

**DISCRETE DEVICE
COMPONENTS LIBRARY**

Schematic Symbols

May 1985

p-cad[™]
PERSONAL CAD SYSTEMS INC.



PERSONAL CAD SYSTEMS, INC.

DISCRETE DEVICE COMPONENTS LIBRARY
SCHEMATIC SYMBOLS

Preliminary

000-0082-00
May 1985

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DISCRETE COMPONENTS LIBRARY

SCHEMATIC SYMBOLS

This manual and the Discrete Library Symbol Diskette comprises the P-CAD Discrete Symbol Library.

This manual includes information on how to use the library; general information about the library; component lists by sequence and function; component plots; and component pin sequences.

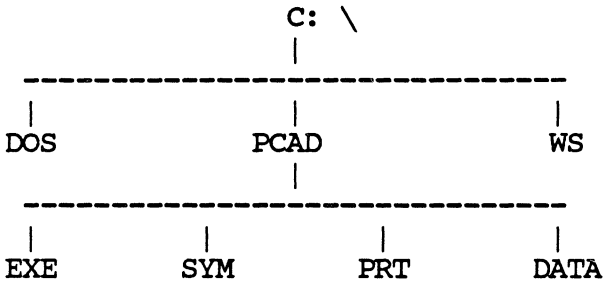
The library diskette contains the component files, a layer structure file, and standard size sheet files.

HOW TO USE THIS LIBRARY

This section describes a recommended directory structure and steps in creating a design.

DIRECTORY STRUCTURE

In order to conserve space on your hard disk, and increase performance, it is recommended that you store library components within a directory structure. This structure should be tailored to your particular applications and design methodologies. The following example illustrates how this is done.



In this case symbols are stored in the SYM directory. Parts are stored in the PRT directory.

CREATING A DESIGN

To use the library in a design, load PC-CAPS. After the menu is displayed, load the correct layer structure. You can load the layer structure supplied with the library, (LAYS.SCH) or you can load one of the drawing sheets on the diskette (A, B, C, D, or E size).

How to Use This Library

Then you can create the design by entering components, wires, text, instance, and net names.

For each PC-CAPS Symbol, there is a corresponding PC-CARDS Part. These are supplied on separate libraries. Both Symbols and Parts contain the electrical "intelligence" required for creating schematics, extracting data, and laying-out printed circuit boards.

Although P-CAD has gone to great effort to carefully verify the integrity of this information, P-CAD is not responsible for the usage of this library, or damages resulting from any technical inaccuracies. P-CAD may make improvements and/or changes in this product at any time and without prior notice.

This library has been developed at the request of our users, and we welcome any suggestions regarding improvements, or other libraries that are desired.

GENERAL INFORMATION

The following layer structure, LAYS.SCH, is included on the Discrete Symbol Library diskette. This LAYS.SCH is the standard P-CAD layer structure that has been used in creating the Discrete component Library Symbols.

<u>LAYER</u>	<u>NAME</u>	<u>PEN #</u>	<u>STATUS</u>	<u>USE</u>
1	WIRES	1	OFF	Interconnecting wires
2	BUS	1	OFF	Interconnecting busses/wires
3	GATE	2	ON	Gate geometry/symbol
4	IEEE	2	OFF	Used only on IEEE
5	PINFUN	3	OFF	Used only on IEEE
6	PINNUM	1	ABL	Pin Numbers
7	PINNAM	6	OFF	Not used
8	PINCON	1	ABL	Pin connections (dot)
9	REFDES	2	ABL	Reference Designator
10	ATTR	6	OFF	Not Used

General Information

<u>LAYER</u>	<u>NAME</u>	<u>PEN #</u>	<u>STATUS</u>	<u>USE</u>
11	SDOT	1	OFF	Not used
12	DEVICE	5	OFF	Device Name

COMPONENT LIST BY SEQUENCE

NUMBER	SYMBOL PAGE#	SYMBOL DISK#
AGND	1	1
BRDG	1	1
BREAKER	2	1
CAP	1	1
CASE-A	1	1
CASE-B	1	1
CASE-C	1	1
CASE-D	1	1
CK06	1	1
CK62	1	1
CM04	1	1
CM05	1	1
CM06	1	1
CON40	2	1
CON50	2	1
CRX	1	1
DB25	2	1
DGND	1	1
DIODE	1	1
DIP-2	1	1
DIP-4	1	1
DIP-6	1	1
DIP-8	1	1
DIP-10	1	1
DO7	1	1
FUSE	2	1
INDUCTOR	2	1
NFET	1	1
NMOS	1	1
NPN	1	1
PFET	1	1
2PIN	2	1
3PIN	2	1
4PIN	2	1
6PIN	2	1

Component List by Sequence

9PIN	2	1
15PIN	2	1
24PIN	2	1
34PIN	2	1
40PIN	2	1
50PIN	2	1
PIN2A	2	1
PIN3A	2	1
PIN4A	2	1
PIN6A	2	1
PIN9A	2	1
PIN15A	2	1
PIN24A	2	1
PIN25A	2	1
PIN34A	2	1
PIN40A	2	1
PIN50A	2	1
156X3	2	1
156X6	2	1
156X10	2	1
PMOS	1	1
PNP	1	1
POLCAP	1	1
POWER	1	1
RC07	1	1
RC32	1	1
RC42	1	1
RECT	1	1
RES	1	1
RN20	1	1
RT10	1	1
RT11	1	1
RT24	1	1
RT24X	1	1
SCHDIODE	1	1
SIP6	1	1
SIP8	1	1
SIP10	1	1
TO3NPN	1	1
TO3PNP	1	1

Component List by Sequence

TO5NPN	1	1
TO5PNP	1	1
TO18	1	1
TO33	1	1
TO39	1	1
TO66NPN	1	1
TO66PNP	1	1
TO92NPN	1	1
TO92PNP	1	1
XFORMER	2	1
XTAL	1	1
ZNR	1	1

COMPONENT LIST BY FUNCTION

<u>Component</u>	<u>Description</u>
RESISTORS	
RES	Standard Resistor
RT10	Variable Resistor
RT11	Variable Resistor
RT24	Variable Resistor
RT24X	Variable Resistor
RECT	Variable Resistor
RC07	Standard Resistor
RC32	Standard Resistor
RC42	Standard Resistor
RN20	Standard Resistor
CAPACITORS	
CAP	Standard Capacitor
CM04	Polarized Capacitor
CM05	Polarized Capacitor
CM06	Polarized Capacitor
CK06	Polarized Capacitor
CK62	Polarized Capacitor
CASE-A	Polarized Capacitor
CASE-B	Polarized Capacitor
CASE-C	Polarized Capacitor
CASE-D	Polarized Capacitor
POLCAP	Polarized Capacitor
DIODES	
DIODE	Standard Diode
D07	Standard Diode
ZNR	Zener Diode
CRX	Standard Diode
SCHDIODE	Schottky Diode
BRDG	Diode Bridge
TRANSISTORS	

Component List by Function

PNP	Standard PNP Transistor
TO3PNP	Standard PNP Transistor
TO5PNP	Standard PNP Transistor
TO66PNP	Standard PNP Transistor
TO92PNP	Standard PNP Transistor
NPN	Standard NPN Transistor
TO3NPN	Standard NPN Transistor
TO5NPN	Standard NPN Transistor
TO66NPN	Standard NPN Transistor
TO92NPN	Standard NPN Transistor
NFET	Field Effect Transistor
PFET	Field Effect Transistor
NMOS	Enhanced MOS Field Effect Transistor
PMOS	Enhanced MOS Field Effect Transistor
TO33	Darlington Pair

RECTIFIERS

TO18	Silicon Control Rectifier
TO39	Silicon Control Rectifier

CRYSTAL

XTAL	Crystal Oscillator
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SWITCHES

DIP-2	Two Position Switch
DIP-4	Four Position Switch
DIP-6	Six Position Switch
DIP-8	Eight Position Switch
DIP-10	Ten Position Switch

SINGLE INLINE PACKAGE

SIP6	Six Pin Package
SIP8	Eight Pin Package
SIP10	Ten Pin Package

Component List by Function

CONNECTORS

2PIN	2 Pin Board Connector
3PIN	3 Pin Board Connector
4PIN	4 Pin Board Connector
6PIN	6 Pin Board Connector
9PIN	9 Pin "D" Type Connector
15PIN	15 Pin "D" Type Connector
24PIN	24 Pin Board Connector
34PIN	34 Pin Board Connector
40PIN	40 Pin Board Connector
50PIN	50 Pin Board Connector
156X3	3 Pin Board Connector
156X6	6 Pin Board Connector
156X10	10 Pin Board Connector
PIN2A	2 Pin Board Connector
PIN3A	3 Pin Board Connector
PIN4A	4 Pin Board Connector
PIN6A	6 Pin Board Connector
PIN9A	9 Pin "D" Type Connector
PIN15A	15 Pin "D" Type Connector
PIN24A	24 Pin Board Connector
PIN25A	25 Pin Edge Connector
PIN34A	34 Pin Board Connector
PIN40A	40 Pin Board Connector
PIN50A	50 Pin Board Connector
DB25	25 Pin Edge Connector
CON40	40 Pin Edge Connector
CON50	50 Pin Edge Connector

INDUCTOR

INDUCTOR Standard Coil Inductor
FUSE

FUSE Standard Fuse

CIRCUIT BREAKER

BREAKER Standard Circuit Breaker

Component List by Function

TRANSFORMER

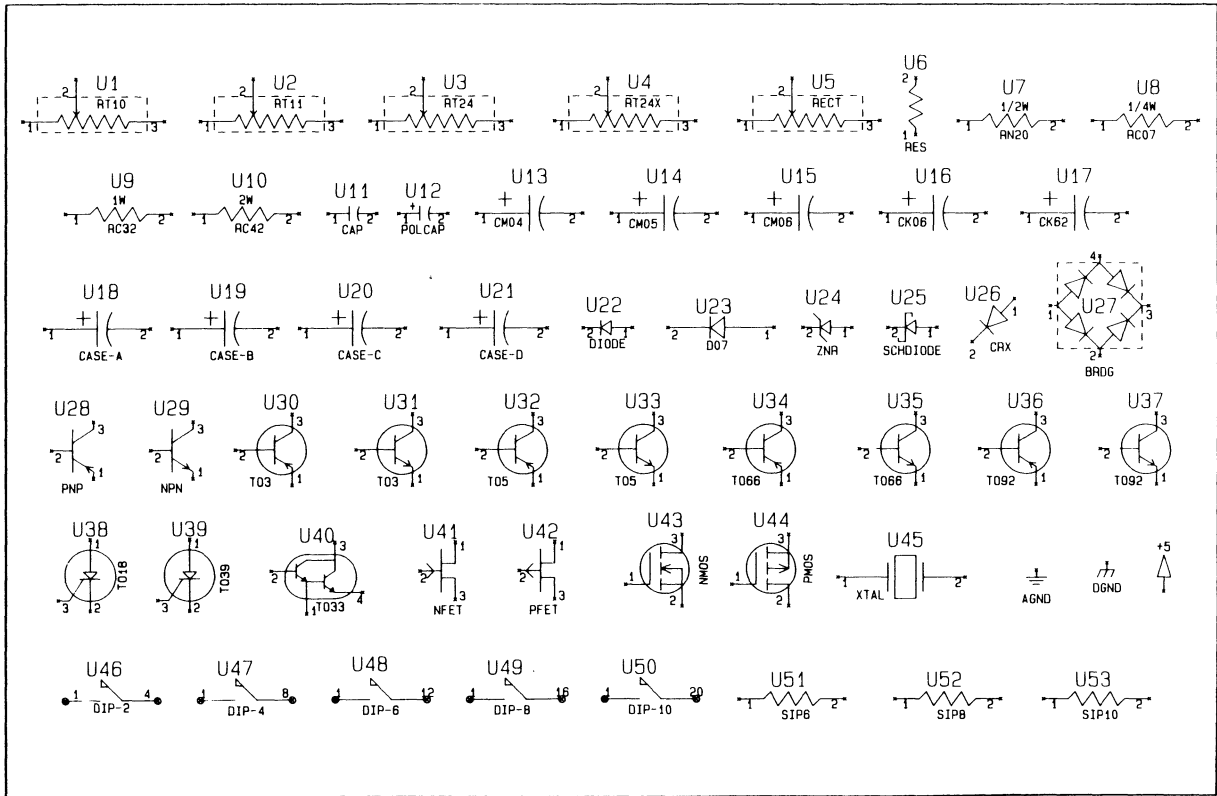
XFORMER Trigate Transformer

GROUND

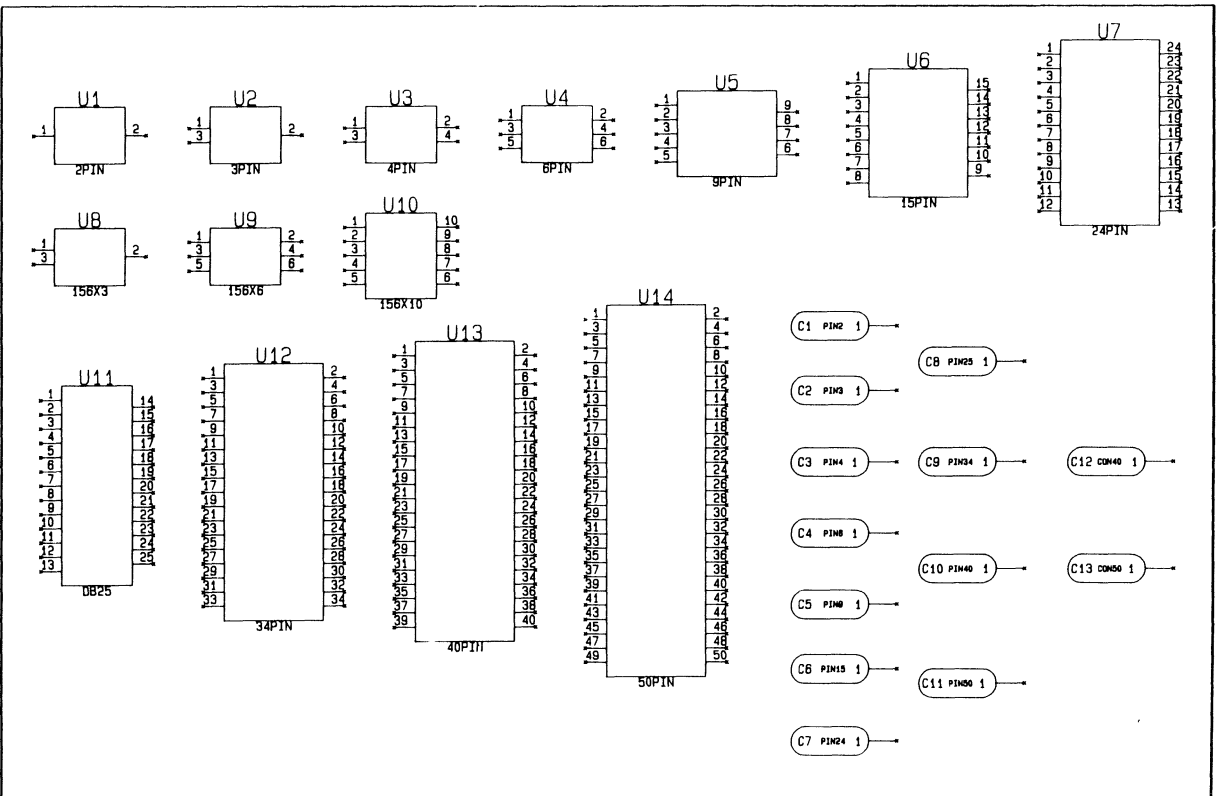
AGND Earth Ground
DGND Chassis Ground

POWER

POWER +5V Power Arrow



Component Plots



COMPONENT PIN SEQUENCES

RT11:	1	2	3
RT24:	1	2	3
RT24X:	1	2	3
RECT:	1	2	3
RES:	1	2	
RN20:	1	2	
RC07:	1	2	
RC32:	1	2	
RC42:	1	2	
CAP:	1	2	
POLCAP:	1	2	
CM04:	1	2	
CM05:	1	2	
CM06:	1	2	
CK06:	1	2	
CK62:	1	2	
CASE-A:	1	2	
CASE-B:	1	2	

Component Pin Sequences

CASE-C:	1	2		
CASE-D:	1	2		
DIODE:	C	A		
D07:	C	A		
ZNR:	C	A		
SCHDIODE:	C	A		
CRX:	A	B		
BRDG:	D	C	A	B
RT10:	1	2	3	
PNP:	C	E	B	
NPN:	C	E	B	
TO3PNP:	B	C	E	
TO3NPN:	B	C	E	
TO5PNP:	B	C	E	
TO5NPN:	B	C	E	
TO66PNP:	B	C	E	
TO66NPN:	B	C	E	
TO92PNP:	B	C	E	
TO92NPN:	B	C	E	
TO18:	G	A	C	

Component Pin Sequences

TO39:	G	A	C	
TO33:	B2	B	C	E
NFET:	C	A	B	
PFET:	C	A	B	
NMOS:	C	A	B	
PMOS:	C	A	B	
XTAL:	1	2		
DIP-2:	1	2		
DIP-4:	1	2		
DIP-6:	1	2		
DIP-8:	1	2		
DIP-10:	1	2		
SIP6:	A	B		
SIP8:	A	B		
SIP10:	A	B		
2PIN:	1	2		
3PIN:	1	3	2	
4PIN:	1	3	2	4
6PIN:	1 4	3 6	5	2

Component Pin Sequences

9PIN:	1	2	3	4
	5	6	7	8
	9			
15PIN:	1	2	3	4
	5	6	7	8
	9	10	11	12
	13	14	15	
24PIN:	1	2	3	4
	5	6	7	8
	9	10	11	12
	13	14	15	16
	17	18	19	20
	21	22	23	24
DB25:	1	2	3	4
	5	6	7	8
	9	10	11	12
	13	14	15	16
	17	18	19	20
	21	22	23	24
	25			
34PIN:	1	3	5	7
	9	11	13	15
	17	19	21	23
	25	27	29	31
	33	2	4	6
	8	10	12	14
	16	18	20	22
	24	26	28	30
	32	34		

Component Pin Sequences

TO39:	G	A	C	
TO33:	B2	B	C	E
NFET:	C	A	B	
PFET:	C	A	B	
NMOS:	C	A	B	
PMOS:	C	A	B	
XTAL:	1	2		
DIP-2:	1	2		
DIP-4:	1	2		
DIP-6:	1	2		
DIP-8:	1	2		
DIP-10:	1	2		
SIP6:	A	B		
SIP8:	A	B		
SIP10:	A	B		
2PIN:	1	2		
3PIN:	1	3	2	
4PIN:	1	3	2	4
6PIN:	1 4	3 6	5	2

Component Pin Sequences

9PIN:	1	2	3	4
	5	6	7	8
	9			
15PIN:	1	2	3	4
	5	6	7	8
	9	10	11	12
	13	14	15	
24PIN:	1	2	3	4
	5	6	7	8
	9	10	11	12
	13	14	15	16
	17	18	19	20
	21	22	23	24
DB25:	1	2	3	4
	5	6	7	8
	9	10	11	12
	13	14	15	16
	17	18	19	20
	21	22	23	24
	25			
34PIN:	1	3	5	7
	9	11	13	15
	17	19	21	23
	25	27	29	31
	33	2	4	6
	8	10	12	14
	16	18	20	22
	24	26	28	30
	32	34		

Component Pin Sequences

40PIN:	1	3	5	7
	9	11	13	15
	17	19	21	23
	25	27	29	31
	33	35	37	39
	2	4	6	8
	10	12	14	16
	18	20	22	24
	26	28	30	32
	34	36	38	40

50PIN:	1	3	5	7
	9	11	13	15
	17	19	21	23
	25	27	29	31
	33	35	37	39
	41	43	45	47
	49	2	4	6
	8	10	12	14
	16	18	20	22
	24	26	28	30
	32	34	36	38
	40	42	44	46
	48	50		

156X3:	1	3	2
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PIN2A:	IO
--------	----

PIN3A:	IO
--------	----

PIN4A:	IO
--------	----

PIN6A:	IO
--------	----

PIN9A:	IO
--------	----

PIN15A:	IO
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Component Pin Sequences

PIN24A: IO

PIN25A: IO

PIN34A: IO

PIN40A: IO

PIN50A: IO

CON40: IO

CON50: IO

156X6:	1	3	5	2
	4	6		

156X10:	1	2	3	4
	5	6	7	8
	9	10		

INDUCTOR: A B

FUSE: A B

BREAKER: A B

XFORMER: A B C D

AGND: 1

DGND: 1

POWER: 1