14 NPN
CXTA64 PNP

SILICON COMPLEMENTARY DARLINGTON TRANSISTORS



SOT-89 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CXTA14, CXTA64 types are complementary silicon Darlington transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for applications requiring extremely high gain.

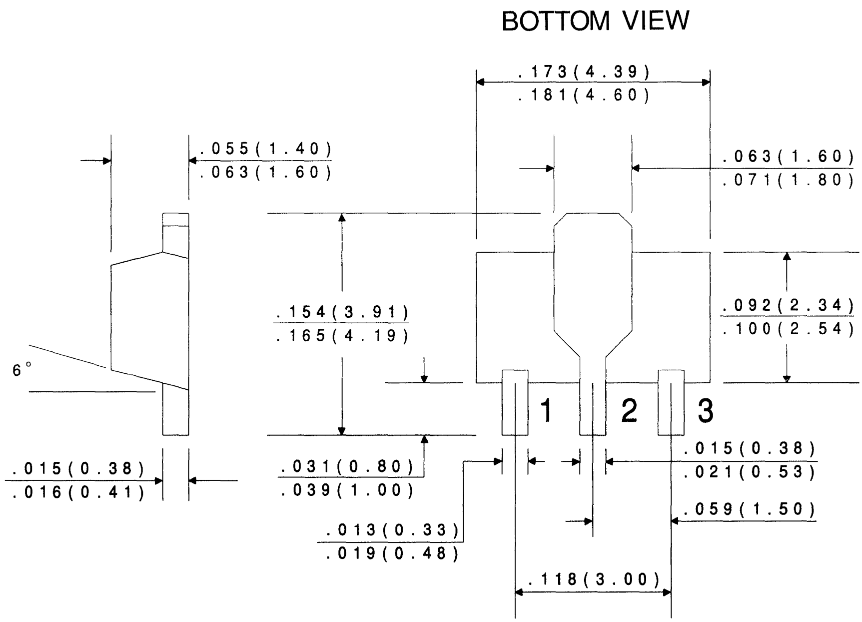
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Base Voltage	V_{EBO}	10	V
Collector Current	I_C	500	mA
Power Dissipation	P_D	1.2	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	104	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=30V		100	nA
I_{CEO}	V_{CE}=10V		100	nA
BV_{CES}	I_C=100μA	30		V
$V_{CE(SAT)}$	I_C=100mA, I_B=0.1mA		1.5	V
$V_{BE(ON)}$	V_{CE}=5.0V, I_C=100mA		2.0	V
h_{FE}	V_{CE}=5.0V, I_C=10mA	10,000		
h_{FE}	V_{CE}=5.0V, I_C=100mA	20,000		
f_T	V_{CE}=5.0V, I_C=10mA, f=100MHz	125		MHz

All dimensions in inches (mm).



LEAD CODE:

1) EMITTER
2) COLLECTOR
3) BASE

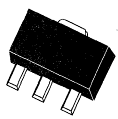
DATA SHEET

R2

NEW

CXTA27

NPN DARLINGTON TRANSISTOR



SOT-89 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

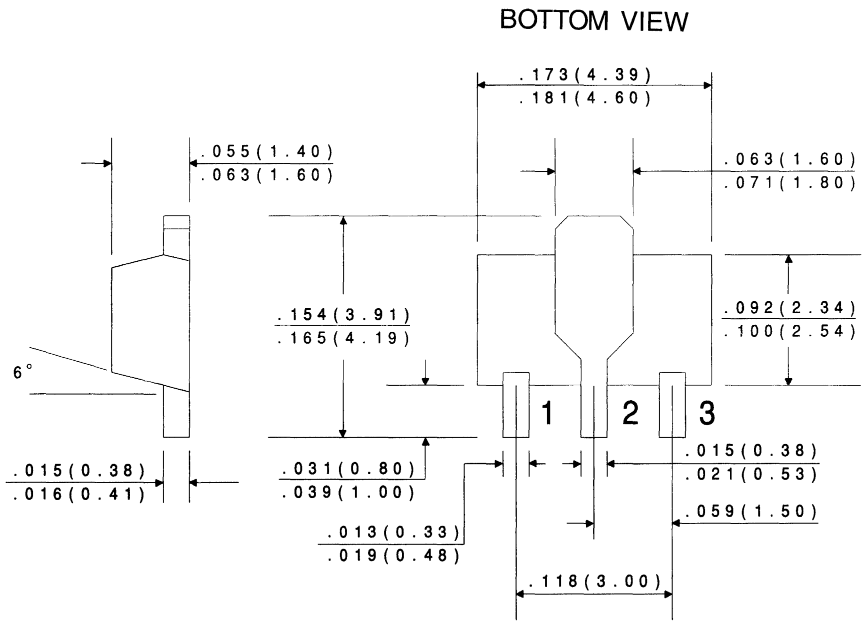
The CENTRAL SEMICONDUCTOR CXTA27 type is a NPN Silicon Darlington Transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for applications requiring high voltage.

MAXIMUM RATINGS (T_A=25°C)	**SYMBOL**		**UNITS**
Collector-Emitter Voltage	V_{CES}	60	V
Emitter-Base Voltage	V_{EBO}	10	V
Collector Current	I_C	500	mA
Power Dissipation	P_D	1.2	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	104	°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	**TEST CONDITIONS**	**MIN**	**MAX**	**UNITS**
I_{CBO}	V_{CB}=50V		100	nA
I_{CES}	V_{CE}=50V		500	nA
I_{EBO}	V_{EB}=10V		100	nA
B_{VCBO}	I_C=100μA	60		V
B_{VCES}	I_C=100μA	60		V
$V_{CE(SAT)}$	I_C=100mA, I_B=0.1mA		1.5	V
$V_{BE(ON)}$	V_{CE}=5.0V, I_C=100mA		2.0	V
h_{FE}	V_{CE}=5.0V, I_C=10mA	10,000		
h_{FE}	V_{CE}=5.0V, I_C=100mA	10,000		
f_T	V_{CE}=5.0V, I_C=10mA, f=100MHz	125		MHz

All dimensions in inches (mm).



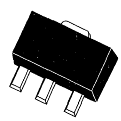
LEAD CODE:

1) EMITTER
2) COLLECTOR
3) BASE

DATA SHEET

CXTA42 NPN
CXTA92 PNP

SILICON COMPLIMENTARY HIGH VOLTAGE TRANSISTOR



SOT-89 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CXTA42, CXTA92 types are complementary surface mount epoxy molded silicon planar epitaxial transistors designed for high voltage applications.

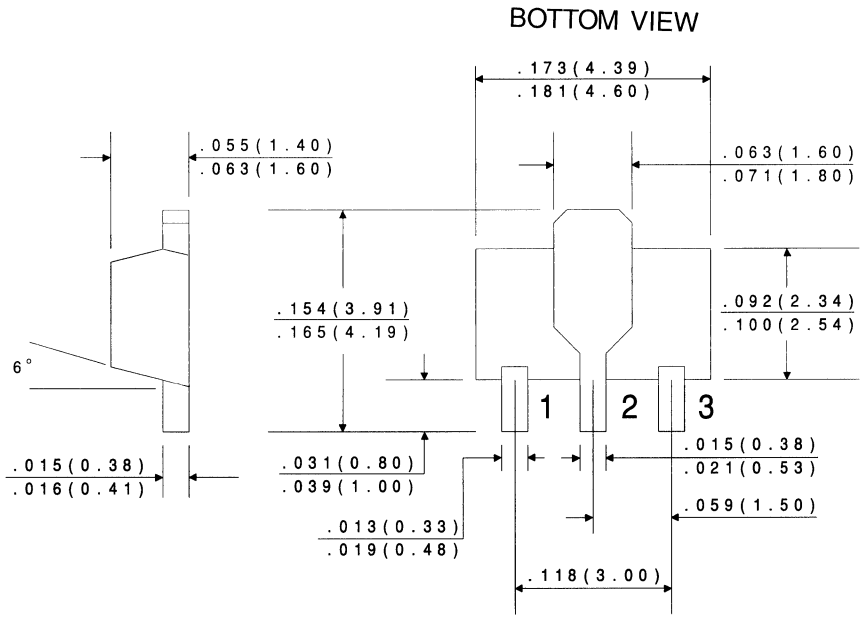
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL	CXTA42	CXTA92	UNITS
Collector-Base Voltage	V_{CBO}	300	300	V
Collector-Emitter Voltage	V_{CEO}	300	300	V
Emitter-Base Voltage	V_{EBO}	6.0	5.0	V
Collector Current	I_C	500		mA
Power Dissipation	P_D	1.2		W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150		°C
Thermal Resistance	Θ_{JA}	104		°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

		CXTA42		CXTA92		
SYMBOL	TEST CONDITIONS	MIN	MAX	MIN	MAX	UNITS
I_{CBO}	V_{CB}=200V		100		250	nA
I_{EBO}	V_{BE}=6.0V		100		-	nA
I_{EBO}	V_{BE}=3.0V		-		100	nA
BV_{CBO}	I_C=100μA	300		300		V
BV_{CEO}	I_C=1.0mA	300		300		V
BV_{EBO}	I_E=100μA	6.0		5.0		V
$V_{CE(SAT)}$	I_C=20mA, I_B=2.0mA		0.5		0.5	V
$V_{BE(SAT)}$	I_C=20mA, I_B=2.0mA		0.9		0.9	V
h_{FE}	V_{CE}=10V, I_C=1.0mA	25		25		
h_{FE}	V_{CE}=10V, I_C=10mA	40		40		
h_{FE}	V_{CE}=10V, I_C=30mA	40		25		
f_T	V_{CE}=20V, I_C=10mA, f=100MHz	50		50		MHz
C_{ob}	V_{CB}=20V, I_E=0, f=1.0MHz		3.0		6.0	pF

All dimensions in inches (mm).



LEAD CODE:

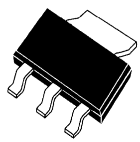
1) EMITTER
2) COLLECTOR
3) BASE

DATA SHEET

R2

CZS5064

SILICON CONTROLLED RECTIFIER



SOT-223 CASE

Central™
Semiconductor Corp.

DESCRIPTION

The CENTRAL SEMICONDUCTOR CZS5064 type is an epoxy molded PNPN Silicon Controlled Rectifier manufactured in an epoxy molded surface mount package, designed for control systems and sensing circuit applications.

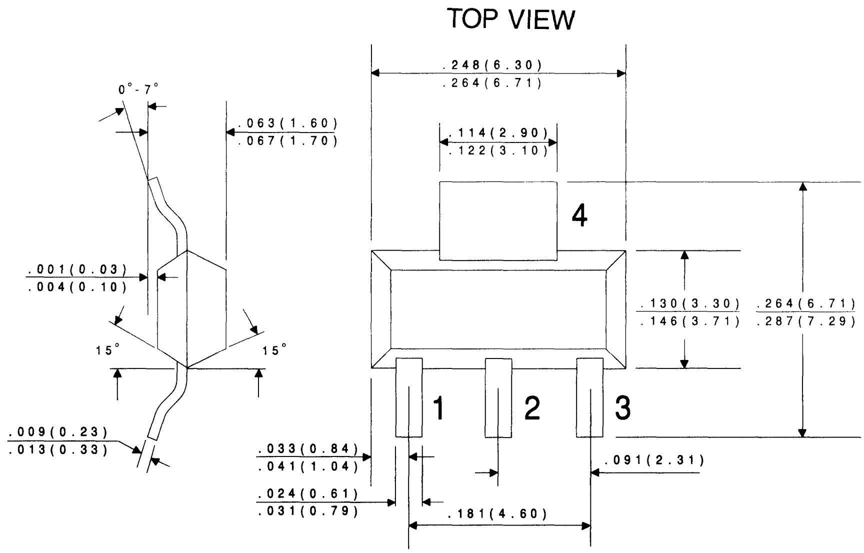
MAXIMUM RATINGS (T_A=25°C unless otherwise noted)

	SYMBOL		UNITS
Peak Repetitive Off-State Voltage	V_{DRM}	400	V
Peak Repetitive Reverse Voltage	V_{RRM}	400	V
RMS On-State Current	$I_{T(RMS)}$	0.8	A
Average On-State Current (T_C=67°C)	$I_{T(AV)}$	0.51	A
Operating Junction Temperature	T_J	-40 to +125	°C
Storage Temperature	T_{stg}	-40 to +150	°C
Thermal Resistance	Θ_{JA}	150	°C/W
Thermal Resistance	Θ_{JC}	25	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{DRM}	V_D=400V, R_{GK}=1KΩ, T_C=125°C		50	μA
I_{RRM}	V_D=400V, R_{GK}=1KΩ, T_C=125°C		50	μA
V_T	I_T=1.2A		1.7	V
I_{GT}	V_D=7.0V, R_L=100Ω, R_{GK}=1KΩ		200	μA
V_{GT}	V_D=7.0V, R_L=100Ω, R_{GK}=1KΩ		0.8	V
V_{GD}	V_D=400V, R_L=100Ω, T_C=125°C	0.1		V
I_H	V_D=7.0, R_{GK}=1KΩ		5.0	mA
t_{ON}	V_D=400V, I_{GT}=1.0mA, I_F=1.0A, R_{GK}=1.0Ω, di/dt=6.0A/μs		2.8 TYP	μs

All dimensions in inches (mm).



LEAD CODE:

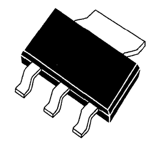
1) CATHODE
2) ANODE
3) GATE
4) ANODE

DATA SHEET

R1

CZSH-4

SCHOTTKY BARRIER RECTIFIER



SOT-223 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZSH-4 type is a schottky barrier rectifier mounted in an epoxy molded case using a metal to silicon junction to yield low forward voltage drop. This device utilizes a single chip with anode connections made to PIN 1 and PIN 3.

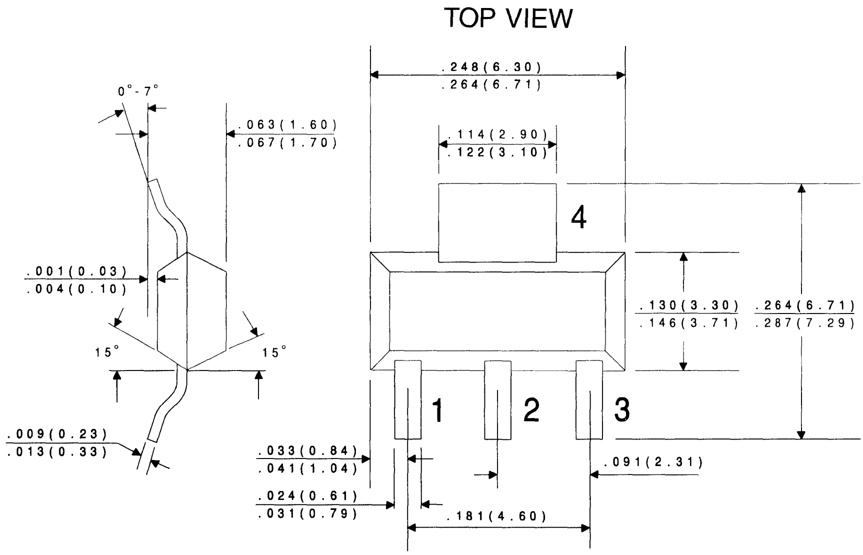
MAXIMUM RATINGS (T_A=25°C)

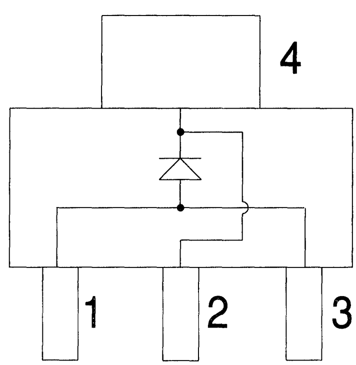
	SYMBOL		UNITS
Peak Repetitive Reverse Voltage	V_{RRM}	40	V
DC Blocking Voltage	V_R	40	V
RMS Reverse Voltage	$V_{R(RMS)}$	28	V
Average Forward Current	I_O	2.0	A
Peak Forward Surge Current (8.3ms, Non-Rep.)	I_{FSM}	10	A
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_R	V_R=40V		1.0	mA
I_R	V_R=40V, T_A=100°C		10	mA
V_F	I_F=1.0A		0.50	V
V_F	I_F=2.0A		0.60	V

All dimensions in inches (mm).





LEAD CODE:

1) ANODE
2) CATHODE
3) ANODE
4) CATHODE

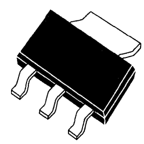
R2

NEW

CZT31C NPN
CZT32C PNP

2.0W COMPLEMENTARY SILICON POWER TRANSISTOR

POWER 223™



SOT-223 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZT31C and CZT32C types are surface mount epoxy molded complementary silicon transistors manufactured by the epitaxial base process, designed for surface mounted power amplifier applications up to 3.0 amps.

MAXIMUM RATINGS: (T_A=25°C)

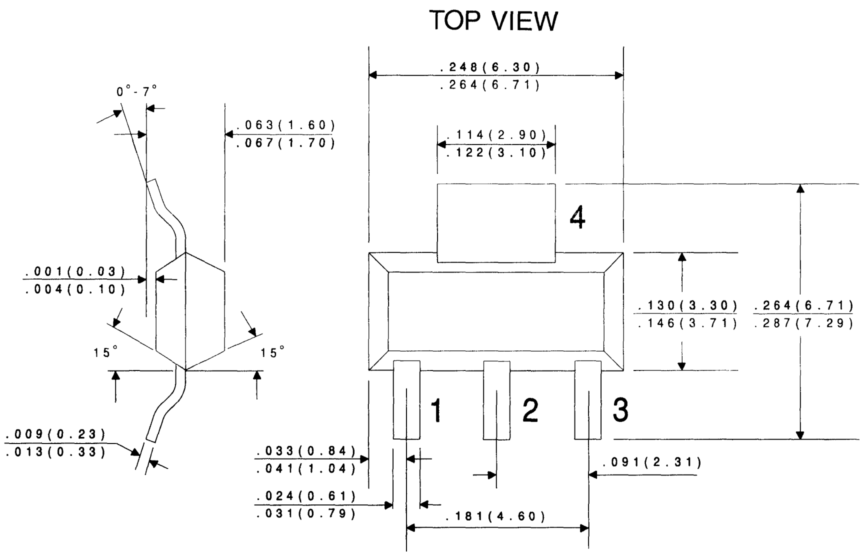
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	3.0	A
Peak Collector Current	I_{CM}	6.0	A
Base Current	I_B	1.0	A
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CES}	V_{CE}=100V		200	μA
I_{CEO}	V_{CE}=60V		300	μA
I_{EBO}	V_{EB}=5.0V		1.0	mA
BV_{CEO}	I_C=30mA	100		V
* $V_{CE(SAT)}$	I_C=3.0A, I_B=375mA		1.2	V
* $V_{BE(ON)}$	V_{CE}=4.0V, I_C=3.0A		1.8	V
* h_{FE}	V_{CE}=4.0V, I_C=1.0A	25		
* h_{FE}	V_{CE}=4.0V, I_C=3.0A	10	100	
f_T	V_{CE}=10V, I_C=500mA, f=1.0MHz	3.0		MHz

* Pulsed, 2%D.C.

All dimensions in inches (mm).



LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

DATA SHEET

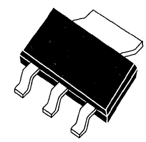
R1

NEW

CZT122 NPN
CZT127 PNP

COMPLEMENTARY SILICON POWER DARLINGTON TRANSISTOR

POWER 223™



SOT-223 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZT122, CZT127 types are Complementary Silicon Power Darlington Transistors manufactured in a surface mount package designed for low speed switching and amplifier applications.

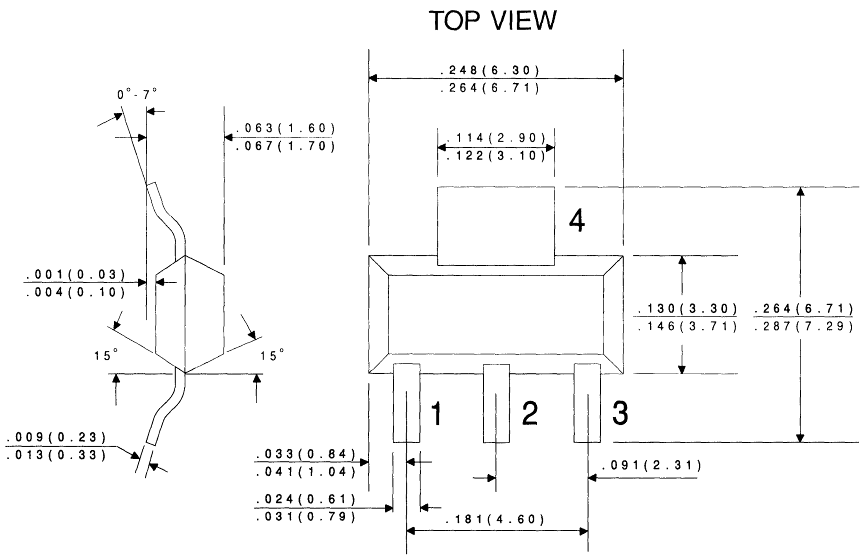
MAXIMUM RATINGS: (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	5.0	A
Peak Collector Current	I_{CM}	8.0	A
Base Current	I_B	120	mA
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CEO}	V_{CE}=50V		500	µA
I_{CBO}	V_{CB}=100V		200	µA
I_{EBO}	V_{EB}=5.0V		2.0	mA
BV_{CEO}	I_C=30mA	100		V
$V_{CE(SAT)}$	I_C=3.0A, I_B=12mA		2.0	V
$V_{CE(SAT)}$	I_C=5.0A, I_B=20mA		4.0	V
$V_{BE(ON)}$	V_{CE}=3.0V, I_C=3.0A		2.5	V
h_{FE}	V_{CE}=3.0V, I_C=500mA	1000		
h_{FE}	V_{CE}=3.0V, I_C=3.0A	1000		
f_T	V_{CE}=4.0V, I_C=3.0A, f=1.0MHz	4.0		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz (CZT122)		200	pF
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz (CZT127)		300	pF

All dimensions in inches (mm).



LEAD CODE:

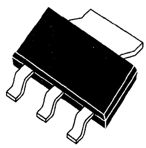
1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

DATA SHEET

R1

CZT2000

NPN SILICON
EXTREMELY HIGH VOLTAGE
DARLINGTON TRANSISTOR



SOT-223 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZT2000 type is an NPN Epitaxial Planar Silicon Darlington Transistor manufactured in an epoxy molded surface mount package, designed for applications requiring extremely high voltages and high gain capability.

MAXIMUM RATINGS (T_A=25°C)

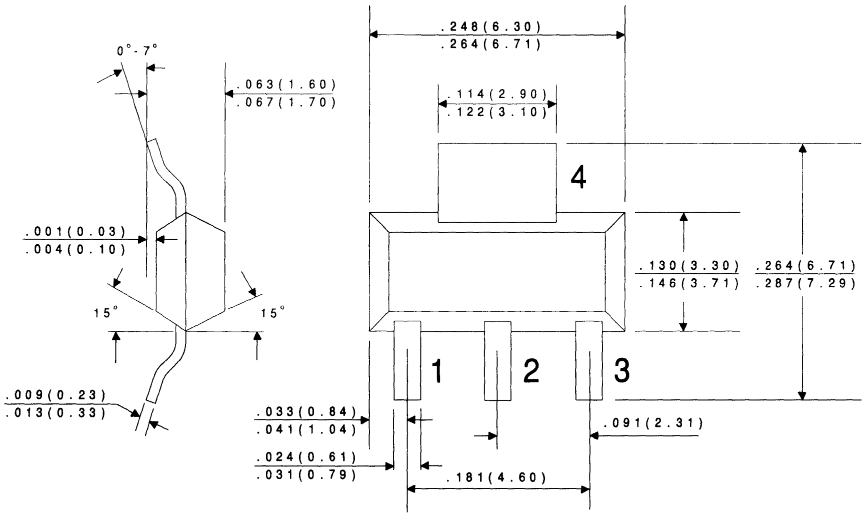
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	200	V
Collector-Emitter Voltage	V_{CES}	200	V
Emitter-Base Voltage	V_{EBO}	10	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=180V		500	nA
I_{EBO}	V_{BE}=10V		100	nA
BV_{CES}	I_C=1.0mA	200		V
$V_{CE(SAT)}$	I_C=20mA, I_B=25μA		0.9	V
$V_{CE(SAT)}$	I_C=80mA, I_B=40μA		1.1	V
$V_{CE(SAT)}$	I_C=160mA, I_B=100μA		1.2	V
$V_{BE(ON)}$	V_{CE}=5.0V, I_C=160mA		2.0	V
h_{FE}	V_{CE}=5.0V, I_C=100μA	3,000		
h_{FE}	V_{CE}=5.0V, I_C=10mA	3,000		
h_{FE}	V_{CE}=5.0V, I_C=160mA	3,000		

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

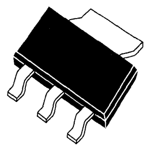
1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

DATA SHEET

R2

CZT2222A

NPN SILICON TRANSISTOR



SOT-223 CASE

Central™
Semiconductor Corp.

DESCRIPTION

The CENTRAL SEMICONDUCTOR CZT2222A type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for general purpose amplifier and switching applications.

MAXIMUM RATINGS (T_A=25°C)

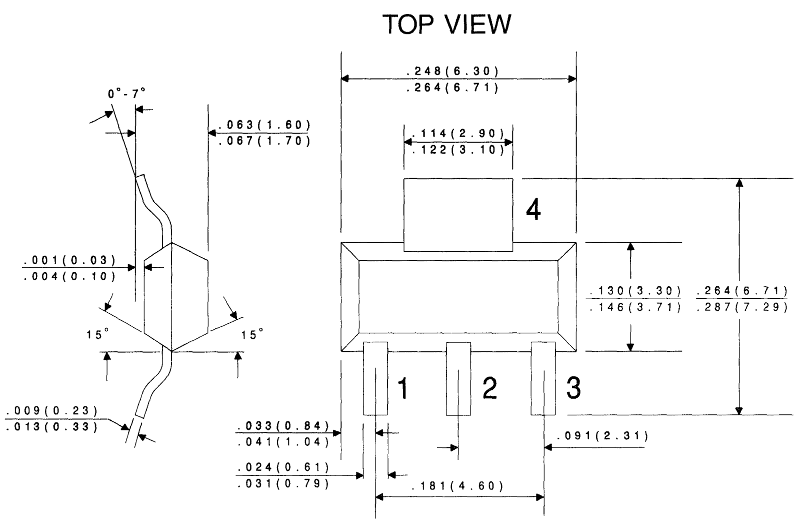
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	75	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=60V		10	nA
I_{CBO}	V_{CB}=60V, T_A=125°C		10	μA
I_{EBO}	V_{EB}=3.0V		10	nA
I_{CEV}	V_{CE}=60V, V_{EB}=3.0V		10	nA
BV_{CBO}	I_C=10μA	75		V
BV_{CEO}	I_C=10mA	40		V
BV_{EBO}	I_E=10μA	6.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.3	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		1.0	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA	0.6	1.2	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		2.0	V
h_{FE}	V_{CE}=10V, I_C=0.1mA	35		
h_{FE}	V_{CE}=10V, I_C=1.0mA	50		
h_{FE}	V_{CE}=10V, I_C=10mA	75		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=10V, I_C=150mA	100	300	
h_{FE}	V_{CE}=1.0V, I_C=150mA	50		
h_{FE}	V_{CE}=10V, I_C=500mA	40		
f_T	V_{CE}=20V, I_C=20mA, f=100MHz	300		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		8.0	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		25	pF
h_{ie}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	2.0	8.0	kΩ
h_{ie}	V_{CE}=10V, I_C=10mA, f=1.0kHz	0.25	1.25	kΩ
h_{re}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz		8.0	$x10^{-4}$
h_{re}	V_{CE}=10V, I_C=10mA, f=1.0kHz		4.0	$x10^{-4}$
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	50	300	
h_{fe}	V_{CE}=10V, I_C=10mA, f=1.0kHz	75	375	
h_{oe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	5.0	35	μmhos
h_{oe}	V_{CE}=10V, I_C=10mA, f=1.0kHz	25	200	μmhos
$rb'C_c$	V_{CB}=10V, I_E=20mA, f=31.8MHz		150	ps
NF	V_{CE}=10V, I_C=100μA, R_S=1.0kΩ, f=1.0kHz		4.0	dB
t_d	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		10	ns
t_r	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		25	ns
t_s	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA		225	ns
t_f	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA		60	ns

All dimensions in inches (mm).



LEAD CODE:

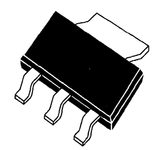
1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

DATA SHEET

R2

CZT2907A

PNP SILICON TRANSISTOR



SOT-223 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZT2907A type is an PNP silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for general purpose amplifier and switching applications.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

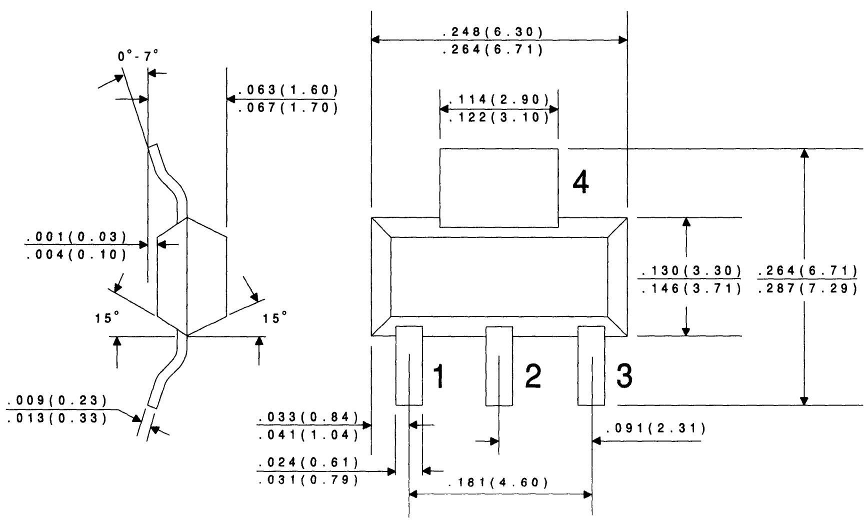
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=50V		10	nA
I_{CBO}	V_{CB}=50V, T_A=125°C		10	μA
I_{CEV}	V_{CE}=30V, V_{BE}=0.5V		50	nA
BV_{CBO}	I_C=10μA	60		V
BV_{CEO}	I_C=10mA	60		V
BV_{EBO}	I_E=10μA	5.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.4	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		1.6	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA		1.3	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		2.6	V
h_{FE}	V_{CE}=10V, I_C=0.1mA	75		
h_{FE}	V_{CE}=10V, I_C=1.0mA	100		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=10V, I_C=10mA	100		
h_{FE}	V_{CE}=10V, I_C=150mA	100	300	
h_{FE}	V_{CE}=10V, I_C=500mA	50		
f_T	V_{CE}=20V, I_C=50mA, f=100MHz	200		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		8.0	pF
C_{ib}	V_{BE}=2.0V, I_C=0, f=1.0MHz		30	pF
t_{on}	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		45	ns
t_d	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		10	ns
t_r	V_{CC}=30V, V_{BE}=0.5, I_C=150mA, I_{B1}=15mA		40	ns
t_{off}	V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA		100	ns
t_s	V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA		80	ns
t_f	V_{CC}=6.0V, I_C=150mA, I_{B1}=I_{B2}=15mA		30	ns

All dimensions in inches (mm).

TOP VIEW



DATA SHEET

LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

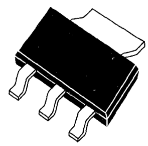
R2

NEW

CZT2955 PNP
CZT3055 NPN

2.0W SURFACE MOUNT COMPLEMENTARY SILICON POWER TRANSISTOR

POWER 223™



SOT-223 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZT2955 and CZT3055 types are surface mount epoxy molded complementary silicon transistors manufactured by the epitaxial base process, designed for surface mounted power amplifier applications up to 6.0 amps.

MAXIMUM RATINGS: (T_A=25°C)

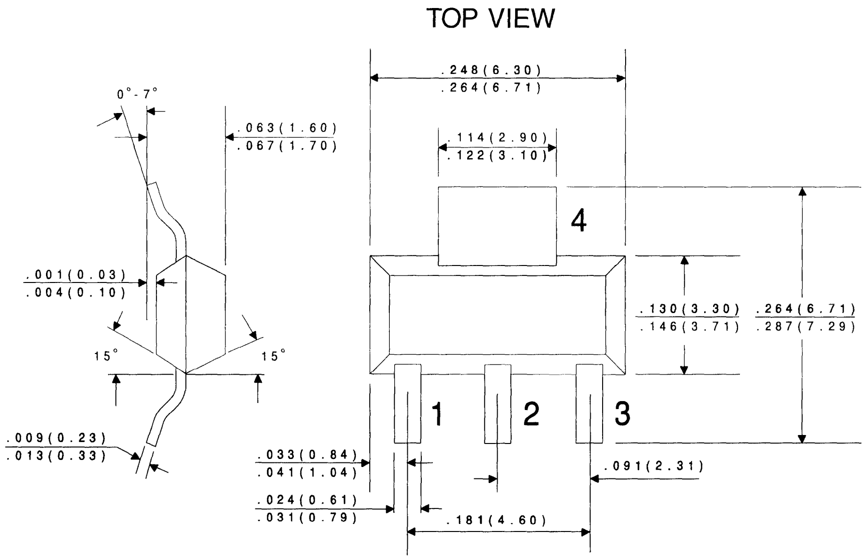
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CER}	70	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	7.0	V
Collector Current	I_C	6.0	A
Base Current	I_B	3.0	A
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CEO}	V_{CE}=30V		700	µA
I_{CEV}	V_{CE}=100V, $V_{EB(off)}$=1.5V		1.0	mA
I_{EBO}	V_{EB}=7.0V		5.0	mA
BV_{CER}	I_C=30mA, R_{BE}=100Ω	70		V
BV_{CEO}	I_C=30mA	60		V
* $V_{CE(SAT)}$	I_C=4.0A, I_B=400mA		1.1	V
* $V_{BE(ON)}$	V_{CE}=4.0V, I_C=4.0A		1.5	V
* h_{FE}	V_{CE}=4.0V, I_C=4.0A	20	70	
* h_{FE}	V_{CE}=4.0V, I_C=6.0A	5.0		
f_T	V_{CE}=10V, I_C=500mA, f=1.0MHz	2.5		MHz

* Pulsed, 2% D.C.

All dimensions in inches (mm).



LEAD CODE:

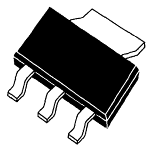
1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

DATA SHEET

R1

CZT3019

NPN SILICON TRANSISTOR



SOT-223 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZT3019 type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high current general purpose amplifier applications.

MAXIMUM RATINGS (T_A=25°C)

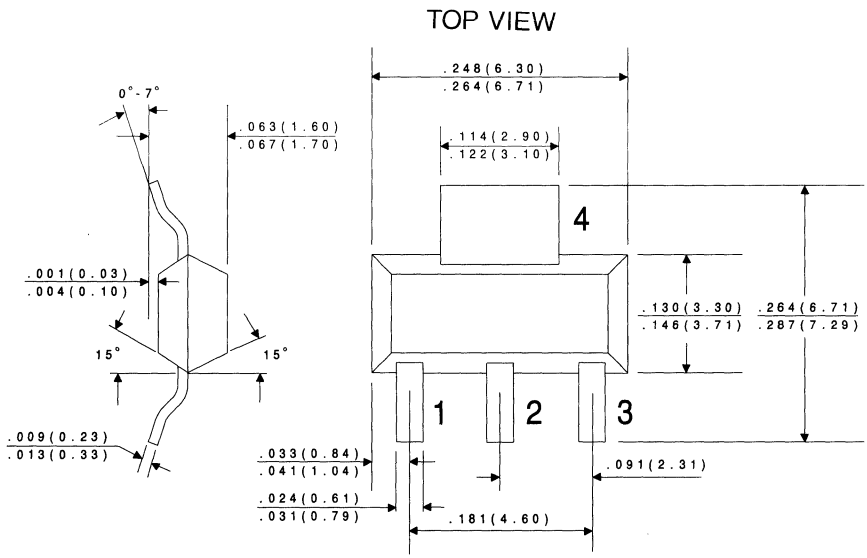
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	120	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	7.0	V
Collector Current	I_C	1.0	A
Collector Current (Peak)	I_{CM}	1.5	A
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=90V		10	nA
I_{EBO}	V_{EB}=5.0V		10	nA
BV_{CBO}	I_C=100μA	120		V
BV_{CEO}	I_C=30mA	80		V
BV_{EBO}	I_E=100μA	7.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.2	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		0.5	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA		1.1	V
h_{FE}	V_{CE}=10V, I_C=0.1mA	50		
h_{FE}	V_{CE}=10V, I_C=10mA	90		
h_{FE}	V_{CE}=10V, I_C=150mA	100	300	
h_{FE}	V_{CE}=10V, I_C=500mA	50		
h_{FE}	V_{CE}=10V, I_C=1.0A	15		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
f_T	V_{CE}=10V, I_C=50mA, f=1.0MHz	100		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		12	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		60	pF
NF	V_{CE}=10V, I_C=100μA, R_S=1kΩ, f=1.0kHz		4.0	dB

All dimensions in inches (mm).



LEAD CODE:

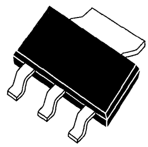
1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

DATA SHEET

R2

CZT3904 NPN
CZT3906 PNP

COMPLEMENTARY SILICON TRANSISTORS



SOT-223 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZT3904, CZT3906 types are complementary silicon transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose and switching applications.

MAXIMUM RATINGS (T_A=25^{o}C)

	SYMBOL	CZT3904	CZT3906	UNITS
Collector-Base Voltage	V_{CBO}	60	40	V
Collector-Emitter Voltage	V_{CEO}	40	40	V
Emitter-Base Voltage	V_{EBO}	6.0	5.0	V
Collector Current	I_C	200		mA
Power Dissipation	P_D	2.0		W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150		^{o}C
Thermal Resistance	Θ_{JA}	62.5		^{o}C/W

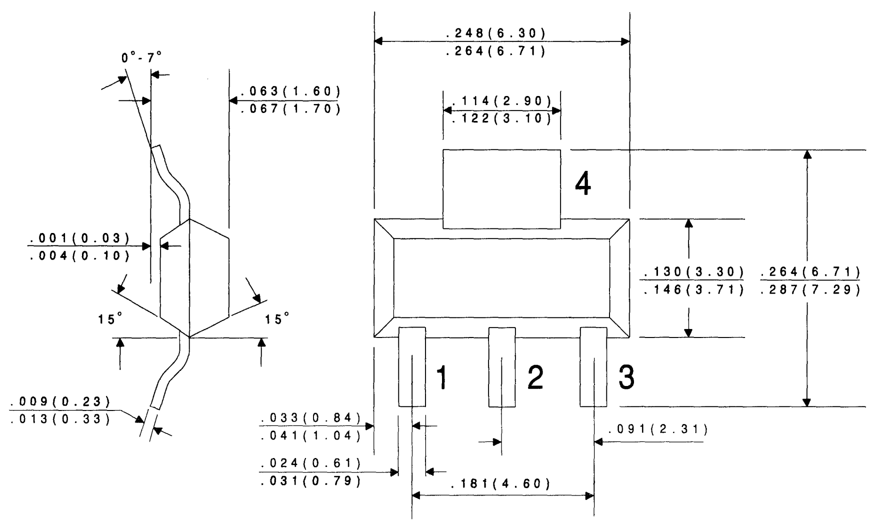
ELECTRICAL CHARACTERISTICS (T_A=25^{o}C unless otherwise noted)

		CZT3904		CZT3906		
SYMBOL	TEST CONDITIONS	MIN	MAX	MIN	MAX	UNITS
I_{CEV}	V_{CE}=30V, V_{EB}=3.0V		50		50	nA
BV_{CBO}	I_C=10μA	60		40		V
BV_{CEO}	I_C=1.0mA	40		40		V
BV_{EBO}	I_E=10μA	6.0		5.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.20		0.25	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		0.30		0.40	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA	0.65	0.85	0.65	0.85	V
$V_{BE(SAT)}$	I_C=50mA, I_B=5.0mA		0.95		0.95	V
h_{FE}	V_{CE}=1.0V, I_C=0.1mA	40		60		
h_{FE}	V_{CE}=1.0V, I_C=1.0mA	70		80		
h_{FE}	V_{CE}=1.0V, I_C=10mA	100	300	100	300	
h_{FE}	V_{CE}=1.0V, I_C=50mA	60		60		
h_{FE}	V_{CE}=1.0V, I_C=100mA	30		30		

SYMBOL	TEST CONDITIONS	CZT3904 MIN	CZT3904 MAX	CZT3906 MIN	CZT3906 MAX	UNITS
f_T	V_{CE}=20V, I_C=10mA, f=100MHz		300	250		MHz
C_{ob}	V_{CB}=5.0V, I_E=0, f=1.0MHz		4.0		4.5	pF
C_{ib}	V_{BE}=0.5V, I_C=0, f=1.0MHz		8.0		10	pF
h_{ie}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	1.0	10	2.0	12	kΩ
h_{re}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	0.5	8.0	0.1	10	$x10^{-4}$
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	100	400	100	400	
h_{oe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	1.0	40	3.0	60	µmhos
NF	V_{CE}=5.0V, I_C=100µA, R_S=1.0kΩ f=10Hz to 15.7kHz		5.0		4.0	dB
t_d	V_{CC}=3.0V, V_{BE}=0.5, I_C=10mA, I_{B1}=1.0mA		35		35	ns
t_r	V_{CC}=3.0V, V_{BE}=0.5, I_C=10mA, I_{B1}=1.0mA		35		35	ns
t_s	V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=1.0mA		200		225	ns
t_f	V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=1.0mA		50		75	ns

All dimensions in inches (mm).

TOP VIEW



DATA SHEET

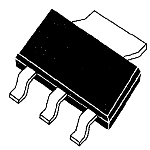
LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

R2

CZT4033

PNP SILICON TRANSISTOR



SOT-223 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZT4033 type is an PNP silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high current general purpose amplifier applications.

MAXIMUM RATINGS (T_A=25°C)

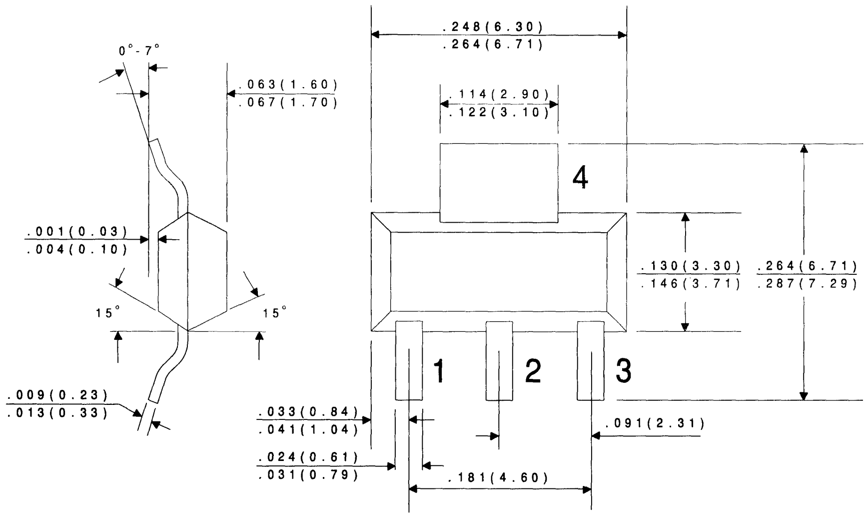
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	1.0	A
Collector Current (Peak)	I_{CM}	1.5	A
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=60V		50	nA
I_{EBO}	V_{EB}=5.0V		10	nA
BV_{CBO}	I_C=10μA	80		V
BV_{CEO}	I_C=10mA	80		V
BV_{EBO}	I_E=10μA	5.0		V
$V_{CE(SAT)}$	I_C=150mA, I_B=15mA		0.15	V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		0.50	V
$V_{BE(SAT)}$	I_C=150mA, I_B=15mA		0.90	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		1.10	V
h_{FE}	V_{CE}=5.0V, I_C=0.1mA	75		
h_{FE}	V_{CE}=5.0V, I_C=100mA	100	300	
h_{FE}	V_{CE}=5.0V, I_C=500mA	70		
h_{FE}	V_{CE}=5.0V, I_C=1.0A	25		
f_T	V_{CE}=10V, I_C=50mA, f=1.0MHz	100		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		20	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		110	pF

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

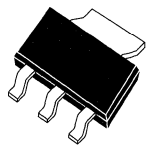
DATA SHEET

R2

CZT5338

NPN SILICON
POWER TRANSISTOR

POWER 223™



SOT-223 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZT5338 type is an NPN silicon power transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for applications requiring extremely high current amplification and switching capability.

MAXIMUM RATINGS (T_A=25^{o}C)

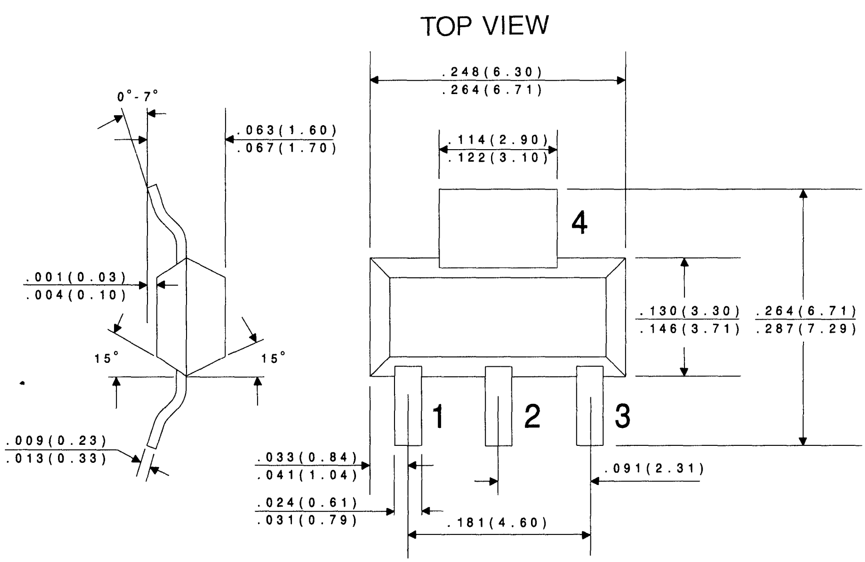
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	5.0	A
Base Current	I_B	1.0	A
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	^{o}C
Thermal Resistance	Θ_{JA}	62.5	^{o}C/W

ELECTRICAL CHARACTERISTICS (T_A=25^{o}C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=100V		10	µA
I_{EBO}	V_{BE}=6.0V		100	µA
I_{CEO}	V_{CE}=90V		100	µA
BV_{CEO}	I_C=50mA	100		V
$V_{CE(SAT)}$	I_C=2.0A, I_B=200mA		0.7	V
$V_{CE(SAT)}$	I_C=5.0A, I_B=500mA		1.2	V
$V_{BE(SAT)}$	I_C=2.0A, I_B=200mA		1.2	V
$V_{BE(SAT)}$	I_C=5.0A, I_B=500mA		1.8	V
h_{FE}	V_{CE}=2.0V, I_C=500mA	30		
h_{FE}	V_{CE}=2.0V, I_C=2.0A	30	120	
h_{FE}	V_{CE}=2.0V, I_C=5.0A	20		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
f_T	V_{CE}=10V, I_C=500mA, f=10MHz	30		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		250	pF
C_{ib}	V_{BE}=2.0V, I_C=0, f=1.0MHz		1000	pF
t_d	V_{CC}=40V, V_{BE}=3.0V, I_C=2.0A, I_{B1}=200mA		100	ns
t_r	V_{CC}=40V, V_{BE}=3.0V, I_C=2.0A, I_{B1}=200mA		100	ns
t_s	V_{CC}=40V, I_C=2.0A, I_{B1}=I_{B2}=200mA		2.0	µs
t_f	V_{CC}=40V, I_C=2.0A, I_{B1}=I_{B2}=200mA		200	ns

All dimensions in inches (mm).



DATA SHEET

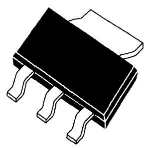
LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

R2

CZT5401

PNP SILICON TRANSISTOR



SOT-223 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZT5401 type is an PNP silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high voltage amplifier applications.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	160	V
Collector-Emitter Voltage	V_{CEO}	150	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

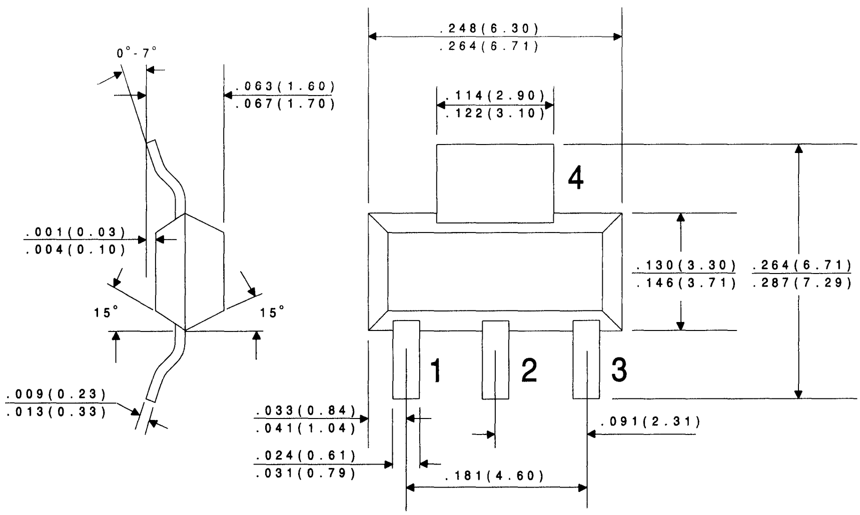
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=100V		50	nA
I_{CBO}	V_{CB}=100V, T_A=150°C		50	mA
I_{EBO}	V_{EB}=3.0V		50	nA
BV_{CBO}	I_C=100μA	160		V
BV_{CEO}	I_C=1.0mA	150		V
BV_{EBO}	I_E=10μA	5.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.2	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		0.5	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA		1.0	V
$V_{BE(SAT)}$	I_C=50mA, I_B=5.0mA		1.0	V
h_{FE}	V_{CE}=5.0V, I_C=1.0mA	50		
h_{FE}	V_{CE}=5.0V, I_C=10mA	60	240	
h_{FE}	V_{CE}=5.0V, I_C=50mA	50		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
f_T	V_{CE}=10V, I_C=10mA, f=100MHz	100	300	MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		6.0	pF
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	40	200	
NF	V_{CE}=5.0V, I_C=200μA, R_S=10Ω f=10Hz to 15.7kHz		8.0	dB

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

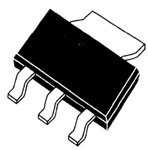
1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

DATA SHEET

R2

CZT5551

NPN SILICON TRANSISTOR



SOT-223 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZT5551 type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high voltage amplifier applications.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	180	V
Collector-Emitter Voltage	V_{CEO}	160	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	600	mA
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

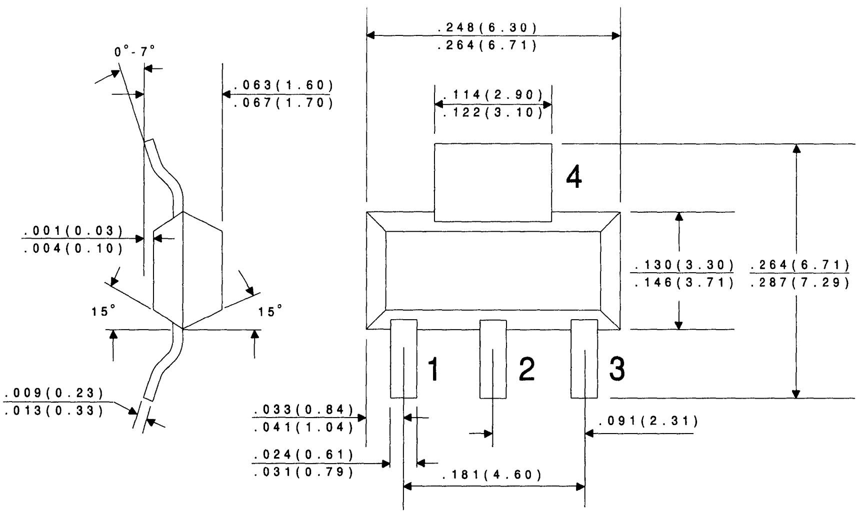
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=120V		50	nA
I_{CBO}	V_{CB}=120V, T_A=100°C		50	µA
I_{EBO}	V_{EB}=4.0V		50	nA
BV_{CBO}	I_C=100µA	180		V
BV_{CEO}	I_C=1.0mA	160		V
BV_{EBO}	I_E=10µA	6.0		V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.15	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		0.20	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA		1.00	V
$V_{BE(SAT)}$	I_C=50mA, I_B=5.0mA		1.00	V
h_{FE}	V_{CE}=5.0V, I_C=1.0mA	80		
h_{FE}	V_{CE}=5.0V, I_C=10mA	80	250	
h_{FE}	V_{CE}=5.0V, I_C=50mA	30		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
f_T	V_{CE}=10V, I_C=10mA, f=100MHz	100	300	MHz
C_{ob}	V_{CB}=10V, I_E=0, f=1.0MHz		6.0	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		20	pF
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	50	200	
NF	V_{CE}=5.0V, I_C=200μA, R_S=10Ω f=10Hz to 15.7kHz		8.0	dB

All dimensions in inches (mm).

TOP VIEW



LEAD CODE:

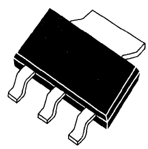
1) BASE
2) COLLECTOR
3) EMITTER
3) COLLECTOR

DATA SHEET

R2

CZTA14 NPN
CZTA64 PNP

SILICON COMPLEMENTARY DARLINGTON TRANSISTORS



SOT-223 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZTA14, CZTA64 types are complementary silicon Darlington transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for applications requiring extremely high gain.

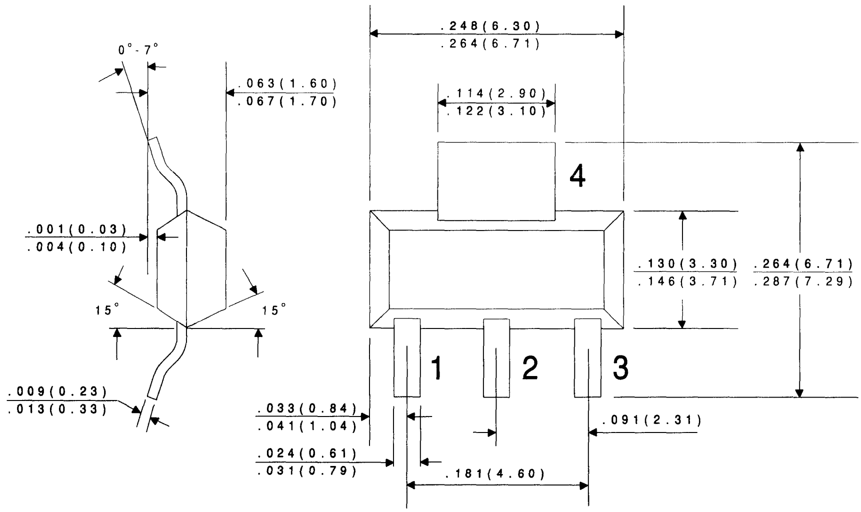
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Base Voltage	V_{EBO}	10	V
Collector Current	I_C	1,000	mA
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=30V		100	nA
I_{CEO}	V_{CE}=10V		100	nA
BV_{CES}	I_C=100μA	30		V
$V_{CE(SAT)}$	I_C=100mA, I_B=0.1mA		1.5	V
$V_{BE(ON)}$	V_{CE}=5.0V, I_C=100mA		2.0	V
h_{FE}	V_{CE}=5.0V, I_C=10mA	10,000		
h_{FE}	V_{CE}=5.0V, I_C=100mA	20,000		
f_T	V_{CE}=5.0V, I_C=10mA, f=100MHz	125		MHz

All dimensions in inches (mm).



LEAD CODE:

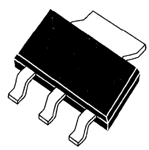
1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

DATA SHEET

R2

CZTA42 NPN
CZTA92 PNP

COMPLEMENTARY SILICON HIGH VOLTAGE TRANSISTOR



SOT-223 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZTA42, CZTA92 types are complementary surface mount epoxy molded silicon planar epitaxial transistors designed for high voltage applications.

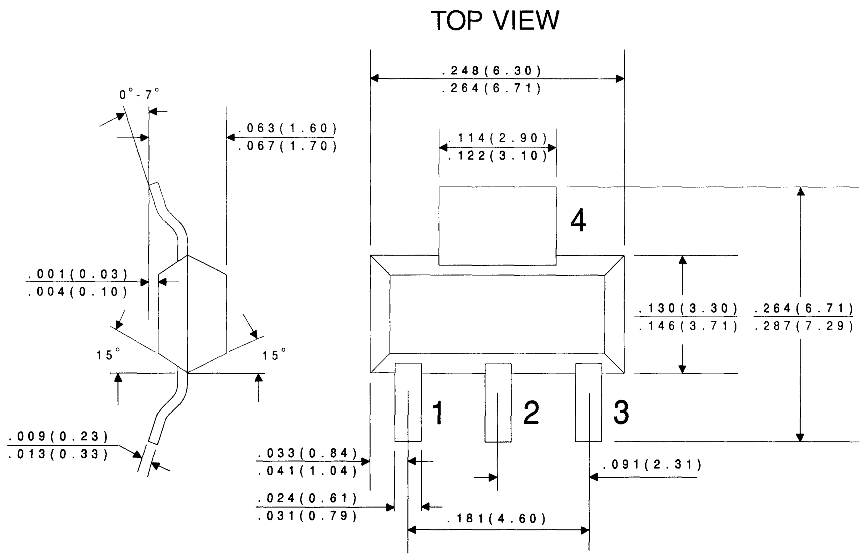
MAXIMUM RATINGS (T_A=25°C)

	SYMBOL	CZTA42	CZTA92	UNITS
Collector-Base Voltage	V_{CBO}	300	300	V
Collector-Emitter Voltage	V_{CEO}	300	300	V
Emitter-Base Voltage	V_{EBO}	6.0	5.0	V
Collector Current	I_C	500		mA
Power Dissipation	P_D	2.0		W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150		°C
Thermal Resistance	Θ_{JA}	62.5		°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

		CZTA42		CZTA92		
SYMBOL	**TEST CONDITIONS**	**MIN**	**MAX**	**MIN**	**MAX**	**UNITS**
I_{CBO}	V_{CB}=200V		100		250	nA
I_{EBO}	V_{BE}=6.0V		100		-	nA
I_{EBO}	V_{BE}=3.0V		-		100	nA
BV_{CBO}	I_C=100μA	300		300		V
BV_{CEO}	I_C=1.0mA	300		300		V
BV_{EBO}	I_E=100μA	6.0		5.0		V
$V_{CE(SAT)}$	I_C=20mA, I_B=2.0mA		0.5		0.5	V
$V_{BE(SAT)}$	I_C=20mA, I_B=2.0mA		0.9		0.9	V
h_{FE}	V_{CE}=10V, I_C=1.0mA	25		25		
h_{FE}	V_{CE}=10V, I_C=10mA	40		40		
h_{FE}	V_{CE}=10V, I_C=30mA	40		25		
f_T	V_{CE}=20V, I_C=10mA, f=100MHz	50		50		MHz
C_{ob}	V_{CB}=20V, I_E=0, f=1.0MHz		3.0		6.0	pF

All dimensions in inches (mm).



LEAD CODE:

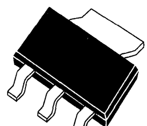
1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

DATA SHEET

R2

CZTA44

NPN SILICON EXTREMELY HIGH VOLTAGE TRANSISTOR



SOT-223 CASE

Central™ Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZTA44 type is a surface mount epoxy molded silicon planar epitaxial transistors designed for extremely high voltage applications.

MAXIMUM RATINGS (T_A=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	450	V
Collector-Emitter Voltage	V_{CEO}	400	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	300	mA
Power Dissipation	P_D	2.0	W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +150	°C
Thermal Resistance	Θ_{JA}	62.5	°C/W

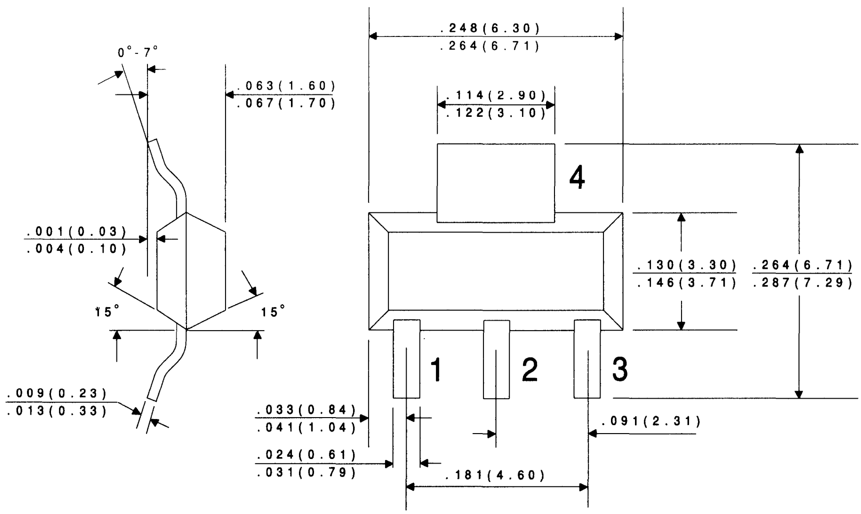
ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	V_{CB}=400V		100	nA
I_{CES}	V_{CE}=400V		500	nA
I_{EBO}	V_{BE}=4.0V		100	nA
BV_{CBO}	I_C=100μA	450		V
BV_{CES}	I_C=100μA	450		V
BV_{CEO}	I_C=1.0mA	400		V
BV_{EBO}	I_E=10μA	6.0		V
$V_{CE(SAT)}$	I_C=1.0mA, I_B=0.1mA		0.40	V
$V_{CE(SAT)}$	I_C=10mA, I_B=1.0mA		0.50	V
$V_{CE(SAT)}$	I_C=50mA, I_B=5.0mA		0.75	V
$V_{BE(SAT)}$	I_C=10mA, I_B=1.0mA		0.75	V
h_{FE}	V_{CE}=10V, I_C=1.0mA	40		
h_{FE}	V_{CE}=10V, I_C=10mA	50	200	
h_{FE}	VCE=10V, I_C=50mA	45		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE}	V_{CE}=10V, I_C=100mA	20		
f_T	V_{CE}=10V, I_C=10mA, f=10MHz	20		MHz
C_{ob}	V_{CB}=20V, I_E=0, f=1.0MHz		7.0	pF
C_{ib}	V_{EB}=0.5V, I_C=0, f=1.0MHz		130	pF

All dimensions in inches (mm).

TOP VIEW



DATA
SHEET

LEAD CODE:

1) BASE
2) COLLECTOR
3) EMITTER
4) COLLECTOR

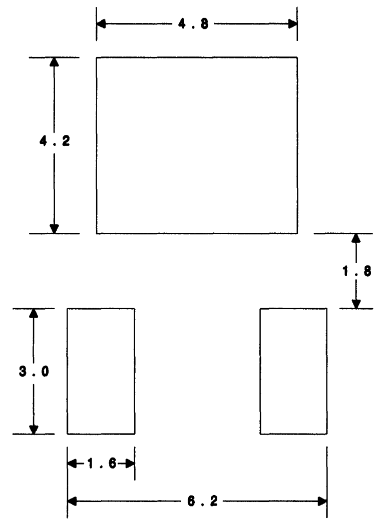
R2

Mounting Pad Geometries

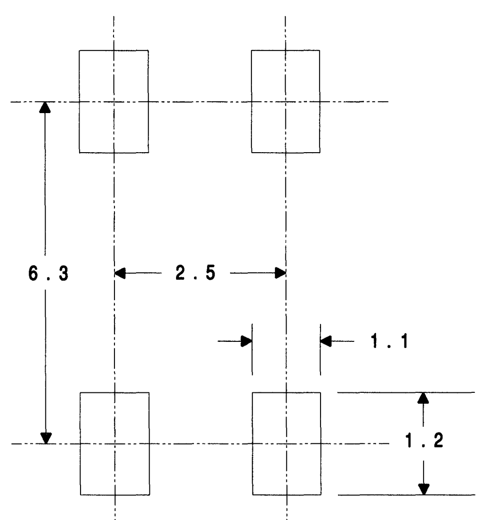
Mounting Pad Geometries

(Dimensions in mm.)

DPAK



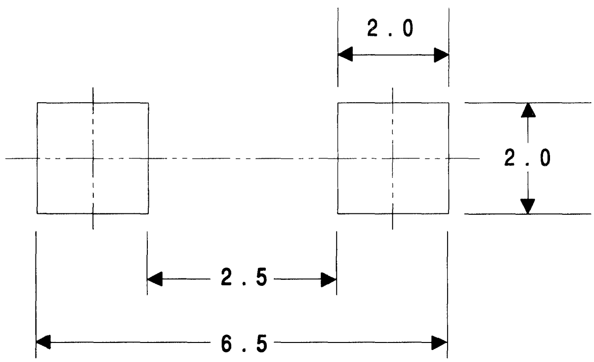
HD DIP



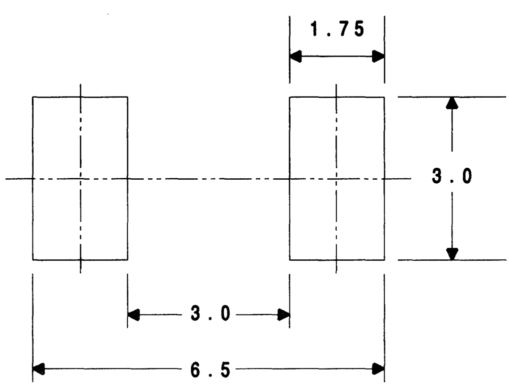
Mounting Pad Geometries

(Dimensions in mm.)

SMA



SMB

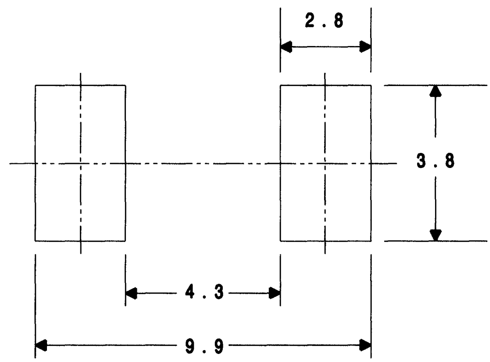


PAD GEOM

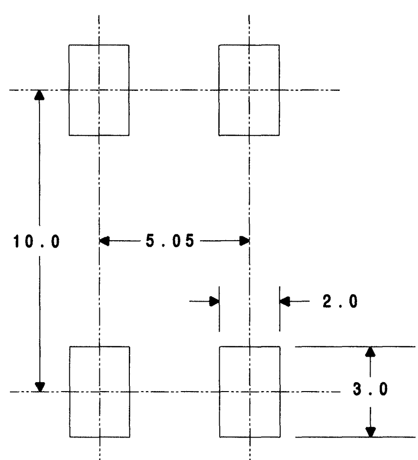
Mounting Pad Geometries (Continued)

(Dimensions in mm.)

SMC



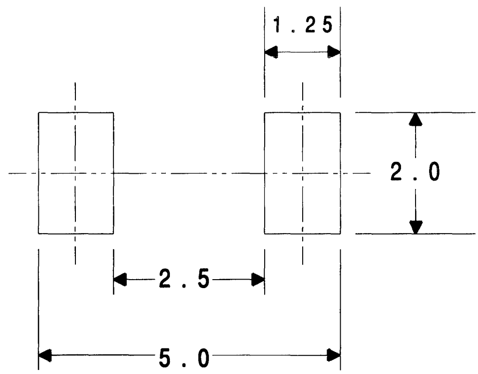
SMDIP



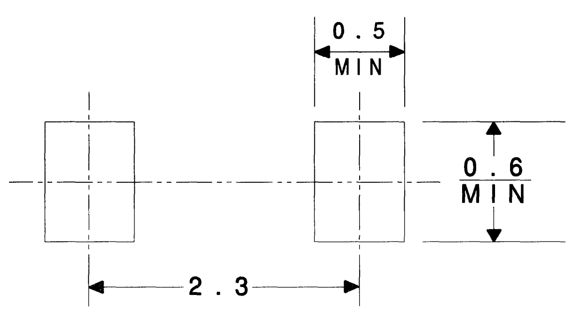
Mounting Pad Geometries (Continued)

(Dimensions in mm.)

SOD-80



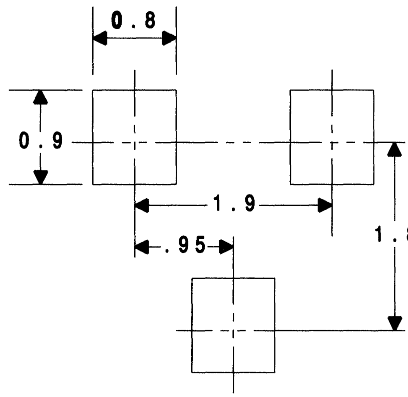
SOD-323



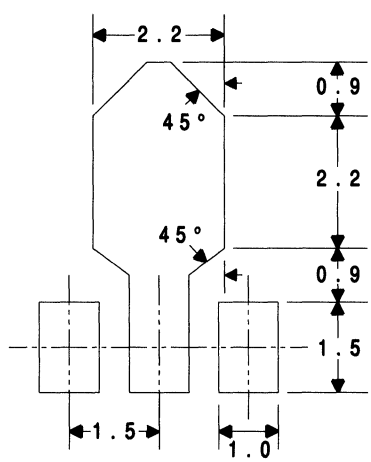
Mounting Pad Geometries (Continued)

(Dimensions in mm.)

SOT-23



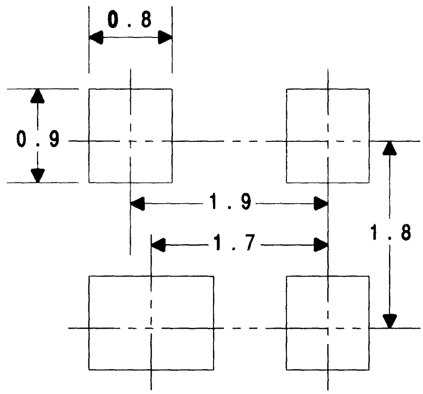
SOT-89



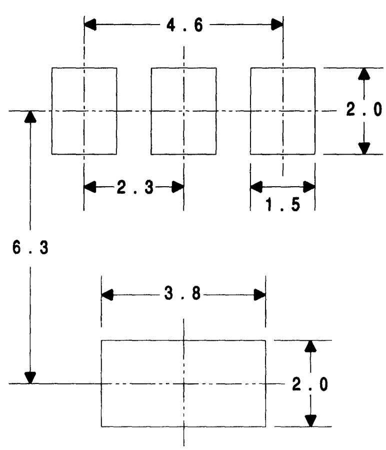
Mounting Pad Geometries (Continued)

(Dimensions in mm.)

SOT-143



SOT-223

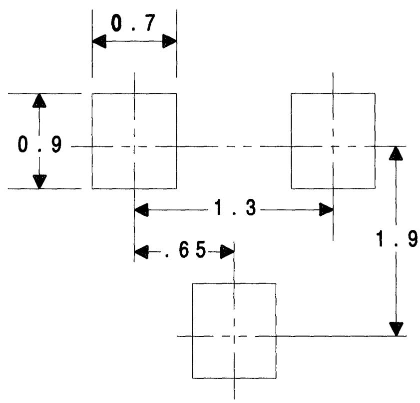


PAD GEOM

Mounting Pad Geometries (Continued)

(Dimensions in mm.)

SOT-323



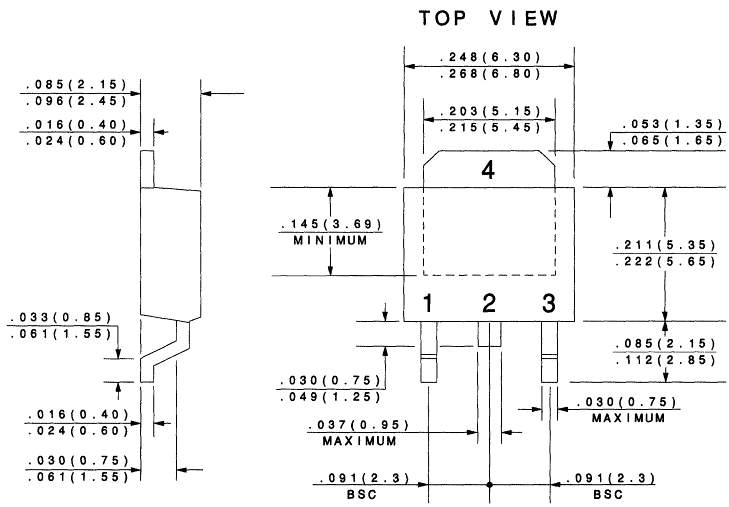
Mechanical Drawings

DWGs

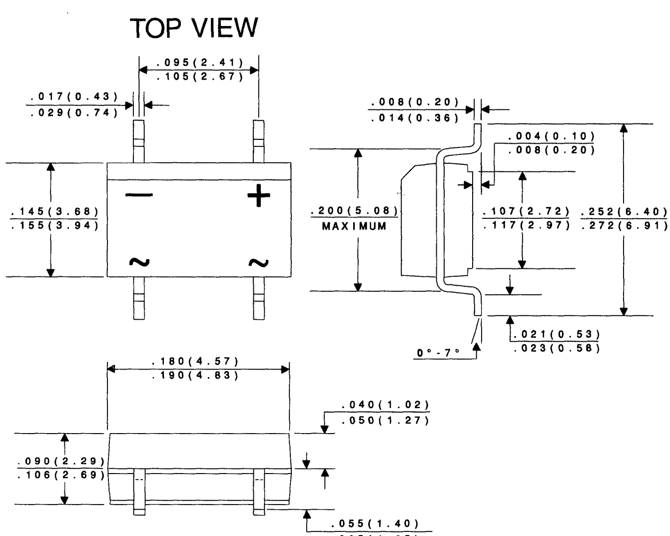
Mechanical Drawings

Dimensions in inches (mm).

DPAK



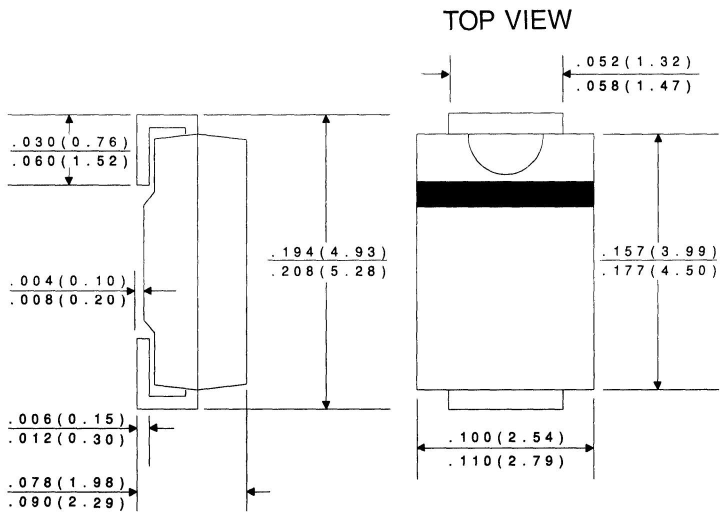
HD DIP



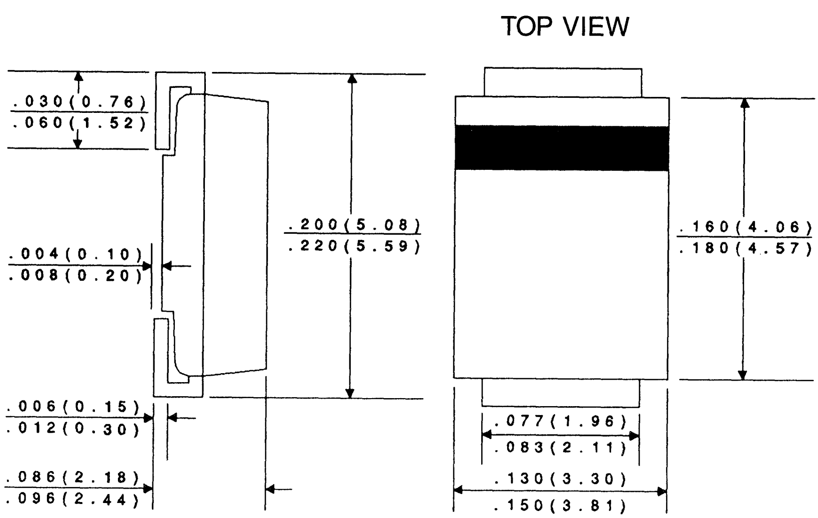
Mechanical Drawings (Continued)

Dimensions in inches (mm).

SMA



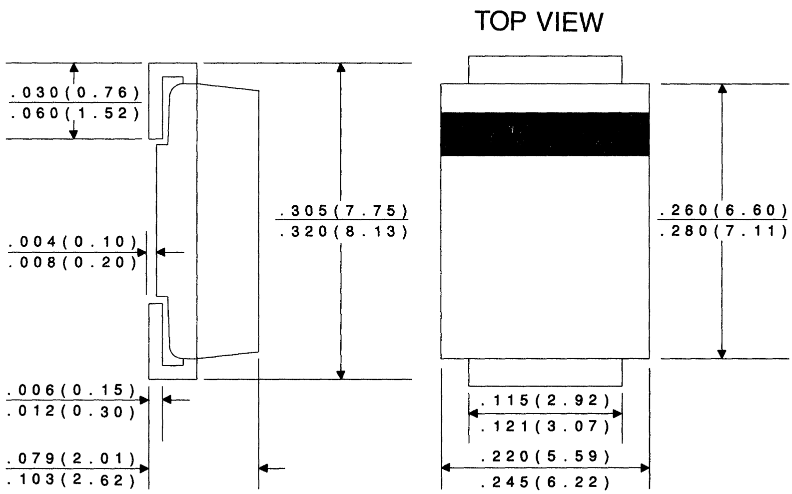
SMB



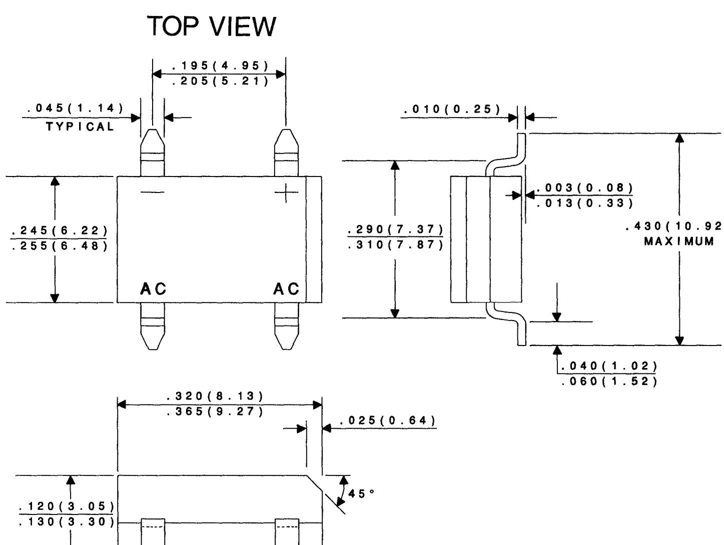
Mechanical Drawings (Continued)

Dimensions in inches (mm).

SMC



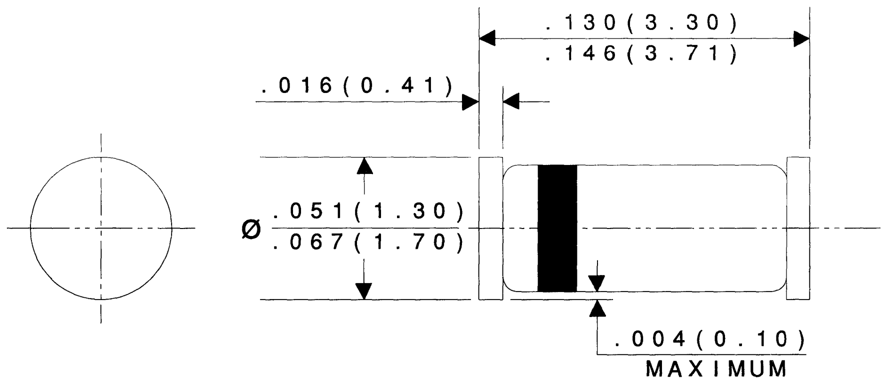
SMDIP



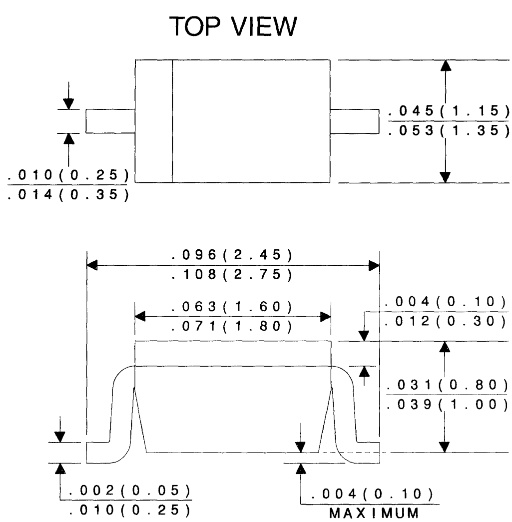
Mechanical Drawings (Continued)

Dimensions in inches (mm).

SOD-80



SOD-323

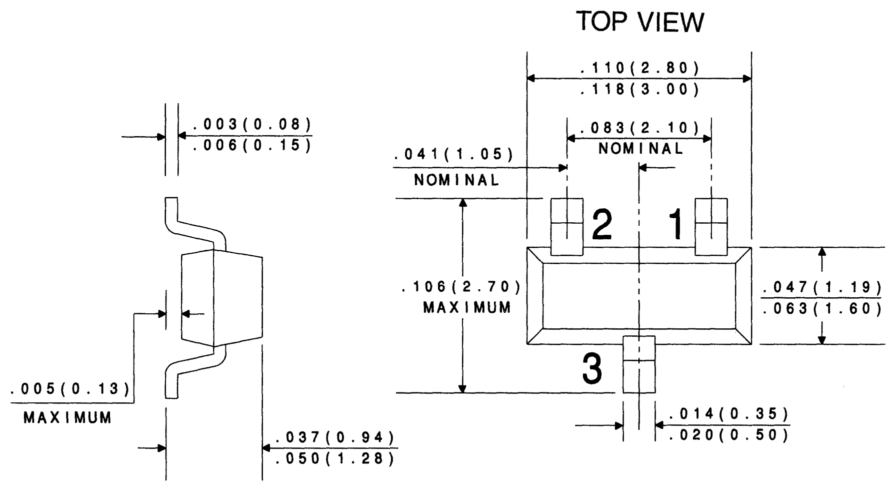


DWGs

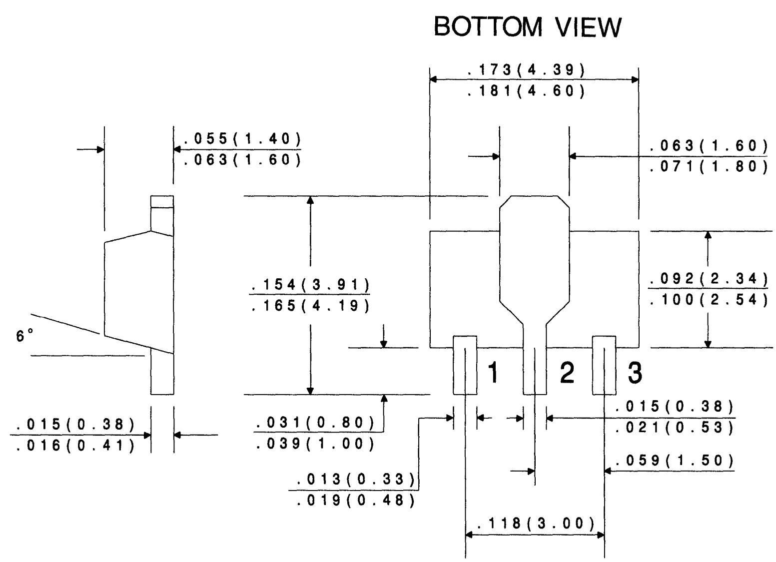
Mechanical Drawings (Continued)

Dimensions in inches (mm).

SOT-23



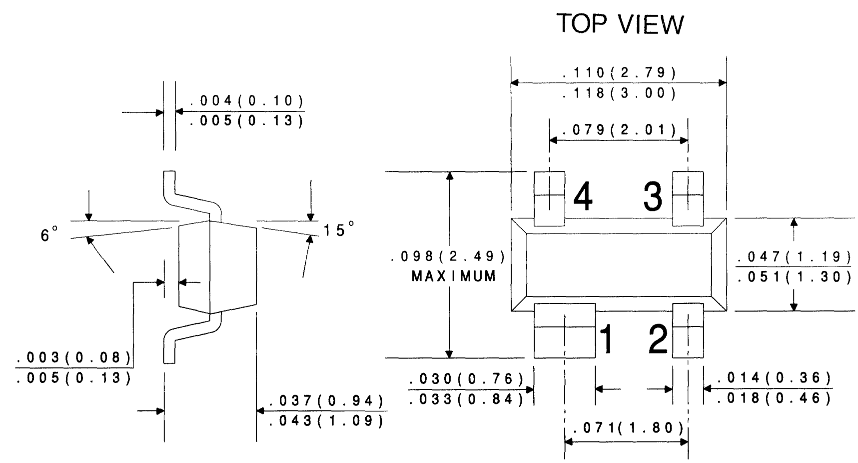
SOT-89



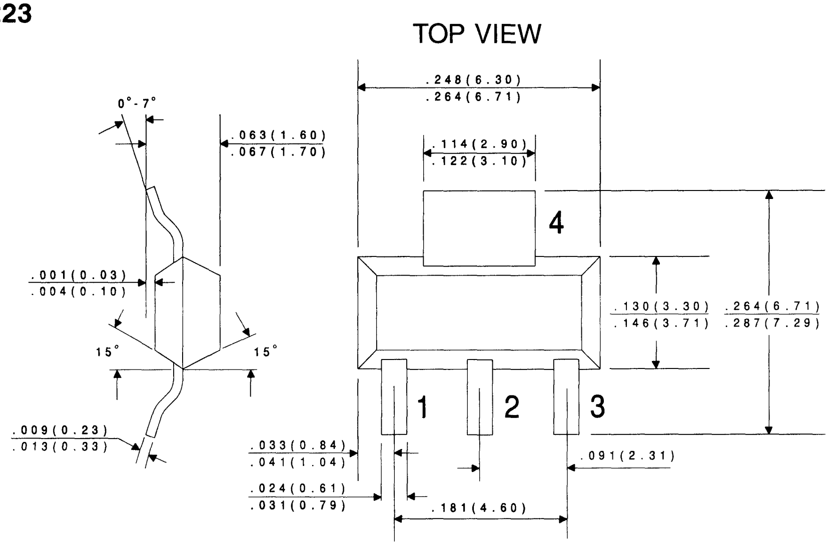
Mechanical Drawings (Continued)

Dimensions in inches (mm).

SOT-143



SOT-223

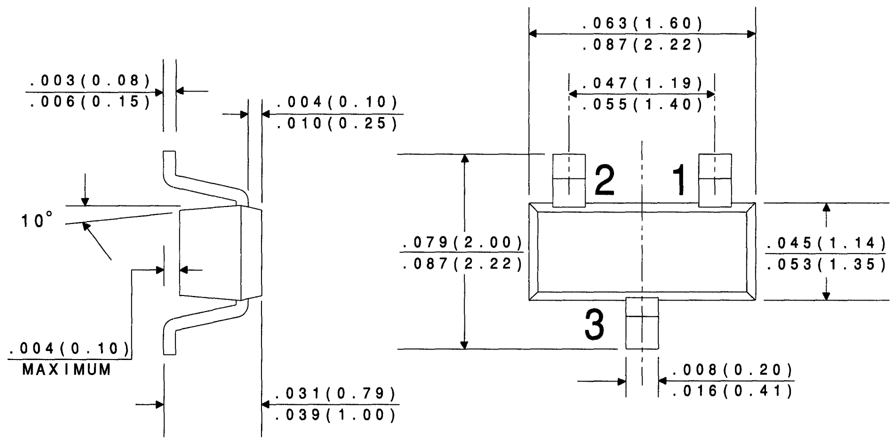


DWGs

Mechanical Drawings (Continued)

Dimensions in inches (mm).

SOT-323



LEAD CODE	PIN 1	PIN 2	PIN 3
SOT-23 DIODE (SINGLE)	ANODE	NO CONNECTION	CATHODE
SOT-23 DIODE (DUAL, COMMON CATHODE)	ANODE	ANODE	CATHODE
SOT-23 DIODE (DUAL, COMMON ANODE)	CATHODE	CATHODE	ANODE
SOT-23 DIODE (DUAL, IN SERIES)	ANODE	CATHODE	CATHODE, ANODE
SOT-23 JFET	DRAIN*	SOURCE*	GATE
SOT-23 STABISTOR	ANODE	NO CONNECTION	CATHODE
SOT-23 SCR	CATHODE	GATE	ANODE
SOT-23 TRANSISTOR	BASE	EMITTER	COLLECTOR
SOT-23 ZENER (SINGLE)	ANODE	NO CONNECTION	CATHODE
SOT-23 ZENER (DUAL, COMMON ANODE)	CATHODE	CATHODE	ANODE
SOT-89 SCHOTTKY RECTIFIER	ANODE	CATHODE	ANODE
SOT-89 TRANSISTOR	EMITTER	COLLECTOR	BASE
SOT-89 TRIAC	GATE	MT2	MT1
SOT-89 ZENER DIODE	ANODE	CATHODE	ANODE
SOT-323 TRANSISTOR	BASE	EMITTER	COLLECTOR
SOT-323 DIODE (SINGLE)	ANODE	NO CONNECTION	CATHODE

	PIN 1	PIN 2	PIN 3	PIN 4
SOT-143 DIODE (DUAL, ISOLATED)	ANODE #1	ANODE #2	CATHODE #2	CATHODE #1
SOT-223 TRANSISTOR	BASE	COLLECTOR	EMITTER	COLLECTOR
SOT-223 SCR	CATHODE	ANODE	GATE	ANODE

	PIN 1	PIN 2	PIN 3	TAB
DPAK TRANSISTOR	BASE	COLLECTOR	EMITTER	COLLECTOR
DPAK RECTIFIER (SINGLE)	NO CONNECTION	CATHODE	ANODE	CATHODE
DPAK RECTIFIER (DUAL, COMMON CATHODE)	ANODE #1	CATHODE #1, #2	ANODE #2	CATHODE #1, #2

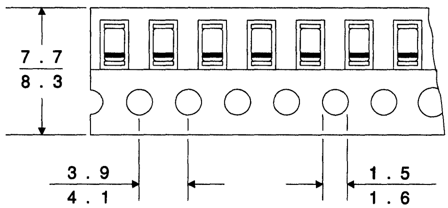
* SOURCE AND DRAIN ARE INTERCHANGEABLE ON JFETs.

Engineering Specifications

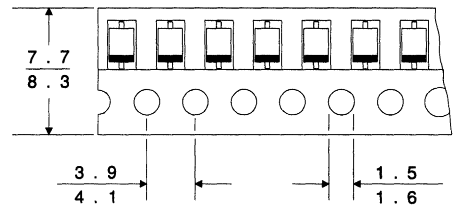
Tape Dimensions and Orientation (Dimensions in mm.)

8 mm

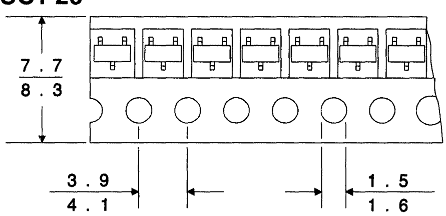
SOD-80



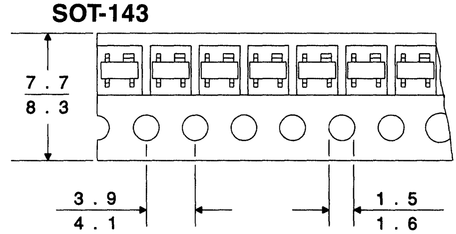
SOD-323



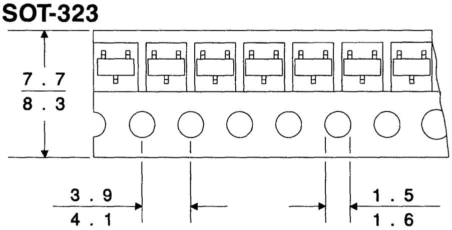
SOT-23



SOT-143



SOT-323

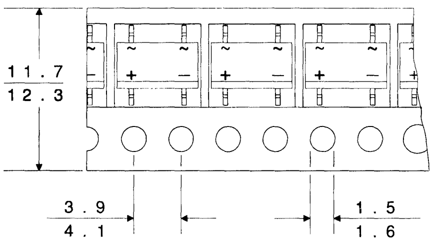


Direction of Unreeling

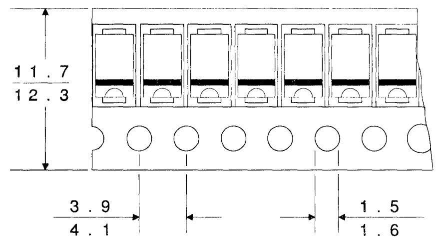
Tape Dimensions and Orientation (Dimensions in mm.)
(Continued)

12 mm

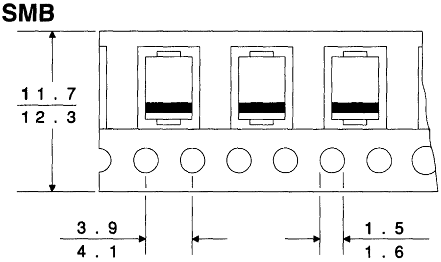
HD DIP



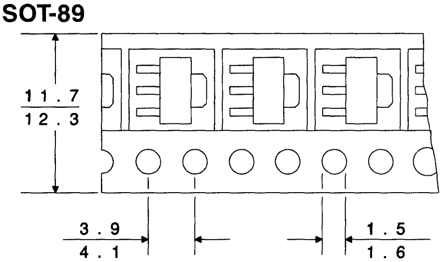
SMA



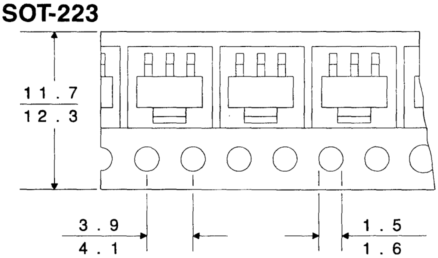
SMB



SOT-89



SOT-223



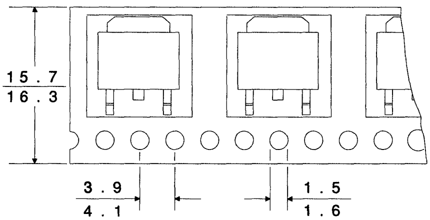
Direction of Unreeling

←

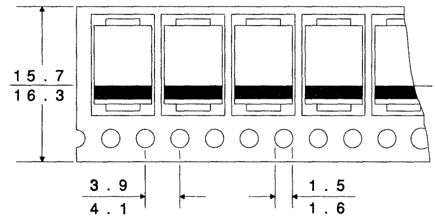
Tape Dimensions and Orientation (Dimensions in mm.)
(Continued)

16 mm

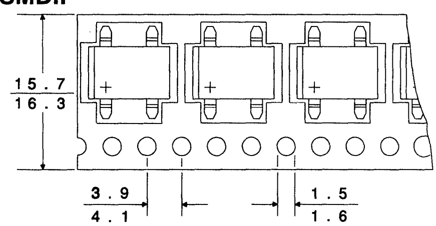
DPAK



SMC



SMDIP



Direction of Unreeling

Reel Labeling Information

Each reel is labeled with the following information:

Central Part Number
Customer Part Number
Purchase Order Number
Quantity
Lot Number
Ship Date
Marking Code *

* Applies to SOT-23, SOT-143, SOT-323, SOD-323, HD DIP, SMA, SMB & SMC devices only.

Device Marking Information

Case	Marking Details
DPAK	Full Part Number
HD DIP	4 Digit Code
SMA	4-5 Digit Code
SMB	3-4 Digit Code
SMC	3-4 Digit Code
SMDIP	Full Part Number
SOD-80	Cathode Band
SOD-323	2 Digit Code
SOT-23	2-3 Digit Code
SOT-89	Full Part Number
SOT-143	2-3 Digit Code
SOT-223	Full Part Number
SOT-323	2-3 Digit Code

Taped & Reeled Packaging Base

PACKAGE	TAPE WIDTH (mm)	REEL SIZE (INCH)	QUANTITY PER REEL
DPAK*	16	13	2,500
HD DIP*	12	13	3,000
SMA*	12	13	5,000
SMB*	12	13	3,000
SMC*	16	13	3,000
SMDIP*	16	13	1,000
SOD-80	8	7 13	2,500 10,000
SOD-323	8	7 13	3,000 10,000
SOT-23	8	7 13	3,000 10,000
SOT-89	12	7 13	1,000 4,000
SOT-143	8	7 13	3,000 10,000
SOT-223	12	7 13	1,000 4,000
SOT-323	8	7 13	3,000 10,000

* Available on 13" reels only.

Bulk Packed Packaging Base

PACKAGE	QUANTITY
DPAK	100 / Vial
HD DIP	100 / Sleeve
SMA	1K / Vial
SMB	500 / Vial
SMC	100 / Vial
SMDIP	50 / Sleeve
SOD-80	1K / Vial
SOD-323	1K / Vial
SOT-23	1K / Vial
SOT-89	1K / Vial
SOT-143	1K / Vial
SOT-223	250 / Vial
SOT-323	1K / Vial

Reel Packing Details

DEVICE	QUANTITY PER BOX	NUMBER OF REELS PER BOX	BOX DIMENSIONS		SHIPPING WEIGHT	
			INCH	CM	LB	KG
DPAK TR13	13K	13 Reels	14 X14 X 8	36 X 36 X 20	22	10
HD DIP TR13	39K	13 Reels	14 X 14 X 8	36 X 36 X 20	31	14
SMA TR13	55K	11 Reels	14 X 14 X 8	36 X 36 X 20	22	10
SMB TR13	33K	11 Reels	14 X 14 X 8	36 X 36 X 20	22	10
SMC TR13	39K	13 Reels	14 X 14 X 8	36 X 36 X 20	22	10
SMDIP TR13	13K	13 Reels	14 X 14 X 8	36 X 36 X 20	22	10
SOD-80 TR	25K	10 Reels	8 X 8 X 4	20 X 20 X 10	4	2
	47.5K	19 Reels	8 X 8 X 8	20 X 20 X 20	7	4
SOD-323 TR	30K	10 Reels	8 X 8 X 4	20 X 20 X 10	3	2
	57K	19 Reels	8 X 8 X 8	20 X 20 X 20	5	3
SOT-23 TR	30K	10 Reels	8 X 8 X 4	20 X 20 X 10	3	2
	57K	19 Reels	8 X 8 X 8	20 X 20 X 20	5	3
SOT-89 TR	7K	7 Reels	8 X 8 X 4	20 X 20 X 10	3	2
	14K	14 Reels	8 X 8 X 8	20 X 20 X 20	6	3
SOT-143 TR	30K	10 Reels	8 X 8 X 4	20 X 20 X 10	3	2
	57K	19 Reels	8 X 8 X 8	20 X 20 X 20	5	3
SOT-223 TR	7K	7 Reels	8 X 8 X 4	20 X 20 X 10	4	2
	14K	14 Reels	8 X 8 X 8	20 X 20 X 20	7	4
SOT-323 TR	30K	10 Reels	8 X 8 X 4	20 X 20 X 10	3	2
	57K	19 Reels	8 X 8 X 8	20 X 20 X 20	5	3

ORDERING INFO:

- For devices taped and reeled on 7" reels, add TR suffix to part number.
- For devices taped and reeled on 13" reels, add TR13 suffix to part number
- For devices bulk packed, add BK suffix to part number.
- All SMDs are available bulk packed, for prototype and manual placement applications.
- Bulk SMDs are shipped in black plastic, antistatic vials with hinged lids.

Central™
Semiconductor Corp.

Labeling Specification

1.0. Purpose: This Specification defines the layout and identification of the Inner Carton/ Reel Label used by Central Semiconductor Corp.

1.1. This label must be affixed to each inner carton/reel in the shipment.

1.2. Label Information and Layout:

1) CENTRAL P/N:	Line 1) Central Part Number Number (Up to 25 Characters)
2) CUSTOMER P/N:	Line 2) Customer Part Number (Up to 25 Characters)
3) PURCHASE O/N:	Line 3) Customer's Purchase Order Number (Up to 25 Characters)
4) QUANTITY:	Line 4) Quantity of Devices. (Up to 15 Characters)
5) LOT NUMBER:	Line 5) Lot Number of the Devices. (Up to 25 Characters)
6) DATE CODE:	Line 6) Date Code of the Devices. (Up to 5 Characters)
7) SHIP DATE:	Line 7) Ship Date - The day cartons are shipped from Central. (Month-Day-Year)
8) MARKING CODE:	Line 8) Marking of the Device. (Applies to HD DIP, SOT-23, SOT-143, SOT-323, SOD-323, SMA, SMB and SMC Devices only.)

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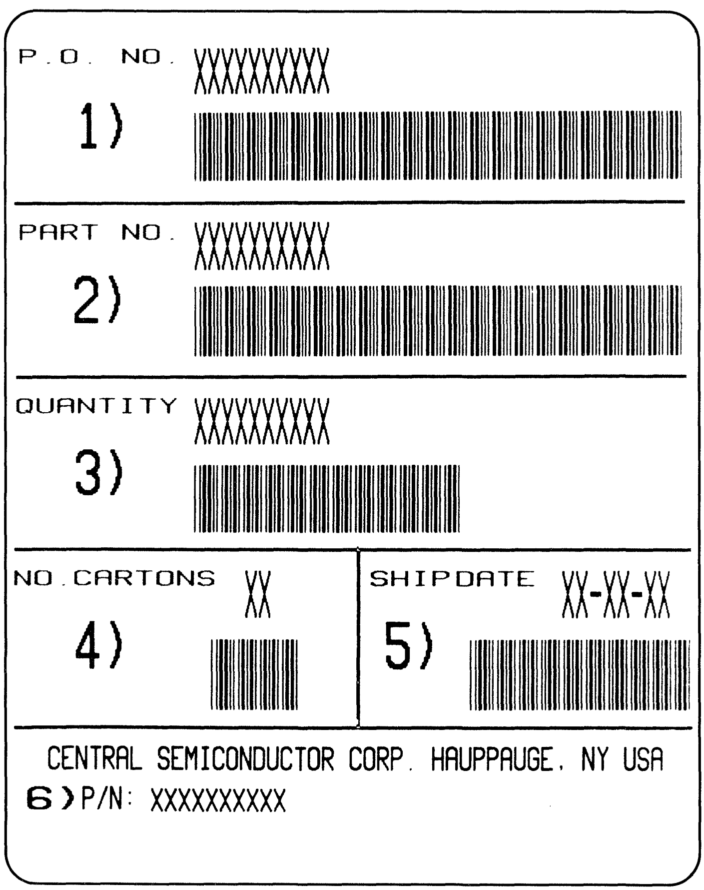
Semiconductor Corp.

Bar Code Identification Label

Note: Bar Code Label Available Upon Request.

1.0. Purpose: This Specification defines the layout and identification of the Bar Code Label used by Central Semiconductor Corp.

1.1. This label must be affixed to each carton in the shipment and to the reverse side of the packing slip.
1.2. Bar codes are type 3-of-9 (Code 39) Symbology.
1.3. Label Information and Layout:



Line 1) Customer Purchase Order Number (Up to 30 Characters)

Line 2) Customer Part Number (Up to 30 Characters)

Line 3) Total Quantity in Shipment. (Up to 15 Characters)

Line 4) Total Number of Cartons in Shipment. (Up to 2 Characters)

Line 5) Ship Date - The day cartons are shipped from Central. (Month-Day-Year)

Line 6) Central Semiconductor Corp., Hauppauge, NY USA Central Part Number (Up to 30 Characters)

Label Size - 4" x 5"

Central™
Semiconductor Corp.

MANUFACTURERS OF
WORLD CLASS
DISCRETE SEMICONDUCTORS

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Hauppauge, NY 11788 USA
Tel (516) 435-1110
Fax (516) 435-1824

SMDDB-7