

**MOTOROLA ECL  
MACROCELL ARRAY LIBRARY**  
Schematic Symbols

Preliminary  
August 1985

**p-cad**<sup>™</sup>  
PERSONAL CAD SYSTEMS INC.

000-0090-00



PERSONAL CAD SYSTEMS

MOTOROLA ECL MACROCELL ARRAY LIBRARY

SCHEMATIC SYMBOLS

Preliminary

000-0090-00  
August 1985

Personal CAD Systems, Inc.  
981 University Avenue, Bldg. B  
Los Gatos, CA 95030  
(408) 354-7193

Copyright (c) 1985 by Personal CAD Systems, Inc. (P-CAD).

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of Personal CAD Systems, Inc.

Personal CAD Systems, Inc. provides this manual "as is" without warranty of any kind, either expressed or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. P-CAD may make improvements and/or changes in the product(s) and/or the program(s) described in this manual at any time and without notice.

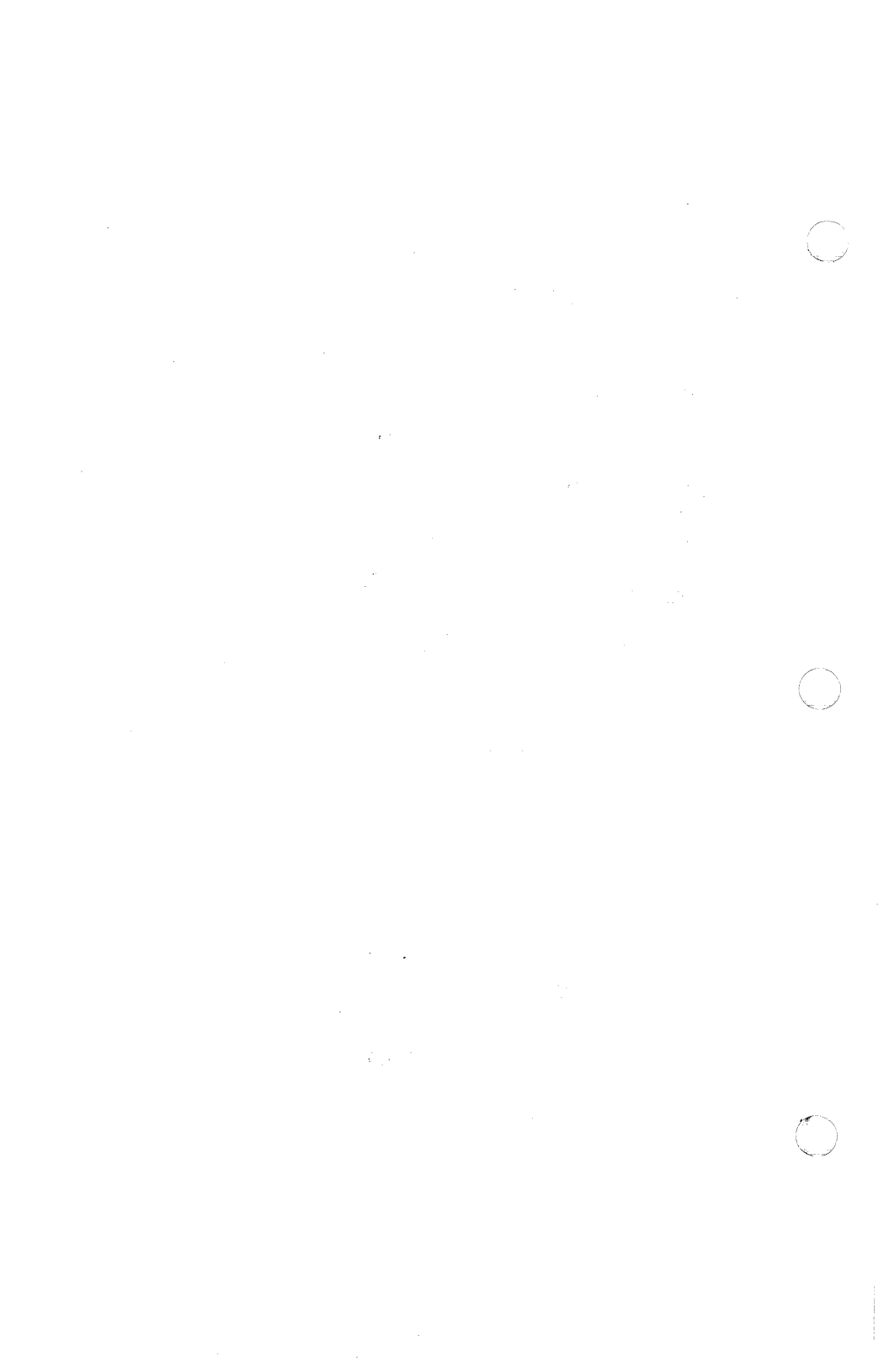
Although P-CAD has gone to great effort to verify the integrity of the information herein, this publication could contain technical inaccuracies or typographical errors. Changes are periodically made to the information herein. These changes will be incorporated in new editions of this publication.

NX-MLCP, PC-CAPS, PC-CARDS, PC-LOGS, PC-BACK, PC-FORM, PC-LINK, PC-NODES, PC-PACK, PC-PHOTO, PC-PLOTS, PC-PRINT, POSTSIM, PREPACK, AND PRESIM are trademarks of Personal CAD Systems; Inc. (P-CAD).

Motorola is a registered trademark of Motorola, Inc. LOGCAP is a trademark of Phoenix Data Systems, Inc.

## CONTENTS

INTRODUCTION .....	1
DIRECTORY STRUCTURE .....	3
CREATING A DESIGN .....	4
Layer Structure .....	5
Drawing Sheets .....	6
Component Attributes .....	6
Special Symbols .....	7
COMPONENT LIST BY SEQUENCE .....	11
COMPONENT LIST BY FUNCTION .....	19
COMPONENT PIN SEQUENCES .....	24
COMPONENT PLOTS .....	32



## INTRODUCTION

This manual and the two Motorola ECL Macrocell Array Library Symbol Diskettes comprise the P-CAD Motorola ECL Macrocell Array Library, or Motorola ECL-MCA Library. The library has been developed at the request of our users, and we welcome any suggestions for improvements or additions.

The library diskettes contain the following files for use with the PC-CAPS schematic capture program:

- Layer structure file, ICLAYS.SCH
- Standard-size drawing sheet files, ASIZE.SCH through ESIZE.SCH
- Component files

The component files include special symbols that you will need to include in your schematic. These special symbols are interpreted by the P-CAD NX-MLCP Motorola IC Interface Program, which translates the netlist for a schematic created with PC-CAPS into a LOGCAP format compatible with Motorola CAD systems. (For additional information about the NX-MLCP program, see the NX-MLCP User's Manual.)

Storage of the library files in a practical directory structure is discussed in the next section of this manual. The following section, "Creating a Design", tells you how to use the files with PC-CAPS to create a design that will interface with Motorola CAD systems.

Motorola ECL-MCA Library

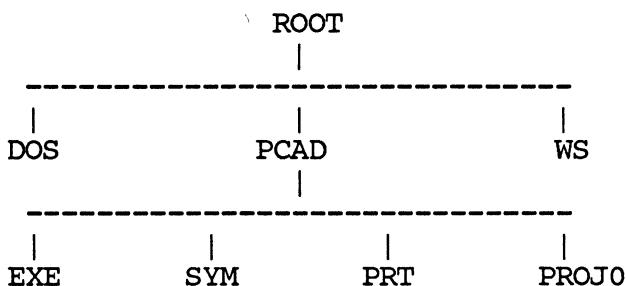
The remainder of the manual is devoted to lists of components by sequence and function, component pin sequences, and component plots.



## DIRECTORY STRUCTURE

For more efficient storage of your files and easier access to the library components, P-CAD recommends that you use a directory structure tailored to your particular applications and design methods. An example of an efficient directory structure is shown in Figure 1.

---



---

Figure 1. Sample Directory Structure

In this example, symbols are stored in the SYM directory and parts are stored in the PRT directory.

## Motorola ECL-MCA Library

### CREATING A DESIGN

To use this library in a schematic design, run PC-CAPS. Instructions are given in the tutorial section of your PC-CAPS User's Manual. When the menu is displayed, select FILE/LOAD and load the ICLAYS.SCH layer structure or one of the standard-size drawing sheet files described below. Then enter the components, special symbols, wires, text, instances, and net names, as required. Each PC-CAPS component contains the electrical "intelligence" required to create a schematic and extract data.

See your PC-CAPS User's Manual for general information on schematic design. Follow the direction provided below for placement of the special symbols required for the NX-MLCP interface program.

**Layer Structure**

The following ICLAYS.SCH layer structure is a modified version of the standard P-CAD layer structure (LAYS.SCH). The ICLAYS.SCH layer structure was used to create the components in the Motorola ECL-MCA Library.

<b>Layer</b>	<b>Name</b>	<b>Pen</b>	<b>Status</b>	<b>Use</b>
1	WIRES	1	OFF	Interconnecting wires
2	BUS	1	OFF	Interconnecting busses/wires
3	GATE	2	ABL	Gate geometry/symbol
4	IEEE	2	OFF	Not used
5	PINFUN	3	OFF	Not used
6	PINNUM	1	OFF	Not used
7	PINNAM	6	ABL	Pin names
8	PINCON	4	ABL	Pin connections (dot)
9	REFDES	2	OFF	Not used
10	ATTR	6	OFF	Visible attributes
11	SDOT	1	OFF	Not used
12	DEVICE	5	ABL	Macrocell ID

## Motorola ECL-MCA Library

Layer	Name	Pen	Status	Use
13	OUTLIN	5	ABL	Macrocell outline
14	ATTR2	6	OFF	Invisible attributes
15	NOTES	6	OFF	Notes/text
16	NETNAM	4	OFF	Net names
17	CMPNAM	5	OFF	Component instance names
18	BORDER	5	OFF	Drawing border

### Drawing Sheets

The standard-size drawing sheet files, ASIZE.SCH through ESIZE.SCH, were created using the ICLAYS.SCH layer structure. When loaded, they provide the correct layer structure for the library plus a standard-size drawing sheet border.

### Component Attributes

Special attributes have been assigned to the library components for use with the NX-MLCP interface program. One attribute has the form SYM=MECL and is intended to be used with future versions of NX-MLCP. Its purpose is to differentiate a macrocell symbol from a user-created hierarchical symbol.

The other attribute is used with an alternative symbol for a macrocell and has the form ALT=<filename>, where <filename> is the macrocell ID. For example, the M50 macrocell has two library symbols, M50.SYM and M50A.SYM. The alternative symbol, M50A, has the attribute ALT="M50" and will be shown in the LOGCAP output of the NX-MLCP Motorola IC Interface program as "M50".

### Special Symbols

In addition to the standard Motorola component symbols, the library includes special "non-component" symbols, which you must include in your schematic for the NX-MLCP interface program. The special symbols are:

- PADIN.SYM and PADOUT.SYM for circuit inputs and outputs
- WOR2.SYM through WOR8.SYM for Wired-OR components with from 2 to 8 inputs.

Figure 2 illustrates the placement of these symbols in a schematic, and Figure 3 shows the corresponding LOGCAP output from the NX-MLCP interface program. For information about the use of these symbols in specific circuit designs, see the appropriate Motorola documentation or consult Motorola technical support personnel.

### Input and Output Symbols

For each input signal to the circuit, there must be a PADIN.SYM with input and output pins. A net connected to an output pin will be listed as an input signal on the \$INP line of the LOGCAP output. This signal can be viewed as the input signal to the circuit from an external source.

For each output from the circuit there must be a PADOUT.SYM with input and output pins. A net must be connected to each of the pins. A net connected to an output pin will be listed as an output signal on the \$OUT line of the LOGCAP output. This signal can be viewed as the output signal to the external environment.

Nets connected to the pins of the PADOUT symbols will also be listed as the input and output signals in the \$SUBU BOUT statement of the LOGCAP output.

### Wired-OR Symbols

A Wired-OR function used in the circuit must be represented by a WORn.SYM symbol, where "n" indicates the number of inputs. For each WOR.SYM there will be a \$OR statement in the LOGCAP output.

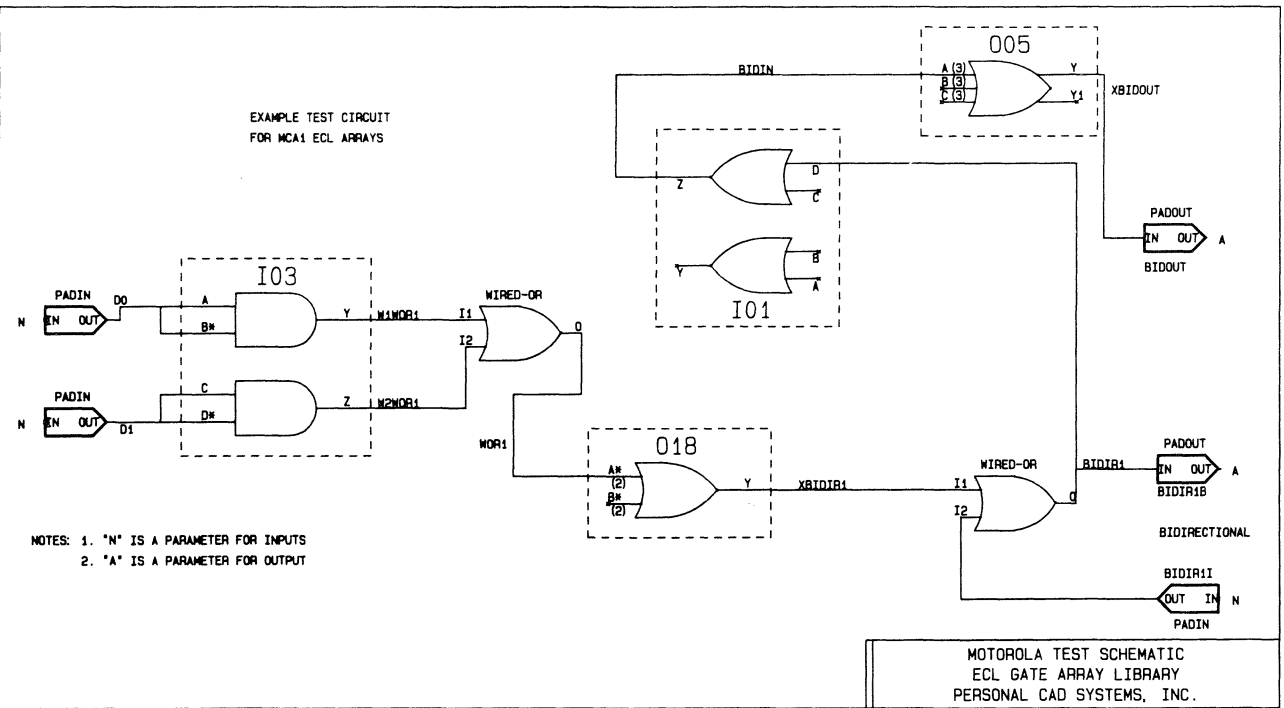


Figure 2. Test Schematic

# Motorola ECL-MCA Library

---

```
$*****  
$$  
$$ Copyright (C) 1985 - Personal CAD Systems Inc. *  
$$  
$$ Program : NX-MLCP VERSION 1.24 *  
$$ Date : Jul 01 1985 *  
$$ Time : 11:22:57 AM *  
$$ File In : MCA1B.NLT *  
$$ File Out : MCA1B.LCP *  
$$ Format : LOGCAP LIST *  
$$  
$$*****
```

```
$NETWORK  
$INP D0 D1 BIDIR1I  
$OUT BIDIR1B BIDOUT  
$OR 0 0  
WOR1 2 W1WOR1 W2WOR1  
$OR 0 0  
BIDIR1 2 XBIDIR1 BIDIR1I  
$$SUBU I03  
W2WOR1 W1WOR1 / &  
D0 D0 D1 D1  
$$SUBU O18  
XBIDIR1 / &  
WOR1 CONO  
$$SUBU I01  
BIDIN UNO / &  
CONO CONO CONO BIDIR1  
$$SUBU O05  
UN1 XBIDOUT / &  
BIDIN CONO CONO  
$$SUBU BOUT  
BIDIR1B / &  
BIDIR1  
$$SUBU BOUT  
BIDOUT / &  
XBIDOUT
```

---

Figure 3. LOGCAP Output



COMPONENT LIST BY SEQUENCE

The component filename is the component number plus the extension .SYM; for example, H01.SYM.

Number	Disk Number	Plot Page
H01	1	32
H02	1	32
H03	1	32
H04	1	32
H05	1	32
H06	1	32
H07	1	32
H08	1	33
H09	1	33
H10	1	33
H11	1	33
H12	1	33
M13	1	33
M14	1	33
H15	1	33
H16	1	34

Motorola ECL-MCA Library

COMPONENT LIST BY SEQUENCE (Cont'd)

<u>Number</u>	<u>Disk Number</u>	<u>Plot Page</u>
H17 .....	1 .....	34
H18 .....	1 .....	34
M19 .....	1 .....	34
M20 .....	1 .....	35
M21 .....	1 .....	35
M22 .....	1 .....	35
M23 .....	1 .....	35
M24 .....	1 .....	36
M25 .....	1 .....	36
M26 .....	1 .....	36
H27 .....	1 .....	36
M28 .....	1 .....	37
M29 .....	1 .....	37
M30 .....	1 .....	38
H31 .....	1 .....	38
M32 .....	1 .....	38
H33 .....	1 .....	38
H34 .....	1 .....	38

Motorola ECL-MCA Library

COMPONENT LIST BY SEQUENCE (Cont'd)

<u>Number</u>	<u>Disk Number</u>	<u>Plot Page</u>
H35 .....	1 .....	38
M36 .....	1 .....	39
M37 .....	1 .....	39
M38 .....	1 .....	39
M39 .....	1 .....	39
H40 .....	1 .....	39
H41 .....	1 .....	39
H42 .....	1 .....	39
H43 .....	1 .....	39
M44 .....	1 .....	39
M45 .....	1 .....	39
M46 .....	1 .....	39
M47 .....	1 .....	39
M48 .....	1 .....	39
M49 .....	1 .....	40
M50 .....	1 .....	40
M50A .....	1 .....	40
M51 .....	1 .....	40

Motorola ECL-MCA Library

COMPONENT LIST BY SEQUENCE (Cont'd)

Number	Disk Number	Plot Page
M51A .....	1 .....	40
H52 .....	1 .....	40
H52A .....	1 .....	40
M53 .....	1 .....	40
H54 .....	1 .....	40
M55 .....	1 .....	40
M56 .....	1 .....	41
H57 .....	1 .....	41
H58 .....	1 .....	41
H59 .....	1 .....	41
H60 .....	1 .....	41
H61 .....	1 .....	41
H62 .....	1 .....	42
H63 .....	1 .....	42
H64 .....	1 .....	42
H65 .....	1 .....	42
H66 .....	1 .....	42
H67 .....	1 .....	42

COMPONENT LIST BY SEQUENCE (Cont'd)

Number	Disk Number	Plot Page
M68 .....	1 .....	42
H69 .....	1 .....	42
H71 .....	1 .....	42
H72 .....	1 .....	42
H72A .....	1 .....	42
H73 .....	1 .....	43
M74 .....	1 .....	43
M74A .....	1 .....	43
H75 .....	1 .....	43
M76 .....	1 .....	43
H77 .....	1 .....	43
H78 .....	1 .....	44
M79 .....	1 .....	44
M80 .....	1 .....	44
H81 .....	1 .....	44
H82 .....	2 .....	44
H83 .....	2 .....	44
H84 .....	2 .....	44

Motorola ECL-MCA Library

COMPONENT LIST BY SEQUENCE (Cont'd)

<u>Number</u>	<u>Disk Number</u>	<u>Plot Page</u>
I01 .....	2 .....	45
I02 .....	2 .....	45
I03 .....	2 .....	45
I04 .....	2 .....	45
I05 .....	2 .....	45
I06 .....	2 .....	45
I07 .....	2 .....	45
I08 .....	2 .....	45
I09 .....	2 .....	45
I10 .....	2 .....	45
I11 .....	2 .....	45
I12 .....	2 .....	46
I13 .....	2 .....	46
I14 .....	2 .....	46
I15 .....	2 .....	46
I16 .....	2 .....	46
I20 .....	2 .....	46
O01 .....	2 .....	46

Motorola ECL-MCA Library

COMPONENT LIST BY SEQUENCE (Cont'd)

<u>Number</u>	<u>Disk Number</u>	<u>Plot Page</u>
002 .....	2 .....	46
003 .....	2 .....	46
004 .....	2 .....	46
005 .....	2 .....	46
006 .....	2 .....	46
007 .....	2 .....	47
008 .....	2 .....	47
009 .....	2 .....	47
010 .....	2 .....	47
011 .....	2 .....	47
012 .....	2 .....	47
013 .....	2 .....	47
014 .....	2 .....	47
015 .....	2 .....	47
016 .....	2 .....	47
017 .....	2 .....	47
018 .....	2 .....	48
019 .....	2 .....	48

Motorola ECL-MCA Library

COMPONENT LIST BY SEQUENCE (Cont'd)

Number	Disk Number	Plot Page
O20 .....	2 .....	48
O21 .....	2 .....	48
O24 .....	2 .....	48
O25 .....	2 .....	48
WOR2 .....	2 .....	48
WOR3 .....	2 .....	48
WOR4 .....	2 .....	48
WOR5 .....	2 .....	48
WOR6 .....	2 .....	48
WOR7 .....	2 .....	48
WOR8 .....	2 .....	48
PADIN .....	2 .....	48
PADOUT .....	2 .....	48



**COMPONENT LIST BY FUNCTION**

The component filename is the component number plus the extension .SYM; for example, H01.SYM.

**Gates**

H01  
H02  
H03  
H04  
H05  
H06  
H07  
H08  
H09  
H10  
H11  
H12  
M13  
M14  
H15  
H16  
H17  
H18  
M19  
M20  
M21  
M22  
M23  
M24  
M25  
M26  
H27  
M28  
M29  
M30  
M55  
M56

COMPONENT LIST BY FUNCTION (Cont'd)

Gates (Cont'd)

- H57
- H58
- H59
- H60
- H61
- H62
- H63
- H64
- H65
- H66
- H71
- H75
- M76
- H77

Flip-Flops

- H31      Dual D F/F
- M32      D F/F with Mux
- H78      Dual D F/F
- H81      Dual D F/F with Diff, Clock  
          and Data
- H82      Dual D F/F with Set and Reset

Latches

- H33      Dual 2-Bit Latch
- H34      Dual Latch with Mux
- H35      Quad Latch
- H67      Dual Latch

## COMPONENT LIST BY FUNCTION (Cont'd)

**Multiplexers**

M36	4 to 1 Mux with Enable
M37	4 to 1 Mux with Enable
M38	4 to 1 Mux with Enable
M39	4 to 1, 2 to 1 Mux
H40	Quad 2 to 1 Mux, Com Sel
H41	Quad 2 to 1 Mux
H42	Quad 2 to 1 Mux with Enable
H43	Dual 2 to 1 Mux
M68	4 to 1 Mux
H69	Dual 2 to 1 Mux
M80	4 to 1 Mux with Enable

**Decoders**

M44	p/4 Decoder (High)
M45	1/4 Decoder (Low)
M46	1/4 Decoder (High)
M47	1/4 Decoder (Low)
M79	1/4 Decoder (Low)

**Adders**

M50	Dual Adder
M50A	Dual Adder
M51	Dual Adder
M51A	Dual Adder
H52	Dual Full Adder
H52A	Dual Full Adder
M53	Dual Adder and Half Adder
H54	Dual Half Adder
H72	Dual Full Adder
H73	Dual Half Adder
M74	Full Adder

Motorola ECL-MCA Library

COMPONENT LIST BY FUNCTION (Cont'd)

Miscellaneous Functions

M48      Priority Encoder  
M49      Priority Expander  
H83      High Resolution Diff Comp  
H84      High Gain Receiver

Interface Cells

I01  
I02  
I03  
I04  
I05  
I06  
I07  
I08  
I09  
I10  
I11  
I12  
I13  
I14  
I15  
I16  
I20

Output Cells

O01  
O02  
O03  
O04  
O05  
O06

**COMPONENT LIST BY FUNCTION (Cont'd)**

**Output Cells (Cont'd)**

O07  
O08  
O09  
O10  
O11  
O12  
O13  
O14  
O15  
O16  
O17  
O18  
O19  
O20  
O21  
O24  
O25

**Special Symbols**

WOR2	2-input Wired-OR
WOR3	3-input Wired-OR
WOR4	4-input Wired-OR
WOR5	5-input Wired-OR
WOR6	6-input Wired-OR
WOR7	7-input Wired-OR
WOR8	8-input Wired-OR
PADIN	Input Pad
PADOUT	Output Pad

Motorola ECL-MCA Library

COMPONENT PIN SEQUENCES

H01:	Y'	Y	Z	Z'	A	B	C	D	E
	F	G							
H02:	Y	Y'	Z'	Z	A	B	C	D	E
	F	G							
H03:	Y	Y'	Z'	Z	A	B	C	D	E
	F	G							
H04:	Y'	Y	Z	Z'	B	C	A	D	E
H05:	Y	Y'	A	B	C	D	E	F	G
H06:	Y	Y'	A	B	C	D	E	F	
H07:	Y	B	C	A	D	E	F		
H08:	Y	B	C	A	D	E	F		
H09:	Y'	Y	A	B	C	D			
H10:	Y	Y'	A	B	C				
H11:	Y	A	B	C	D				
H12:	Y	A	B	C	D				
M13:	Y	Y'	A	B	C	D	E	F	G
	H	I	J	K	L				
M14:	Y'	Y	A	B	D	E	G	H	J
	K	C	F	I	L				
H15:	Y	Y'	A	B	C	D	E	F	
H16:	Y'	Y	A	B	C	D	E	F	
H17:	Y	Y'	A	B	C	D	E	F	G

COMPONENT PIN SEQUENCES (Cont'd)

H18:	Y	A	B	C	D	E			
M19:	Y H	Z	A	B	C	D	E	F	G
M20:	Y H	Y' I	A J	B K	C L	D	E	F	G
M21:	Y H	Y' I	A J	B K	C L	D	E	F	G
M22:	Y H	Y' I	A J	B K	C L	D	E	F	G
M23:	Z F	Y' G	Y H	Z' I	A J	B K	C	D	E
M24:	Y H	Y' I	A J	B K	C L	D M	E N	F	G
M25:	Y H	Y' I	A J	B L	C M	D N	E	F	G
M26:	Y' H	Y I	A J	B K	C L	D	E	F	G
H27:	Y	Y'	A	B	C	D	E		
M28:	Y' F	Z' G	Y H	Z I	A J	B K	C L	D	E
M29:	Y' G	Y H	A I	B J	C K	D	E	L	F
M30:	Z' F	Y G	Z H	Y' I	A J	B K	C	D	E
H31:	Q	Q'	C1	C2	D	R			

# Motorola ECL-MCA Library

## COMPONENT PIN SEQUENCES (Cont'd)

M32:	Q	Q'	C1	C2	D0	D1	S	R	
H33:	Q0'	Q0	Q1	Q1'	E1	E2	D0	D1	R
H34:	Q	D0	D1	S	E1	E2	R		
H35:	Q0'	Q0	Q1	Q1'	D0	D1	E0	E1	
M36:	Y	A0	A1	A2	A3	S0	S1	E	
M37:	Y	A0	A1	A2	A3	S0	S1	E	
M38:	Y	A0	A1	A2	A3	S0	S1	E	
M39:	Y	Z'	Z	A0	A1	A2	A3	B0	B1
	S	S0	S1						
H40:	Y	Y'	Z'	Z	S1	S2	A0	A1	B0
	B1								
H41:	Y	Y'	Z'	Z	A0	A1	B0	B1	SA
	SB								
H42:	Y	Z	A0	A1	B0	B1	E	S	
H43:	Y'	Y	A0	B0	A1	B1	S		
M44:	Y2	Y3	Y1	Y0	A0	A1	E		
M45:	Y3	Y2	Y0	Y1	A0	A1	E		
M46:	Y3	Y1	Y0	Y2	A0	A1	E		
M47:	Y3	Y2	Y0	Y1	A0	A1	E		
M48:	Y1	Y2	Y0	D0	D1	D2	D3		



COMPONENT PIN SEQUENCES (Cont'd)

M49:	Y1 H1	Y2	Y3	Y0	H2	L0	L1	L2	H0
M50:	CO	S	B1	B2	A	CI			
M50A:	CO	S	B1	B2	A	CI			
M51:	S	CO	B1	B2	A	CI			
M51A:	S	CO	B1	B2	A	CI			
H52:	S	CO	B1	B2	A	CI			
H52A:	S	CO	B1	B2	A	CI			
M53:	P CI	H1	H0	CO	G	A0	B0	A1	B1
H54:	CO	S	A1	A2	B1	B2			
M55:	Y	A	B	C	D	E	F	G	S
M56:	Y I	A S	B	C	D	E	F	G	H
H57:	Y	A	B	C	D				
H58:	Y	A	B	C	D				
H59:	Y' F	Y G	Z H	Z'	A	B	C	D	E
H60:	Y F	Y' G	Z' H	Z	A	B	C	D	E
H61:	Y F	Y' G	Z' H	Z	A	B	C	D	E

Motorola ECL-MCA Library

COMPONENT PIN SEQUENCES (Cont'd)

H62:	Y'	Y	Z	Z'	A	B	C	D	E
	F								
H63	Y'	Y	A	B	C	D			
H64:	Y	Y'	A	B	C	D			
H65:	Y	Y'	A	B	C	D			
H66:	Y'	Y	A	B	C				
H67:	Q'	Q	D	E					
M68:	Y	A0	A1	A2	A3	S0	S1		
H69:	Y	Y'	A0	A1	SA				
H71:	Y	A	B	C	D				
H72:	S	CO	B1	B2	A	CI			
H72A:	S	CO	B1	B2	A	CI			
H73:	CO	S	A1	A2	B1	B2			
M74:	CO	S	B1	B2	A	CI			
M74A:	CO	S	B1	B2	A	CI			
H75:	Y	Y'	A	B	C	D	E	F	G
M76:	Y	Y'	A	B	C	D	E	F	G
	H	I	J	K	L	M	N		
H77:	Y	Y'	A	B	C	D	E		
H78:	Q'	O	C1	C2	D	R			

## COMPONENT PIN SEQUENCES (Cont'd)

M79:	Y3	Y2	Y0	Y1	A0	A1	E	
M80:	Y	A0	A1	A2	A3	S0	S1	E
H81:	Q	Q'	C+	C-	D+	D-	R1	R2
H82:	Q'	Q	C1	C2	D	R	S	
H83:	Y'	Y	AP	AM				
H84:	Y	Y'	A					
I01:	Z	Y	A	B	C	D		
I02:	Z	Y	A	B	C	D		
I03:	Z	Y	A	B	C	D		
I04:	Z	Y	A	B	C	D		
I05:	Z	Y	A	B	C	D		
I06:	Y	Z	A	B	C			
I07:	Y	Z	A	B	C			
I08:	Y'	Y	A	B	C			
I09:	Y	Y'	B	C	A			
I10:	Y'	Y	B	C	A			
I11:	Y	Y'	B	C	A			
I12:	Y	Y'	S1	S2	A0	A1		
I13:	Q	Q'	E1	E2	D			

Motorola ECL-MCA Library

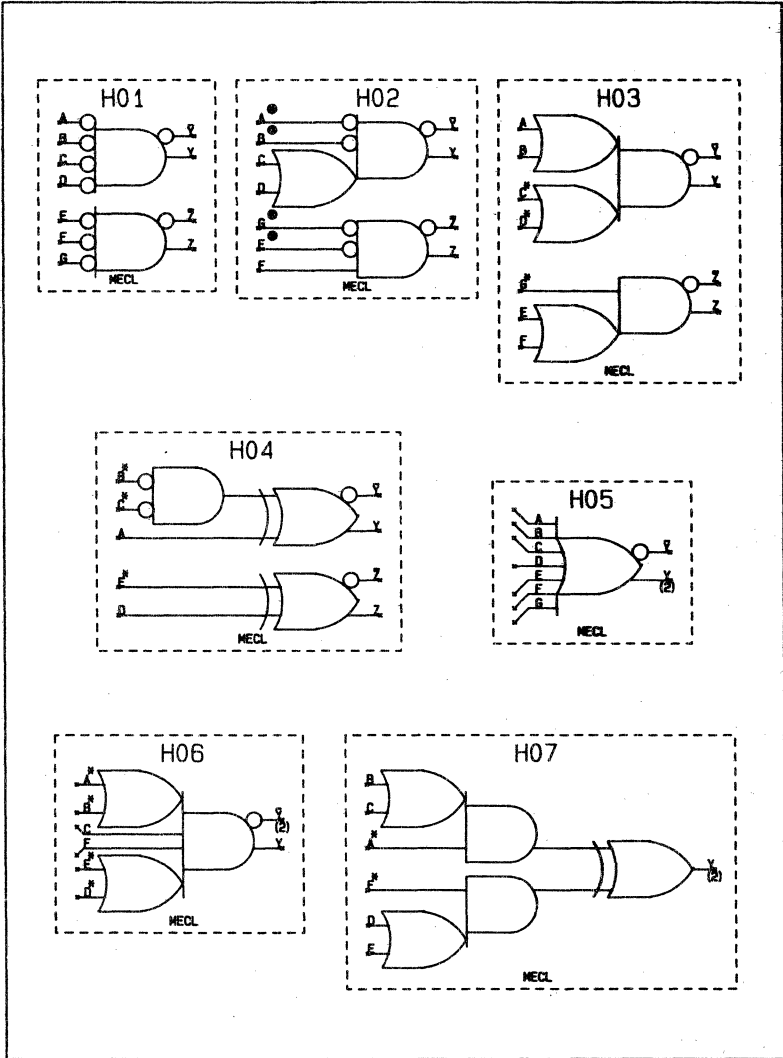
COMPONENT PIN SEQUENCES (Cont'd)

I14:	Q	Q'	E1	E2	D
I15:	Y1	Y2	Y3	A	B
I16:	Y	Y'	A	B	C
I20:	Y	Z	AP	AM	BP BM
O01:	Y1	Y	B	C	A
O02:	Y1	Y	B	C	A
O03:	Y1	Y	B	C	A
O04:	Y1	Y	B	C	A
O05:	Y1	Y	A	B	C
O06:	Y1	Y	A	B	C
O07:	Y1	Y	A	B	C
O08:	Y1	Y	A	B	C
O09:	Y1	Y	B	C	A
O10:	Y1	Y	B	C	A
O11:	Y1	Y	B	C	A
O12:	Y1	Y	S	A0	A1
O13:	Y1	Y	E	S	A0 A1
O14:	Y1	Y	E1	E2	D
O15:	Y1	Y	E1	E2	D

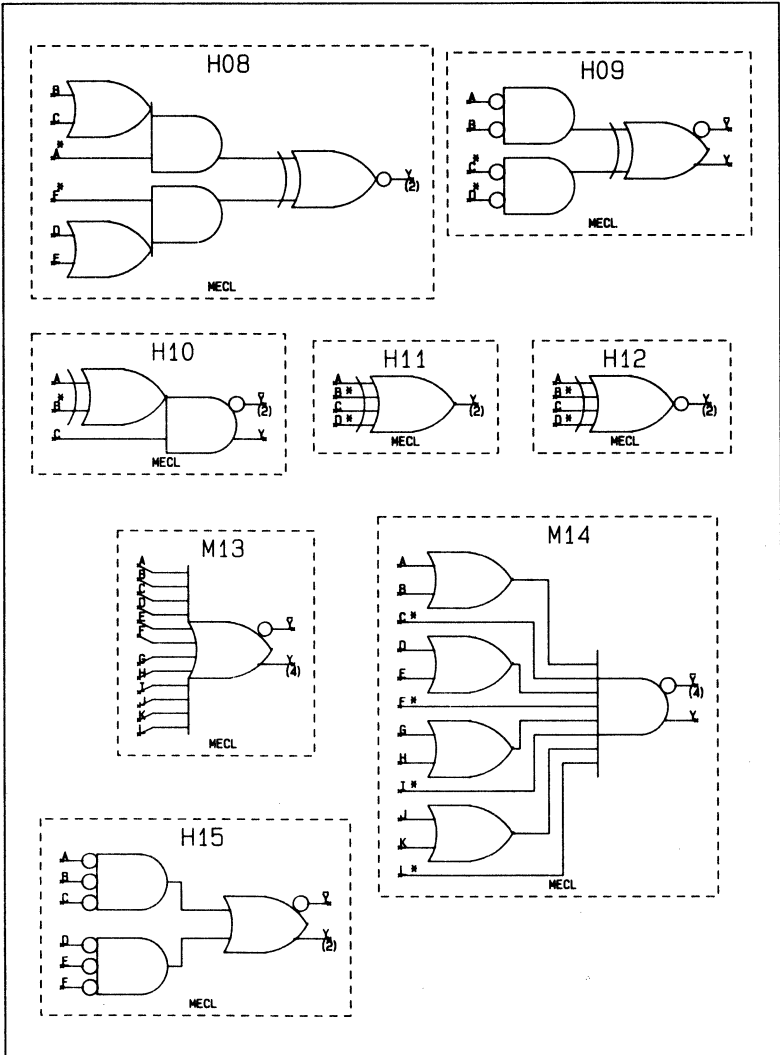
COMPONENT PIN SEQUENCES (Cont'd)

O16:    Y    Z    A    B    C    D  
 O17:    Y    Z    A    B    C    D  
 O18:    Y    A    B  
 O19:    Y    A    B  
 O20:    Y1 Y    A    B    C    D  
 O21:    Y1 Y    A    B    C  
 O24:    Y    A    B  
 O25:    Y    A    B  
 WOR2:   O    I1 I2  
 WOR3:   O    I1 I2 I3  
 WOR4:   O    I1 I2 I3 I4  
 WOR5:   O    I1 I2 I3 I4 I5  
 WOR6:   O    I1 I2 I3 I4 I5 I6  
 WOR7:   O    I1 I2 I3 I4 I5 I6 I7  
 WOR8:   O    I1 I2 I3 I4 I5 I6 I7 I8  
 PADIN:  OUT IN  
 PADOUT: OUT IN

COMPONENT PLOTS

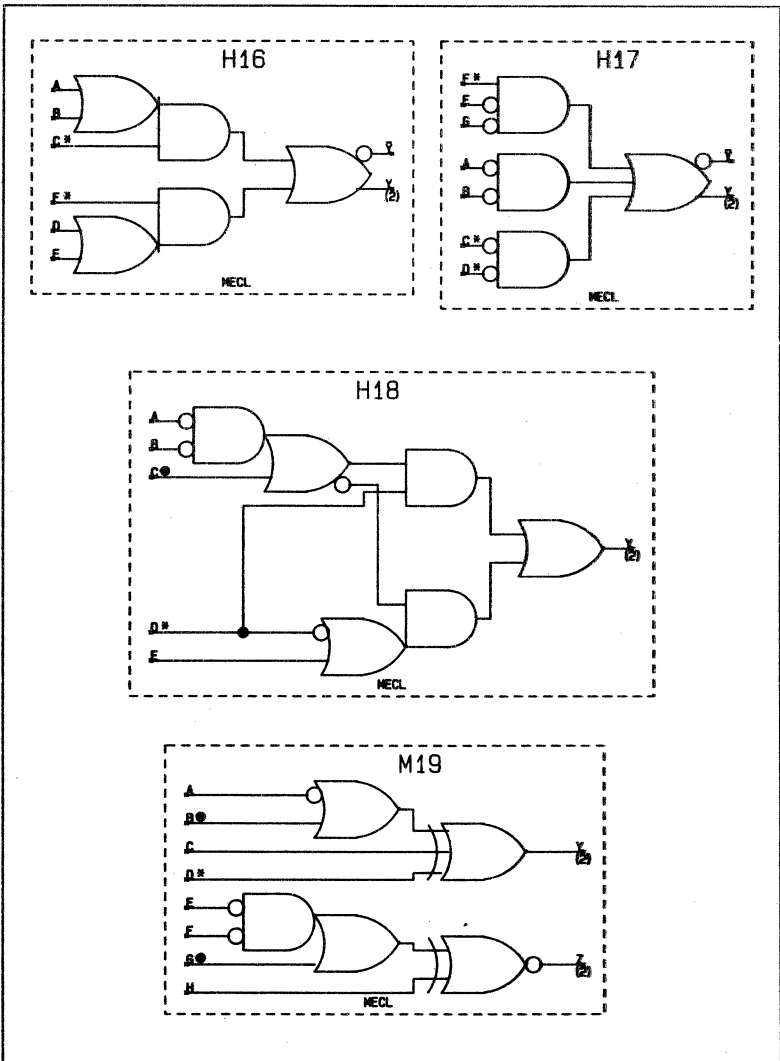


COMPONENT PLOTS (Cont'd)



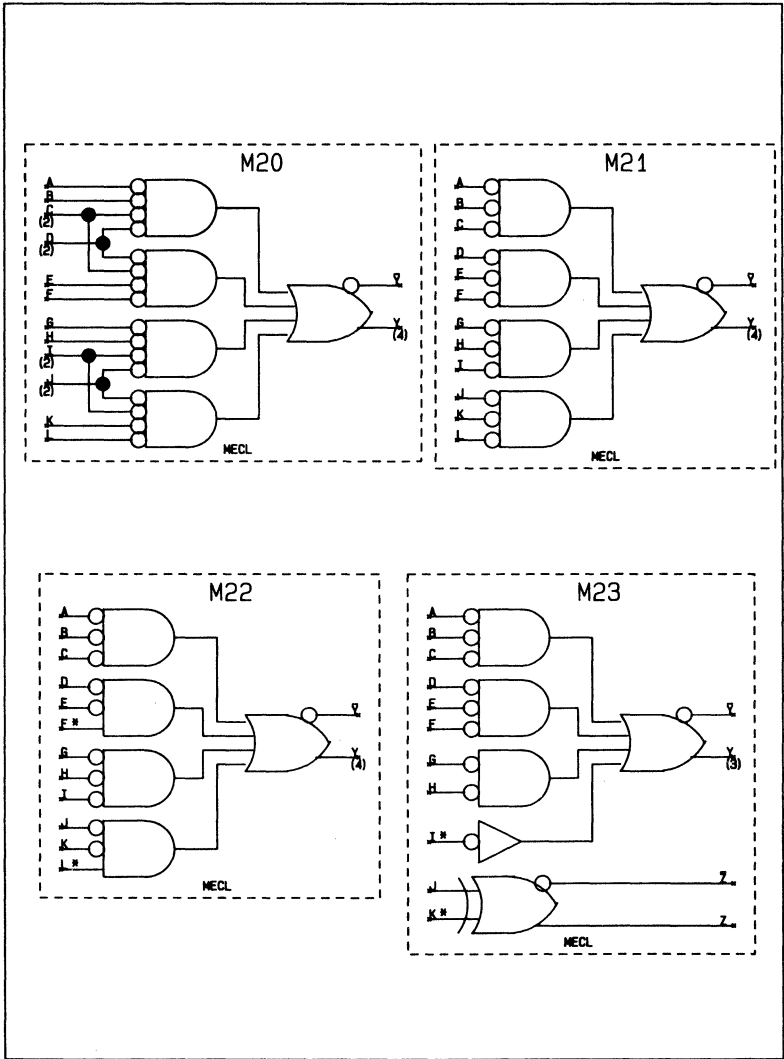
Motorola ECL-MCA Library

COMPONENT PLOTS (Cont'd)



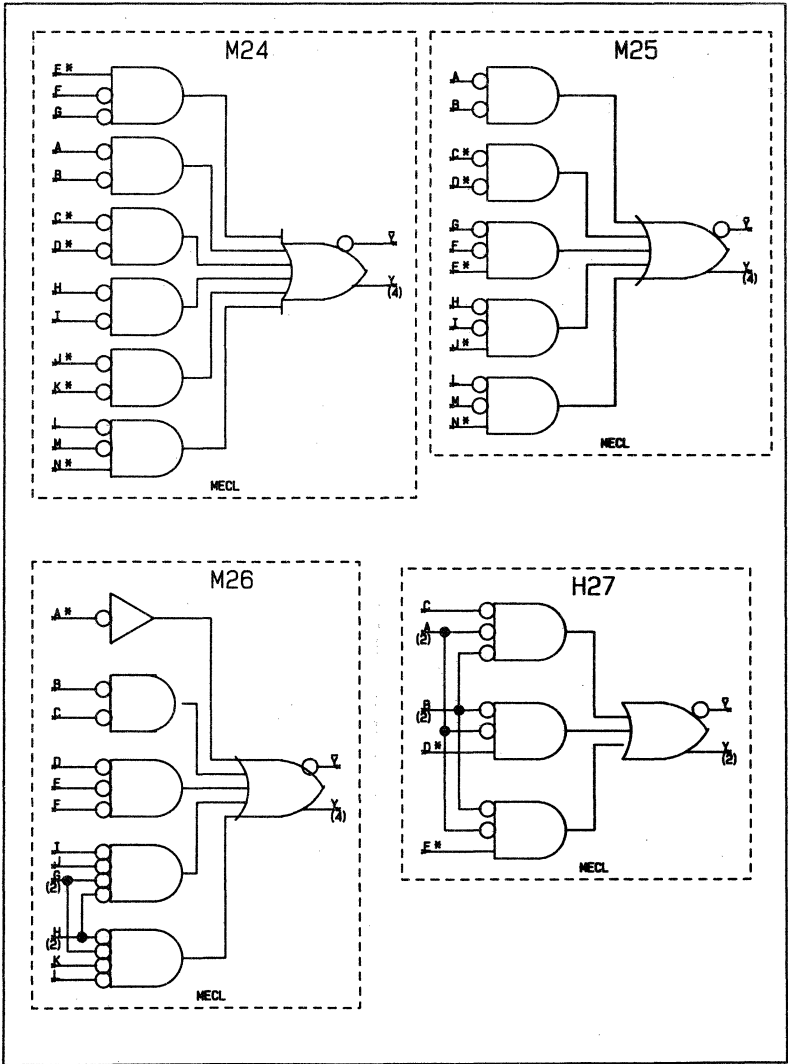


COMPONENT PLOTS (Cont'd)

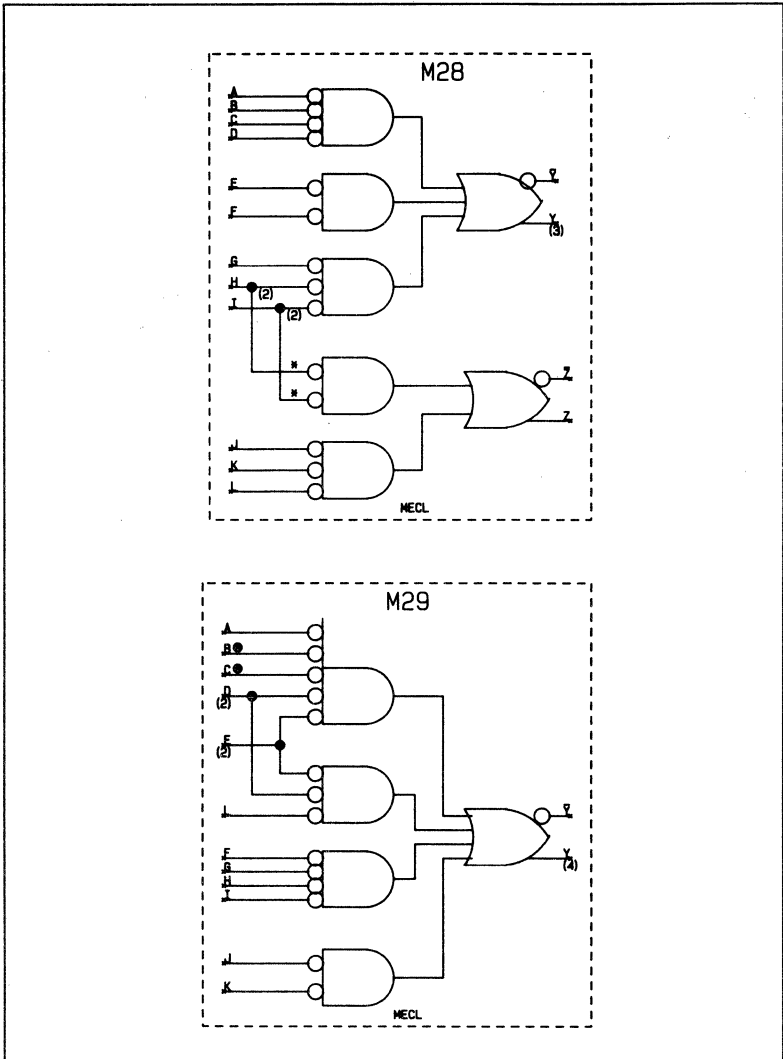


Motorola ECL-MCA Library

COMPONENT PLOTS (Cont'd)

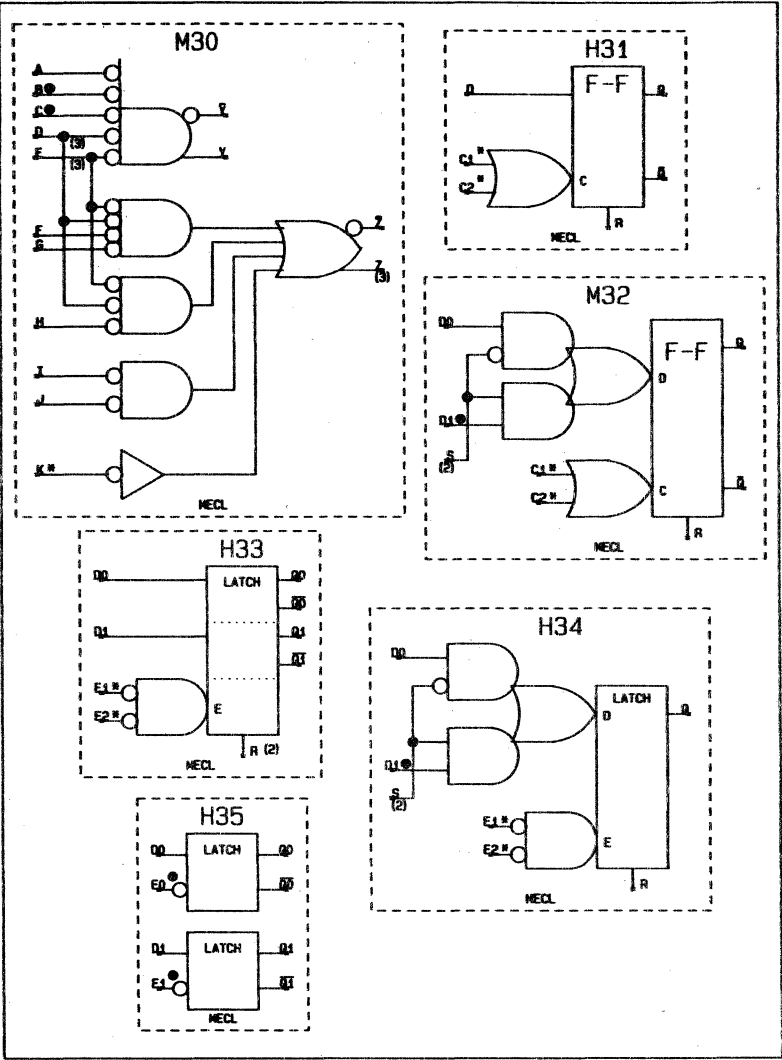


COMPONENT PLOTS (Cont'd)

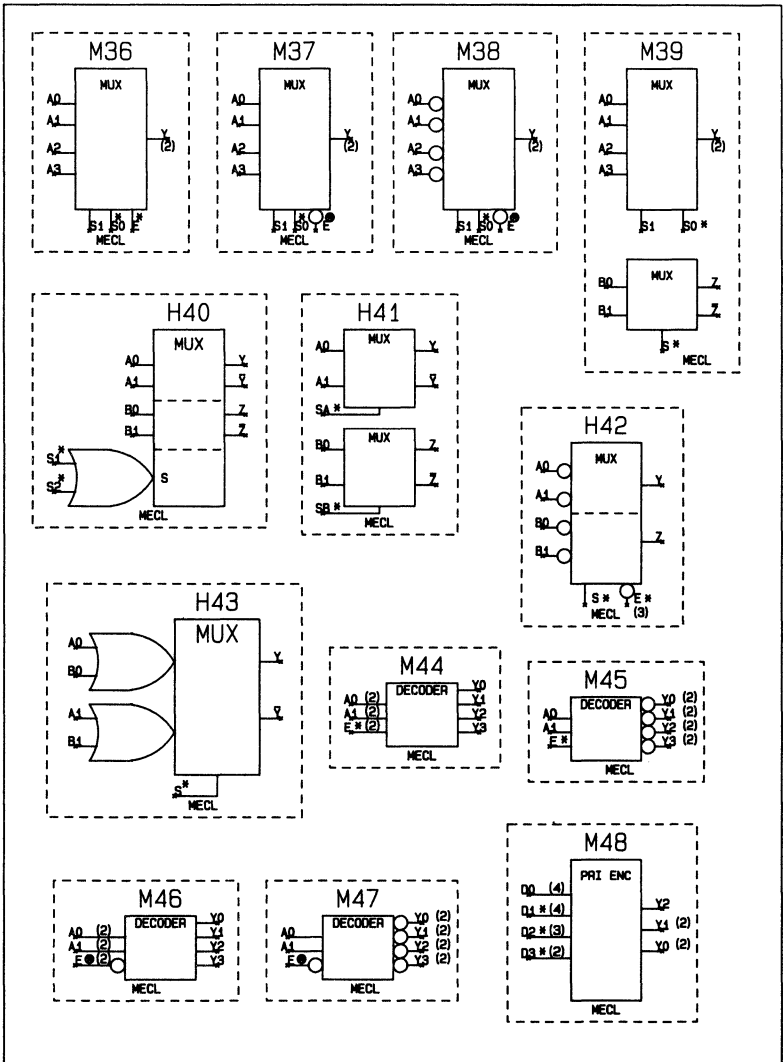


Motorola ECL-MCA Library

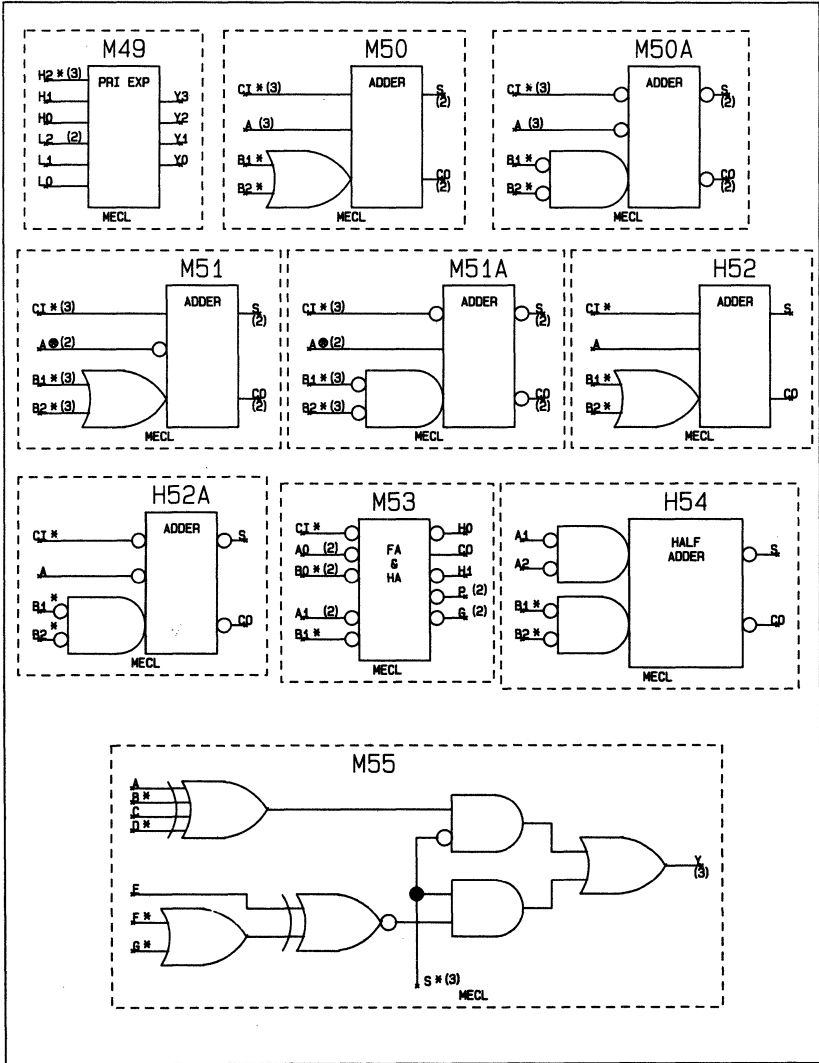
COMPONENT PLOTS (Cont'd)



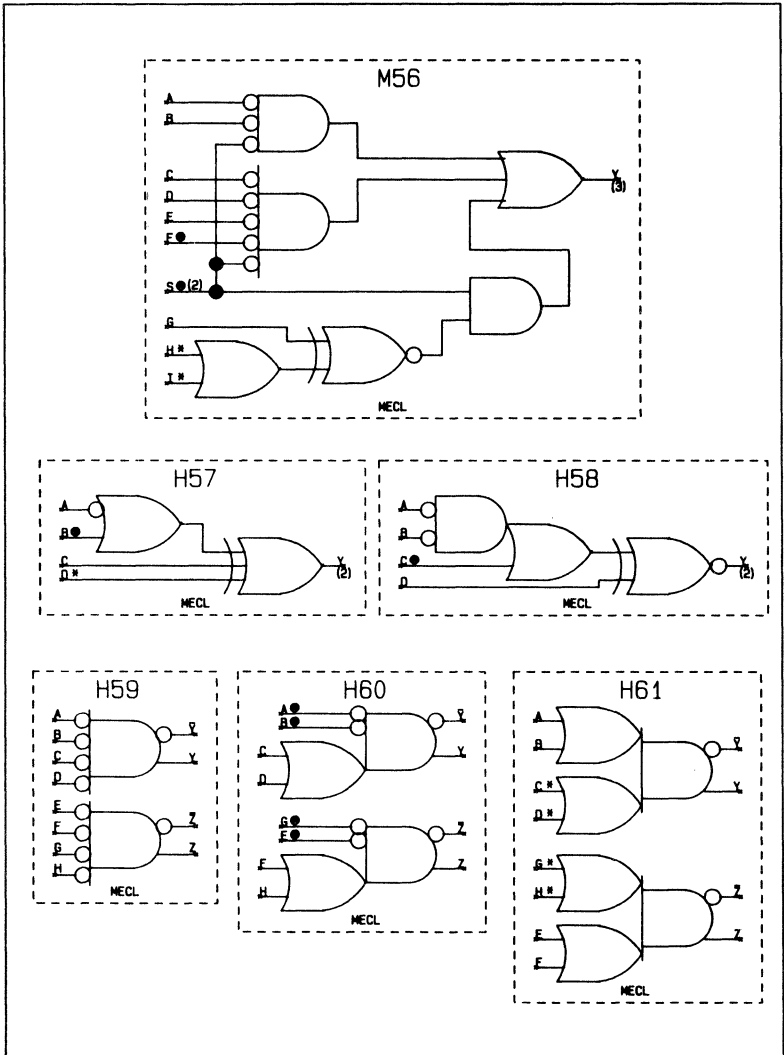
COMPONENT PLOTS (Cont'd)



COMPONENT PLOTS (Cont'd)

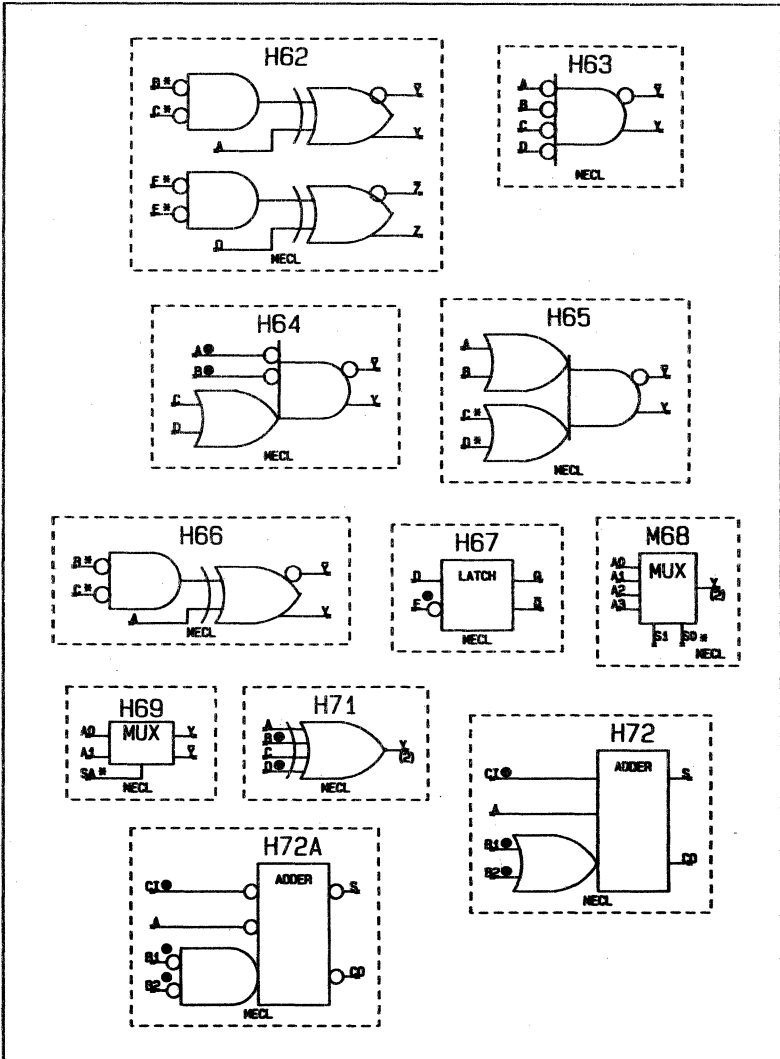


COMPONENT PLOTS (Cont'd)



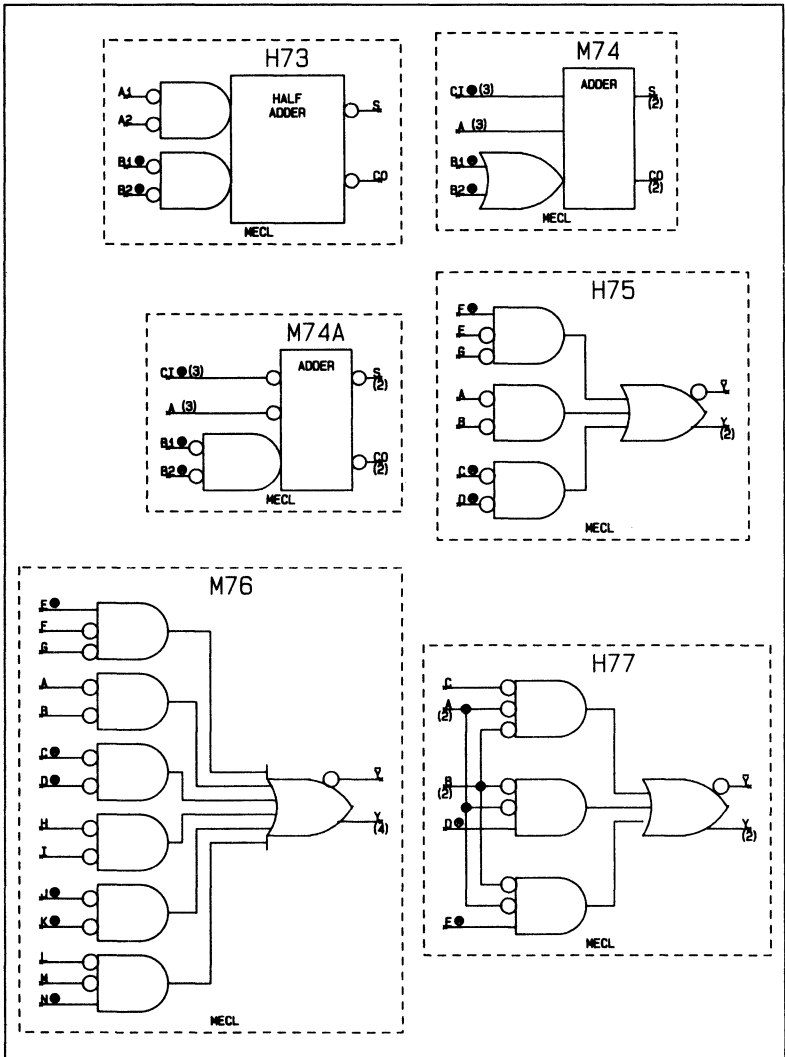
Motorola ECL-MCA Library

COMPONENT PLOTS (Cont'd)



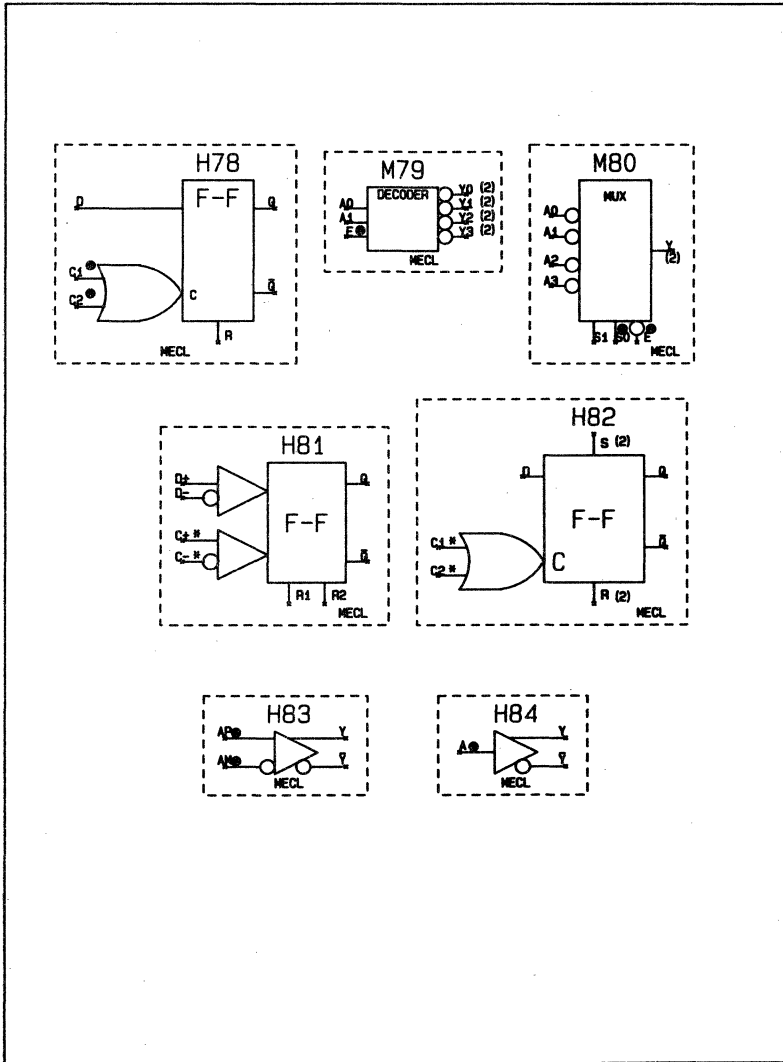


COMPONENT PLOTS (Cont'd)

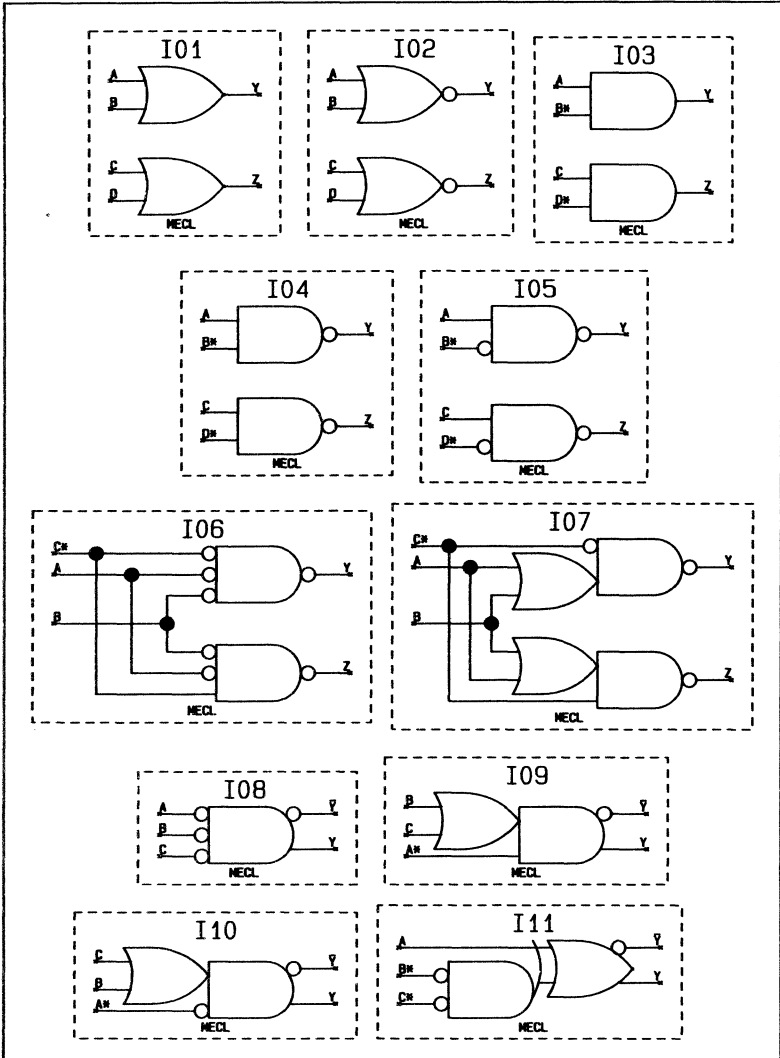


Motorola ECL-MCA Library

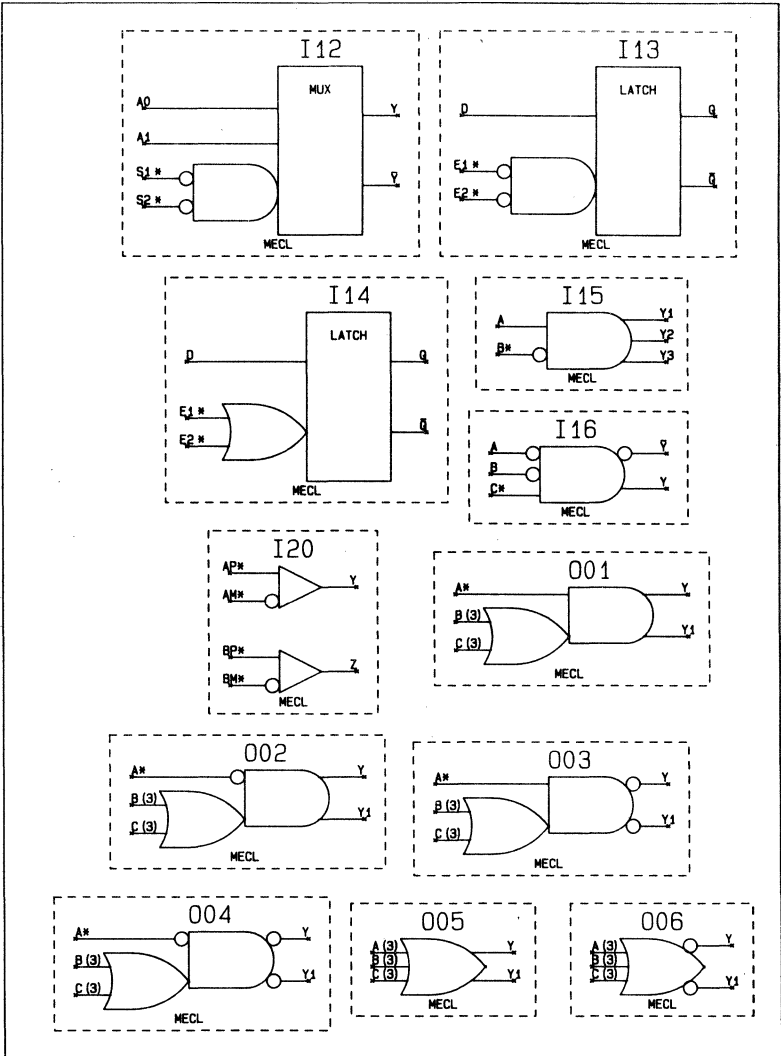
COMPONENT PLOTS (Cont'd)



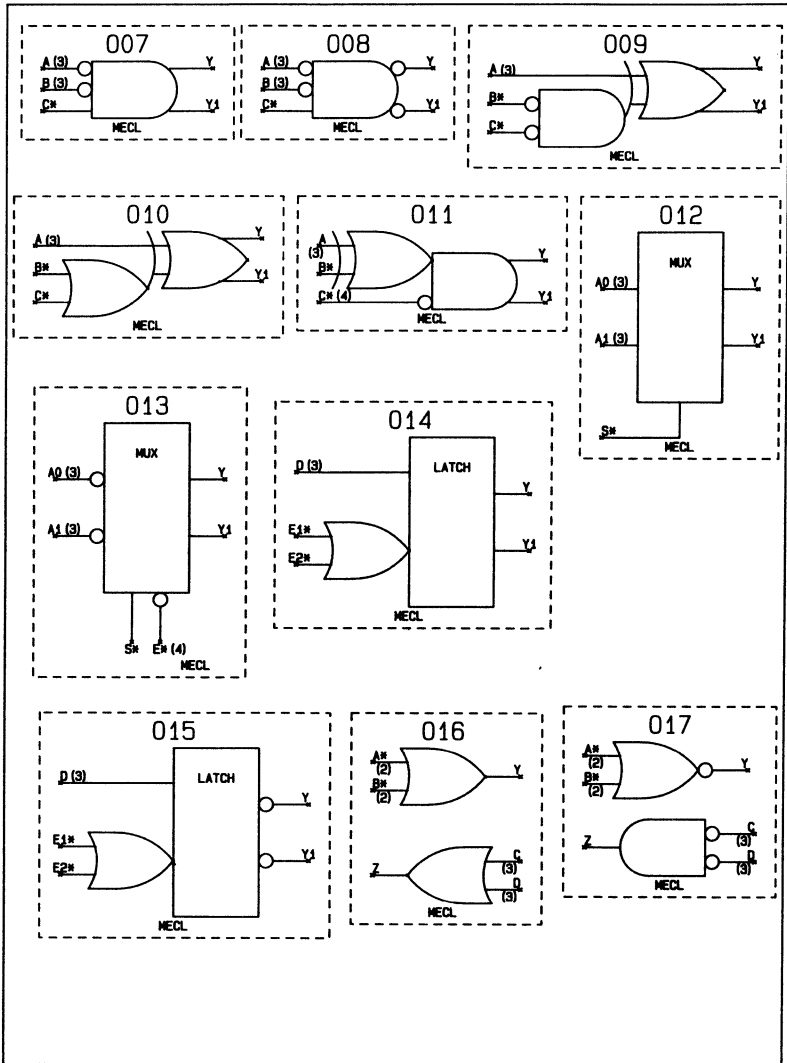
COMPONENT PLOTS (Cont'd)



COMPONENT PLOTS (Cont'd)



COMPONENT PLOTS (Cont'd)



COMPONENT PLOTS (Cont'd)

