

TYPES 2N339, 2N340, 2N341, 2N342, 2N342A, 2N343

N-P-N GROWN JUNCTION SILICON TRANSISTORS

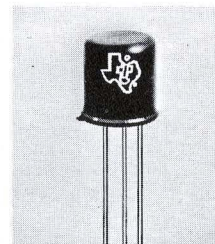


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 BULLETIN NO. DL-5 1012, JANUARY, 1959
 REPLACES BULLETIN NO. DL-5 908, MARCH, 1958

1 Watt at 25°C • 400mW at 100°C

Linear Beta Characteristics • Round Welded Case

Designed for Audio or Servo Amplifier Stages



qualification testing

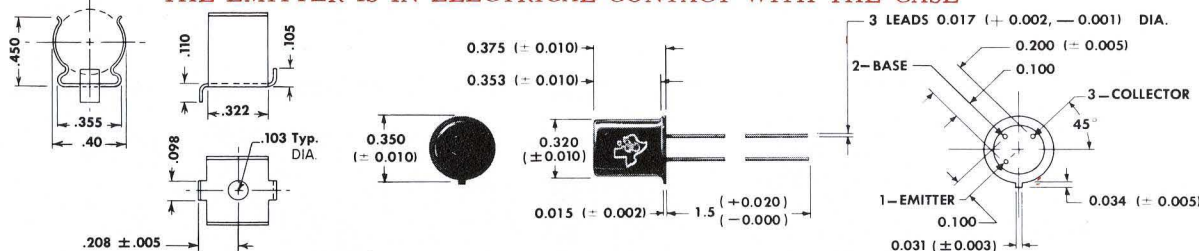
Each unit is heat cycled from -65°C to +175°C for ten cycles, and then humidity cycled at temperature from -65°C to +75°C in air at 95% relative humidity. The hermetic seal is tested by subjecting immersed units to hydraulic pressure. A rigorous tumbling test subjects each unit to a number of random mechanical shocks to ensure maximum mechanical reliability. Each unit is thoroughly tested to determine the electrical design characteristics. Production samples are life tested periodically to determine the effects of storage and dissipation and ensure maximum attainable reliability.

mechanical data

The transistor has a welded case with glass-to-metal hermetic seal between case and leads. Approximate weight is 1.2 grams. Case and leads are tinned, and then case is black enameled.

The noninsulated mounting clip (TI P/N 354001-99) is provided with each transistor. It is suitable for applications where thermal dissipation to a heat sink is desired. Material: beryllium copper, cadmium plated - gold iridited.

THE EMITTER IS IN ELECTRICAL CONTACT WITH THE CASE



DIMENSIONS ARE MAXIMUM IN INCHES UNLESS OTHERWISE SPECIFIED

maximum ratings

Collector Voltage referred to base or emitter at 25°C	(Breakdown voltages are indicated below)
Collector Current at 25°C	60 mA
Collector Dissipation at 25°C	1000 mW
Collector Dissipation at 100°C	400 mW
Collector Dissipation at 125°C	200 mW
Junction Temperature (maximum range)	-65°C to +150°C

design characteristics at T_j = 25°C [except as indicated]

PARAMETER	TEST CONDITIONS	2N339	2N340	2N341	2N342	2N342A	2N343	unit
		min. max.	min. max.	min. max.	min. max.	min. max.	min. max.	
BV _{CB0} Breakdown Voltage	I _C = 50μA I _E = 0	55	85	125	60	85	60	V
BV _{EB0} Breakdown Voltage	I _E = 100μA I _C = 0	1	1	1	1	1	1	V
BV _{CE0} Breakdown Voltage	I _C = 100μA I _B = 0	55	85	85	60	85	60	V
I _{CB0} Collector Cutoff Current	V _C = 30V I _E = 0	1	1	1	1	1	1	μA
I _{CB0} at 150°C	V _C = 30V I _E = 0	250	250	250	250	250	250	μA
h _{ib} Input Impedance	V _{CB} = 10V I _E = -5mA	30	30	30	30	30	30	ohm
h _{ob} Output Admittance	V _{CB} = 10V I _E = -5mA	2	2	2	2	2	2	μmho
h _{rb} Feedback Voltage Ratio	V _{CB} = 10V I _E = -5mA	300	300	300	300	300	300	X10 ⁻⁶
h _{fb} Current Transfer Ratio	V _{CB} = 10V I _E = -5mA	0.9 0.989	0.9 0.989	0.9 0.989	0.9 0.97	0.9 0.97	0.966 0.989	—
R _{CS} Saturation Resistance	I _C = 20mA I _B = 3mA	300	350	400	350	350	350	ohm
PG _e Power Gain*	(See diagram)	30	30	30	30	30	30	db

* Power gain of transistor, not of amplifier shown.

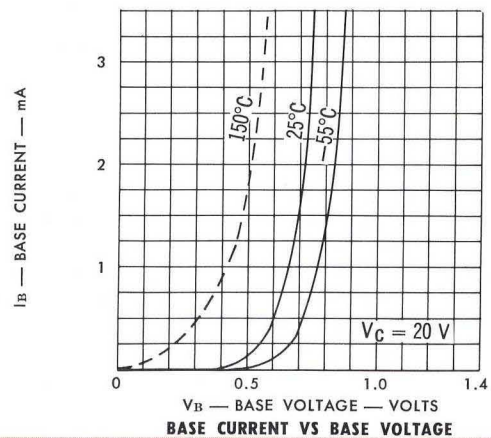
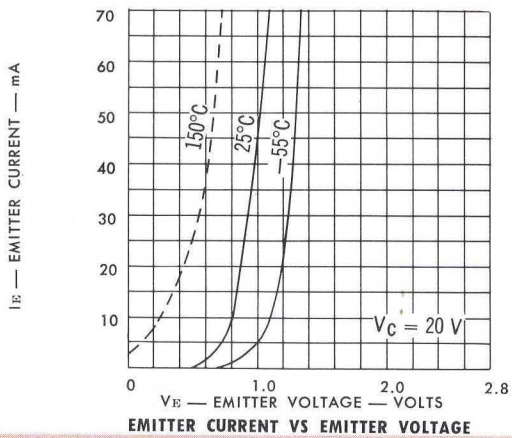
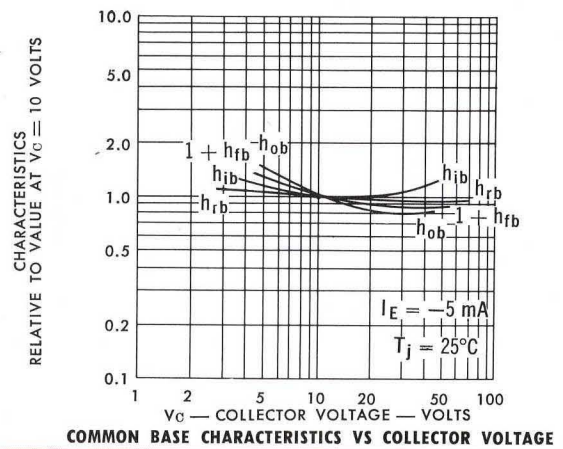
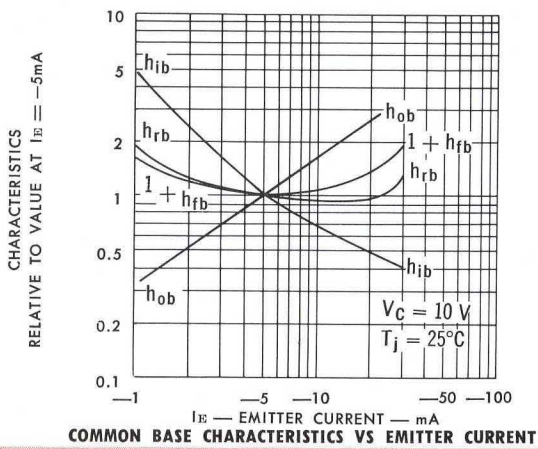
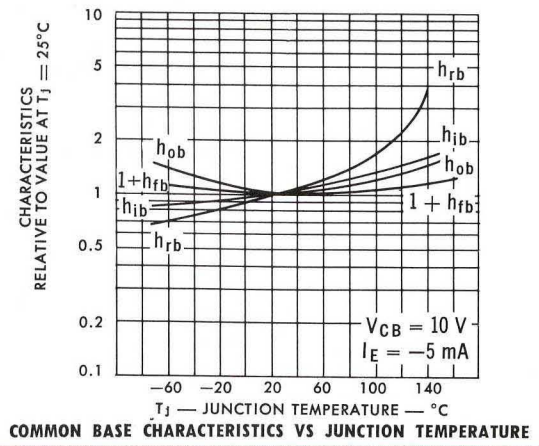
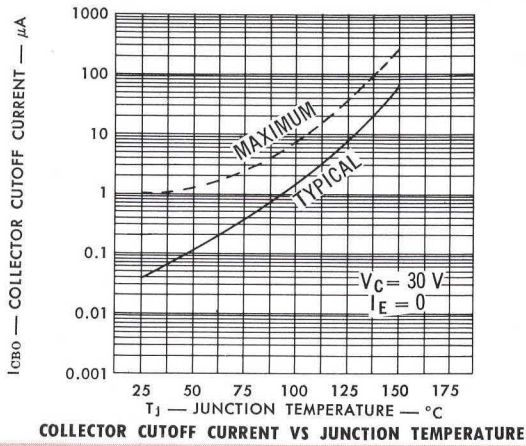
LICENSED UNDER BELL SYSTEM PATENTS

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TYPICAL CHARACTERISTICS

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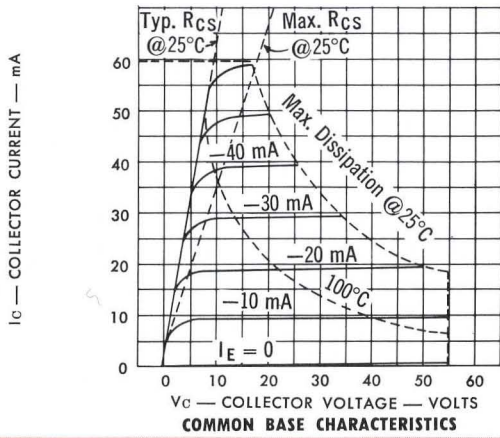
EXPLANATION OF CURVES:

1. The curves shown are based on extensive data. Individual units or small groups of units may not conform.
2. Dashed lines indicate extrapolated data at points where the testing conditions exceed the rated values.
3. Dash lines and solid lines indicate data taken under normal testing conditions. Other than normal testing.
4. All temperatures are ambient except where noted.

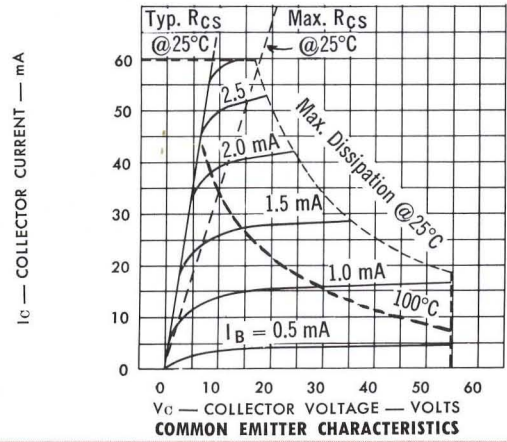
TYPICAL CHARACTERISTICS

(AS INDICATED)

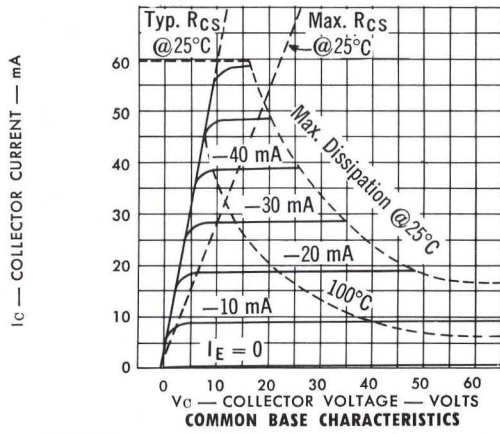
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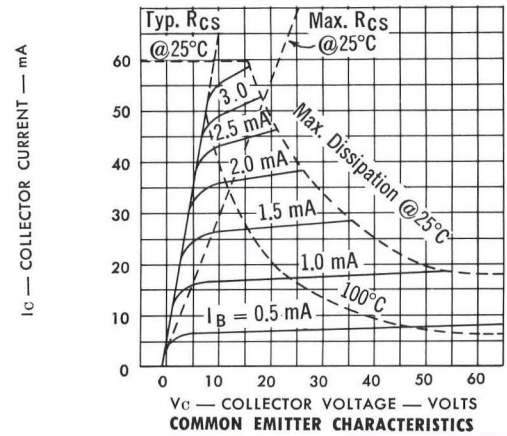
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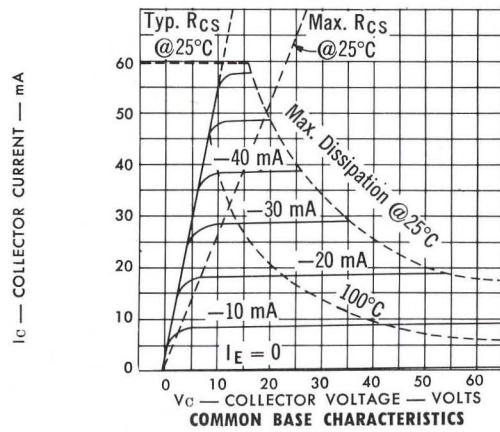
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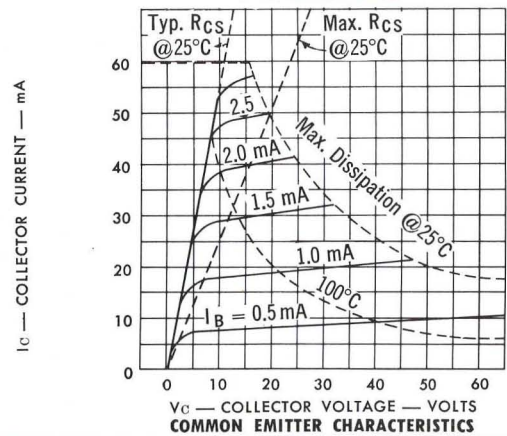
TYPE 2N340



TYPE 2N341



TYPE 2N341



to conform exactly to the curves. Hence, these curves should be considered to be typical.
 ed values.
 al testing conditions are indicated by X'd lines.

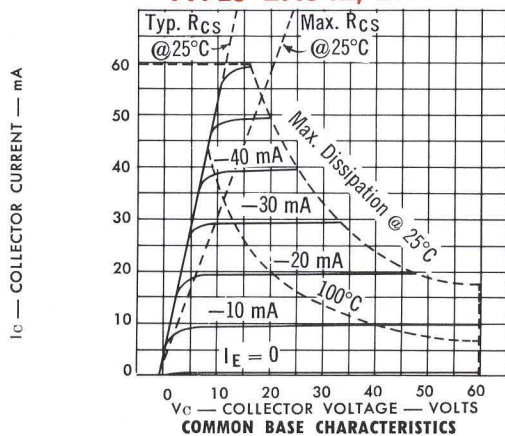


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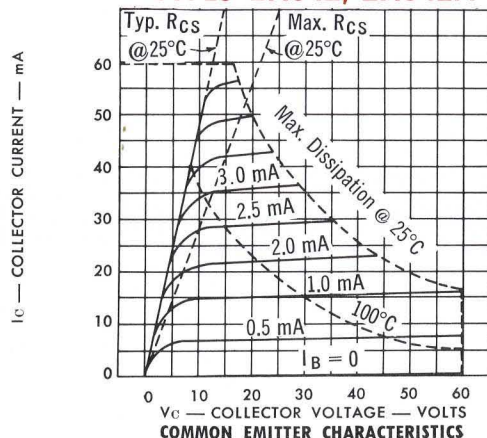
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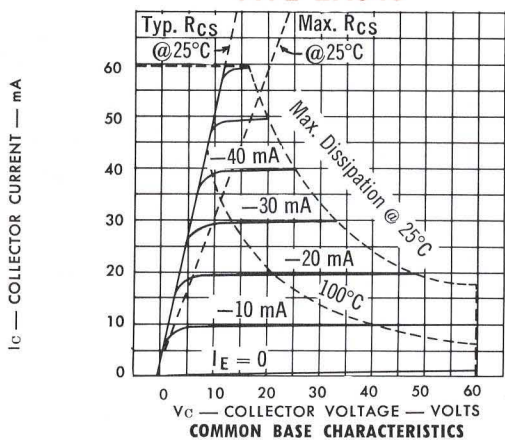
TYPES 2N342, 2N342A



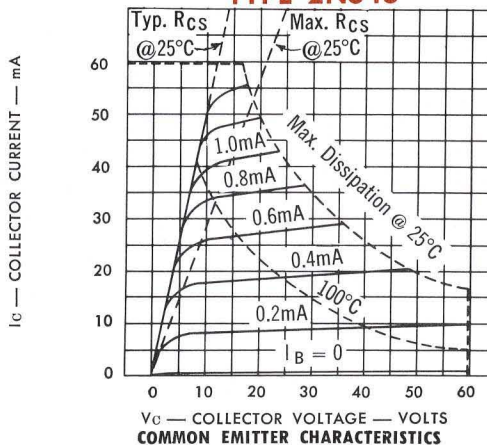
TYPES 2N342, 2N342A



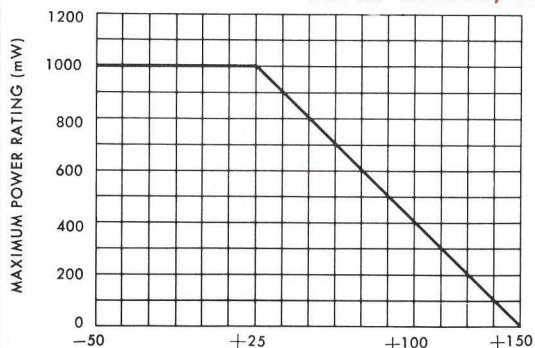
TYPE 2N343



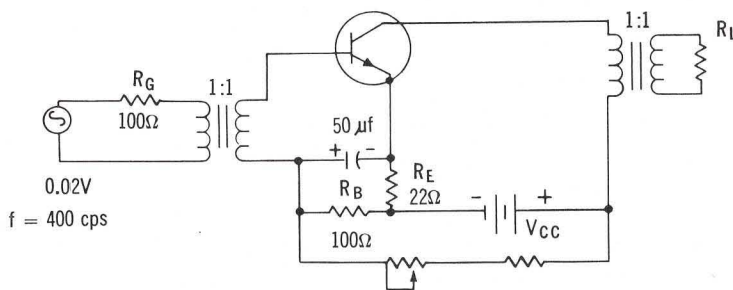
TYPE 2N343



TYPES 2N339, 2N340, 2N341, 2N342, 2N342A, 2N343



T_j — JUNCTION TEMPERATURE — °C
DISSIPATION VS JUNCTION TEMPERATURE



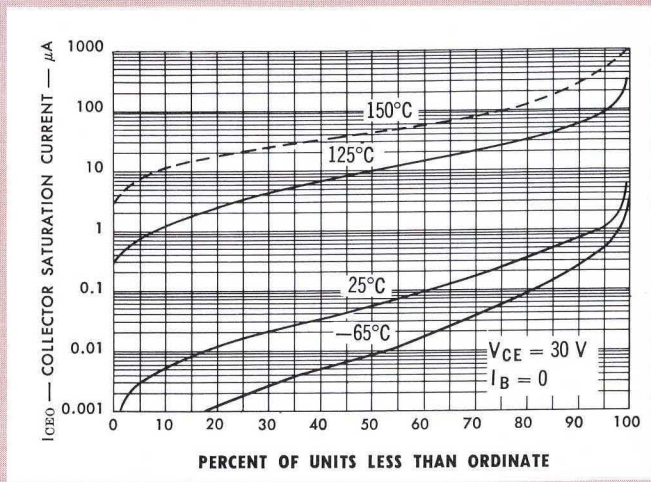
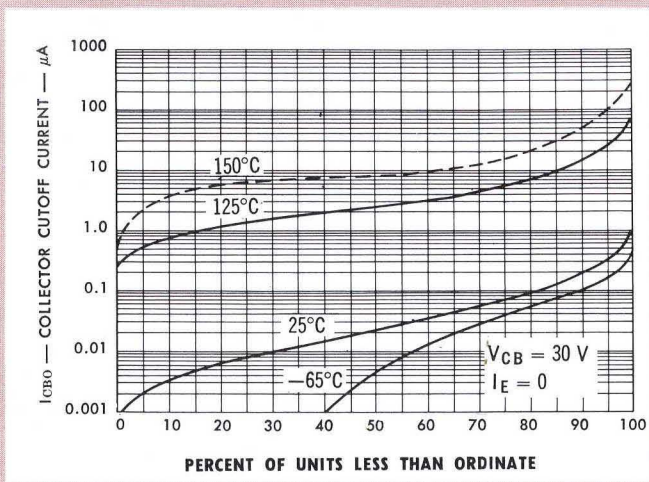
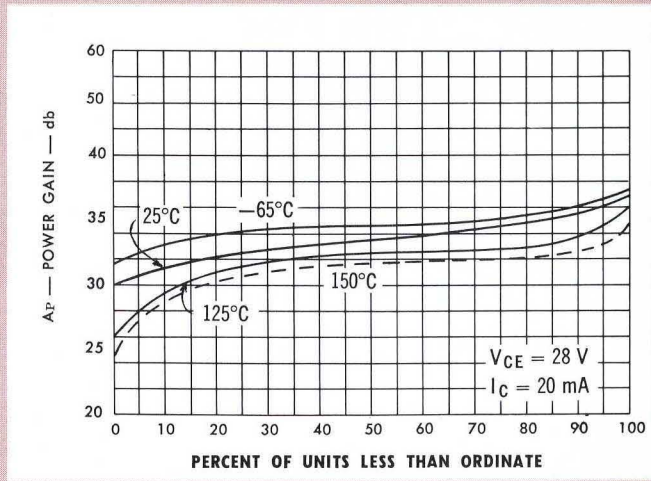
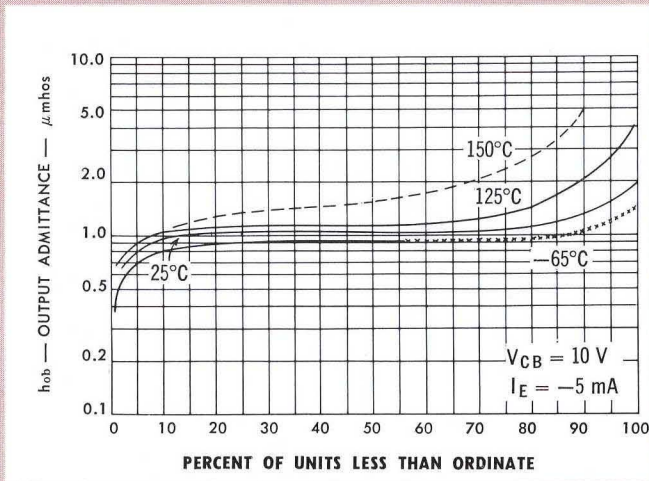
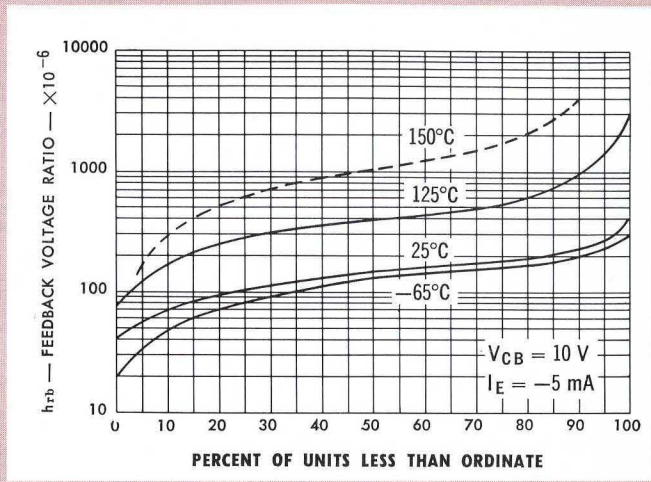
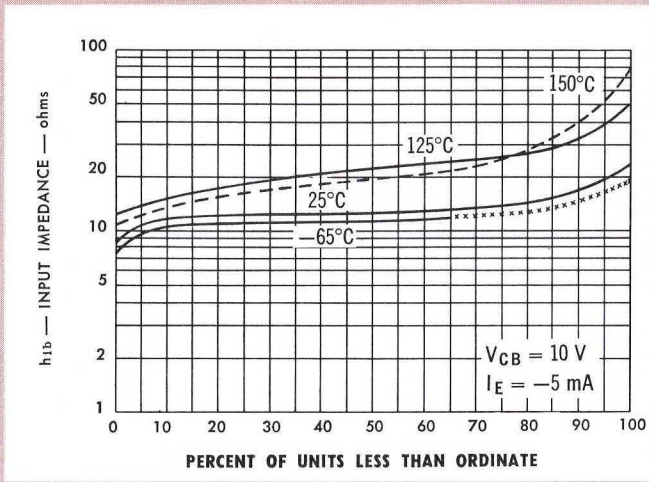
	2N339	2N340	2N341	2N342	2N342A	2N343
V_{CE} (volts)	28	45	67.5	28	28	28
I_C (mA)	20	15	10	20	20	20
R_L (ohms)	1K	2K	4K	1K	1K	1K

POWER GAIN TEST CIRCUIT

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TYPICAL PRODUCTION DISTRIBUTIONS

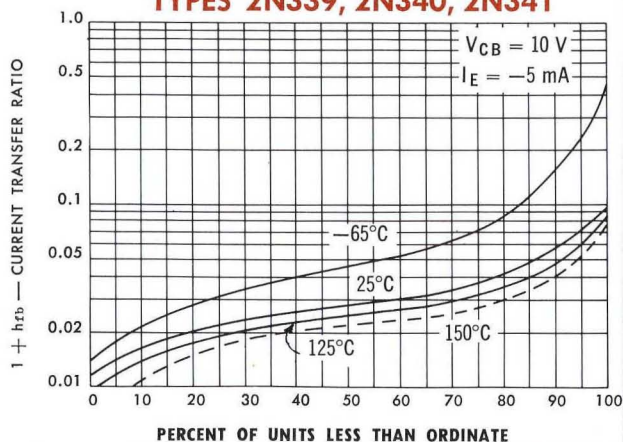
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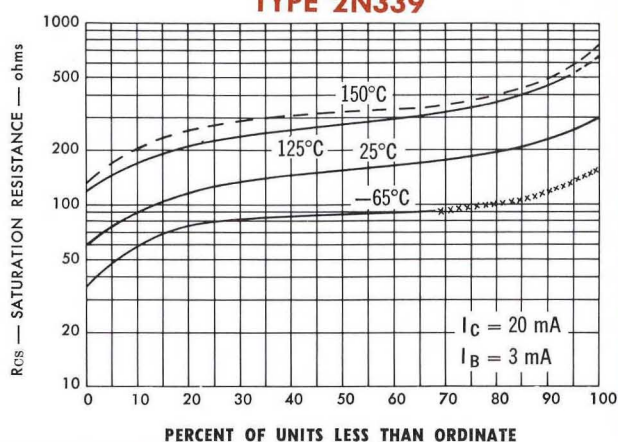
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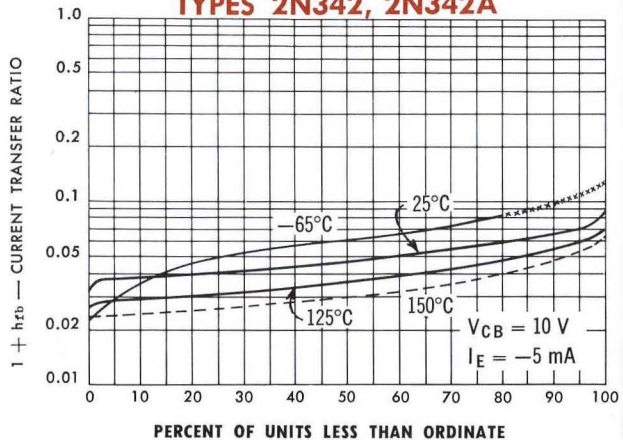
TYPES 2N339, 2N340, 2N341



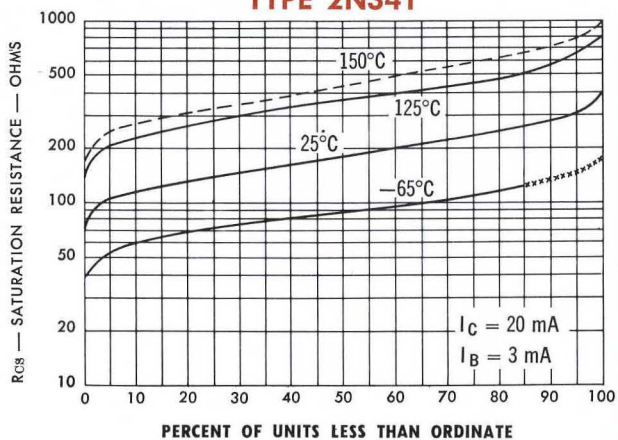
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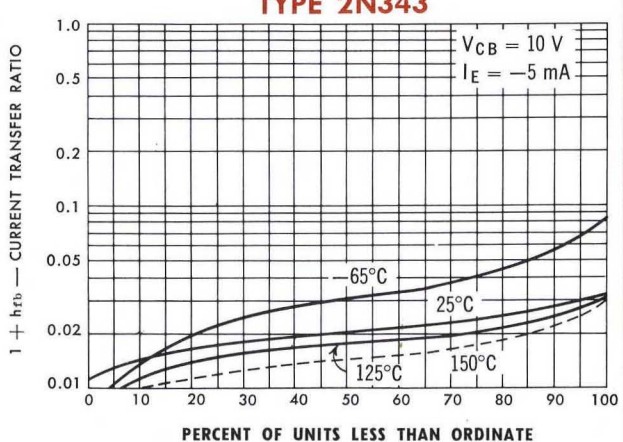
TYPES 2N342, 2N342A



TYPE 2N341



TYPE 2N343



TYPES 2N340, 2N342, 2N342A, 2N343

