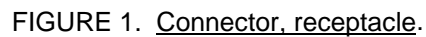
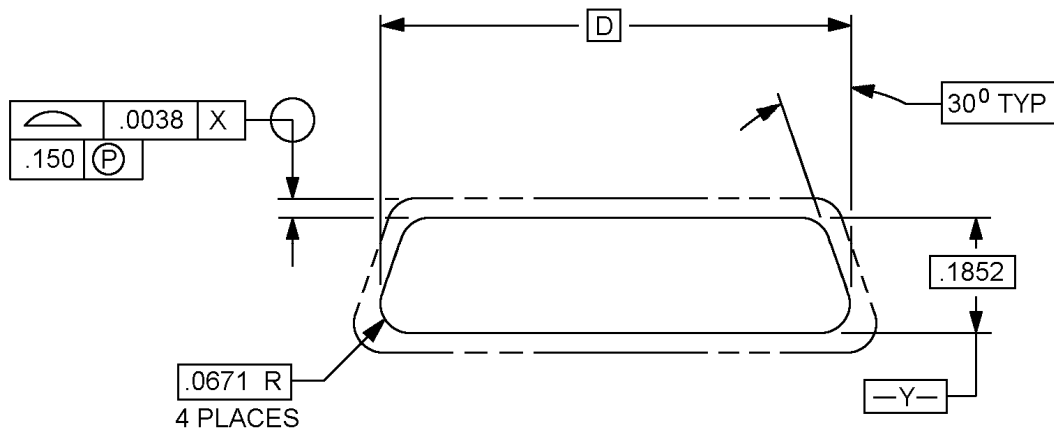


MIL-DTL-83513/31B  
18 March 2009  
SUPERSEDING  
MIL-DTL-83513/31A  
24 May 2004

CONNECTORS, ELECTRICAL, RECTANGULAR, RECEPTACLE, MICROMINIATURE,  
POLARIZED SHELL, STRAIGHT, SOCKET CONTACTS, 2 ROW, SOLDER TYPE,  
STANDARD PROFILE, 9 THROUGH 37 CONTACTS, PRINTED CIRCUIT BOARD

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-DTL-83513.





DETAIL OF INTERFACE

FIGURE 1. Connector, receptacle - Continued.

## MIL-DTL-83513/31B

Number of contacts	A Max	B ±.005 (0.13)	D
9	.785 (19.94)	.565 (14.35)	.3342 (8.489)
15	.935 (23.75)	.715 (18.16)	.4842 (12.299)
21	1.085 (27.56)	.865 (21.97)	.6342 (16.109)
25	1.185 (30.01)	.965 (24.51)	.7342 (18.649)
31	1.335 (33.91)	1.115 (28.32)	.8842 (22.459)
37	1.485 (37.72)	1.265 (32.13)	1.0342 (26.269)

## NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Unless otherwise specified, tolerances are ±.005 (0.13 mm).
4. Termination organization area to be optionally molded or filled with a potting fill material capable of passing the electrical and environmental requirements of MIL-DTL-83513. Plastic molding shall conform to type GDI-30F or type SDG-F in accordance with ASTM D5948 or GCT-30F in accordance with ASTM D5927 or MIL-M-24519 or GST-40F in accordance with ASTM D4067 or MIL-M-24519 or GLCP-30F or GLCP-50 in accordance with ASTM D5138 or MIL-M-24519.
5. Metal shell shall be of material in accordance with MIL-DTL-83513 for class M parts.
6. Jackpost (securely attached) when specified: Corrosion resistant steel in accordance with ASTM A484/A484M and ASTM A582/A582M, 300 series stainless steel, passivated in accordance with SAE-AMS-2700, type 2. Hardware will be attached in such a fashion as to not loosen during normal de-mating conditions, where as, the mating connector hardware does not exceed the following torque values: 2.5 inch pounds for #2-56 (arrangements A – G) and 4.5 inch pounds for #4-40 (arrangement H).
7. Separately molded plastic body (if used) shall conform to type GDI-30F or type SDG-F in accordance with ASTM D5948 or GCT-30F in accordance with ASTM D5927 or MIL-M-24519 or GST-40F in accordance with ASTM D4067 or MIL-M-24519 or GLCP-30F or GLCP-50 in accordance with ASTM D5138 or MIL-M-24519.
8. Wire termination pins shall conform to A-A-59551, number 24 AWG copper, except shall be tin-lead plated with a minimum of 3 percent lead.
9. Interfacial seals are included with each type receptacle connector.
10. Termination lengths available: .109 (2.77 mm), .140 (3.56 mm), or .172 (4.37 mm). The tolerance shall be ±.015 (0.38 mm) for all termination lengths.
11. Threaded insert, when specified: Corrosion resistant steel in accordance with ASTM A484/A484M and ASTM A582/A582M, 300 series stainless steel, passivated in accordance with SAE-AMS-2700, type 2.

FIGURE 1. Connector, receptacle - Continued.

MIL-DTL-83513/31B

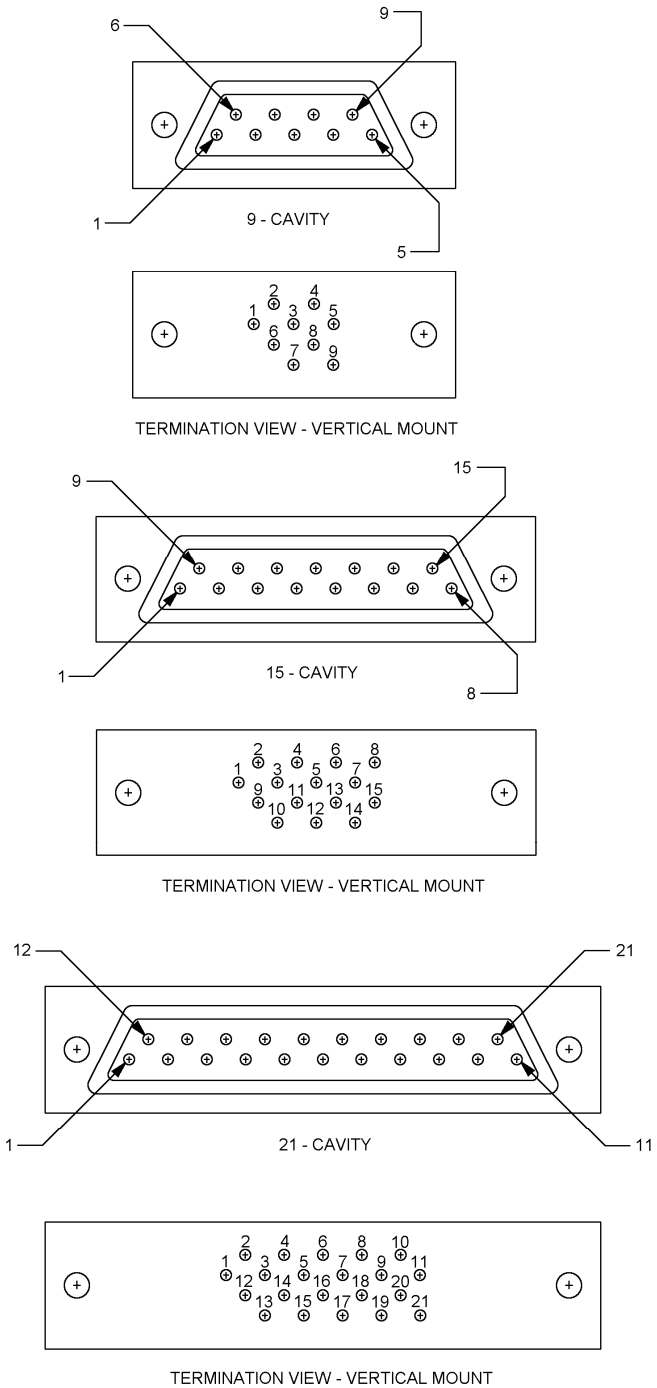
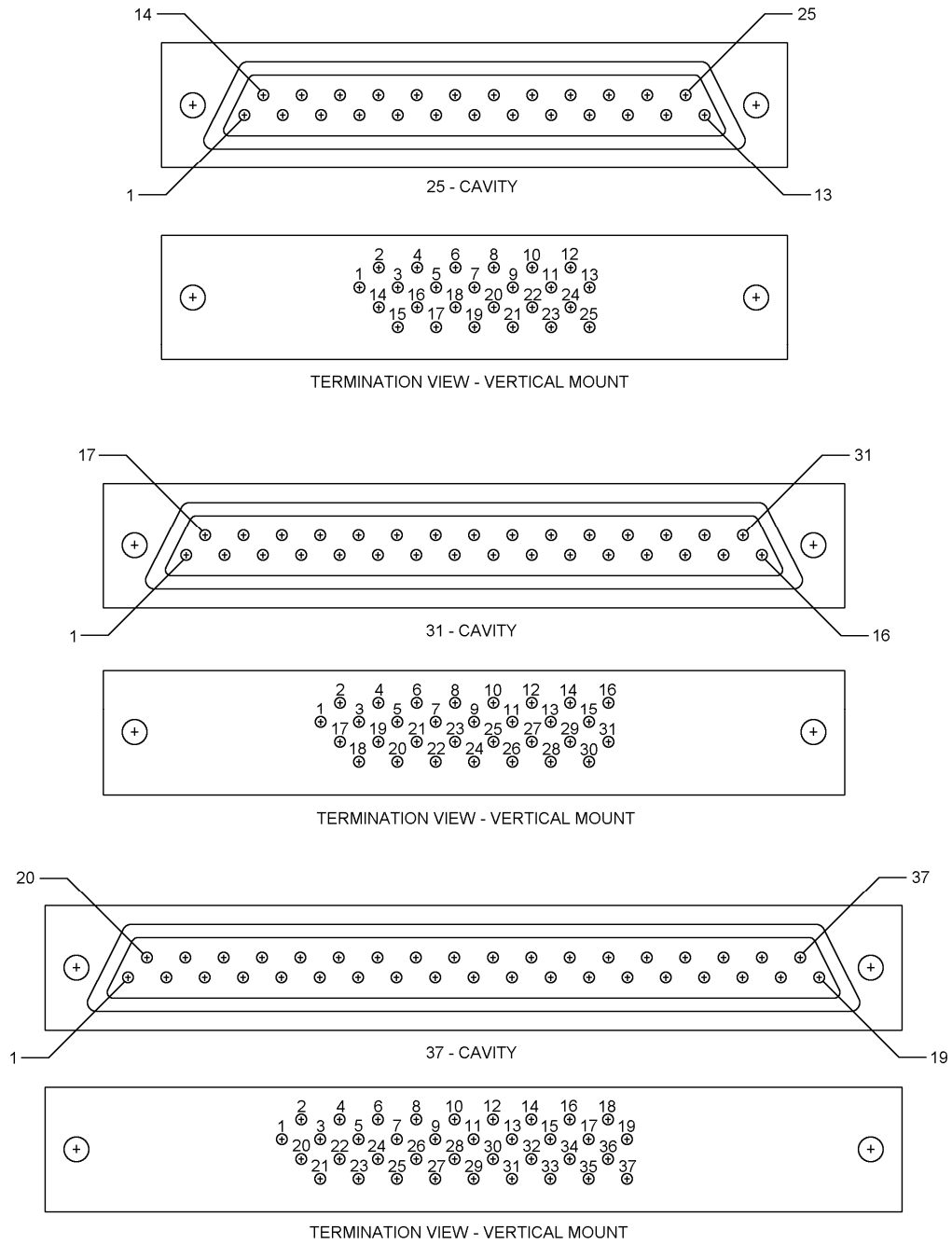


FIGURE 2. Insert arrangement.

MIL-DTL-83513/31B



NOTE: Engaging face of pin insert shown, cavity identification numbers are for reference only and do not appear on the part.

FIGURE 2. Insert arrangement - Continued.

MIL-DTL-83513/31B

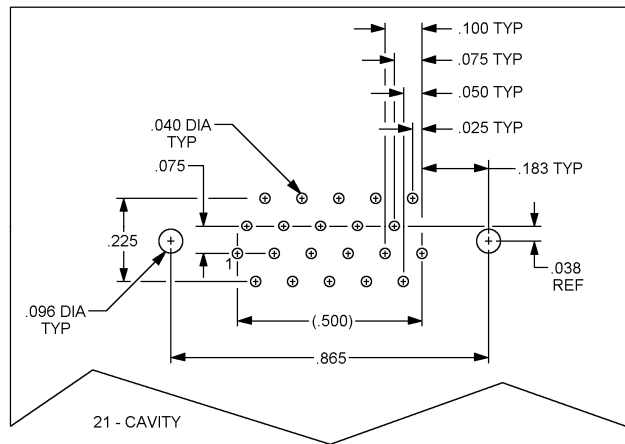
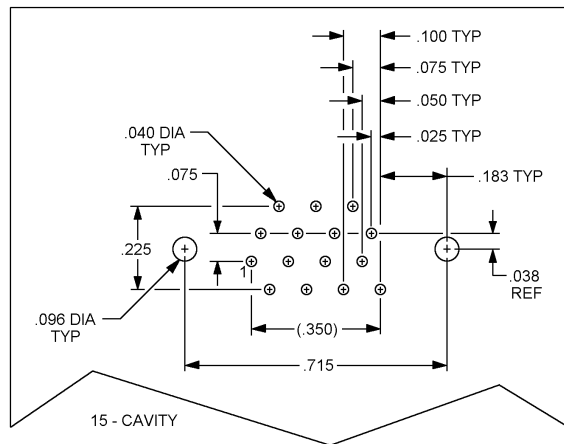
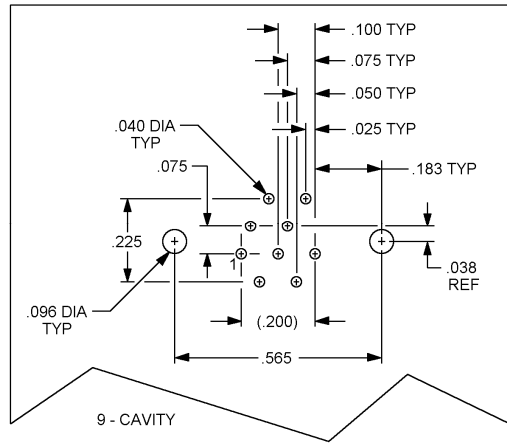


FIGURE 3. Layout arrangement.

MIL-DTL-83513/31B

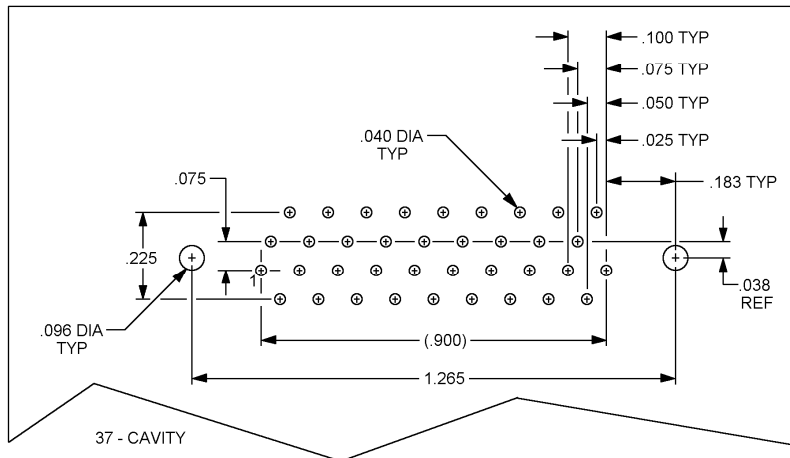
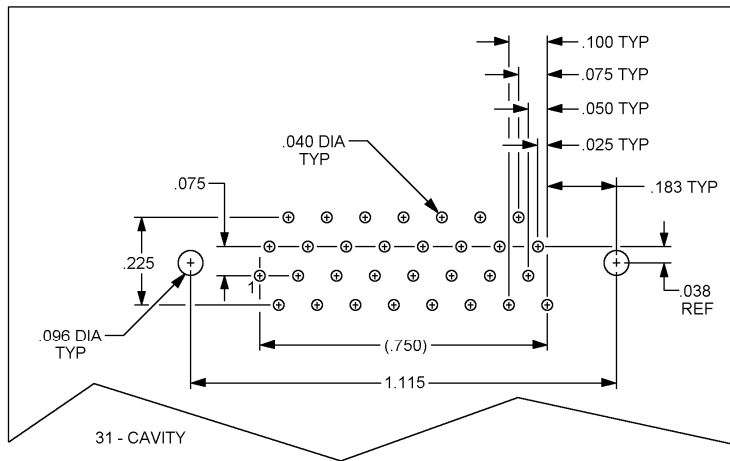
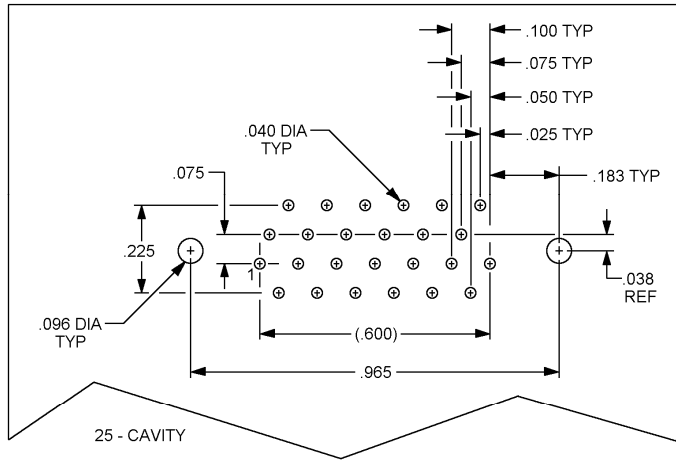


FIGURE 3. Layout arrangement - Continued.

# MIL-DTL-83513/31B

Inches	mm	Inches	mm	Inches	mm
.025	0.64	.183	4.65	.715	18.16
.038	0.97	.200	5.08	.750	19.05
.040	1.02	.225	5.72	.865	21.97
.050	1.27	.350	8.89	.900	22.86
.075	1.91	.500	12.70	.965	24.51
.096	2.44	.565	14.35	1.115	28.32
.100	2.54	.600	15.42	1.265	32.13

## NOTES:

1. Dimensions are in inches.
2. Metric equivalents are for information only.
3. Unless otherwise specified, tolerances are  $\pm .005$  (0.13 mm).
4. Patterns shown are for connector mounting side of PC board.

FIGURE 3. Layout arrangement - Continued.

## REQUIREMENTS:

Dimensions and configurations: See figures 1, 2 and 3.

Current rating, maximum: 3 amperes per contact.

### Materials:

Termination organization area: Potting fill material capable of passing the electrical and environmental requirements of MIL-DTL-83513.

Shell: The requirements for shell materials shall be in accordance with MIL-DTL-83513.

Plastic body or plastic molding: Shall conform to the requirements of GDI-30F or SDG-30F of ASTM D5948, or GPT-30F or GET-30F or GCT-30F of ASTM D5927 or MIL-M-24519 or GST-40F of ASTM D4067 or MIL-M-24519 or GLCP-30F or GLCP-50F in accordance with ASTM D5138 or MIL-M-24519.

Jackpost: Corrosion resistant steel in accordance with ASTM A484/A484M and ASTM A582/A582M, 300 series stainless steel, passivated in accordance with SAE-AMS-2700, type 2.

Wire termination pins: Wire termination pins shall be in accordance with A-A-59551, number 24 AWG copper or shall be of a single piece contact with a tail of suitable conductive copper based alloys, except shall be tin-lead plated with a minimum of 3 percent lead.

Mating connector: Shall be in accordance with MIL-DTL-83513/1 and MIL-DTL-83513/3.

Plating of termination leads: Solder dipping of termination leads will be accomplished in SN60 PB40 or SN63 PB37 in accordance with J-STD-006.



# MIL-DTL-83513/31B

Part or Identifying Number (PIN): The PIN shall consist of the letter M, the basic number of the specification sheet, a letter from the insert, a numerical code for the termination length, and a letter code for the shell finish and hardware column.

<u>M83513/31-</u>	<u>A</u>	<u>01</u>	<u>C</u>	<u>P</u>
Specification sheet number	Insert arrangements (see figure 2)	Termination length	Shell finish (interface critical)	Hardware
	A = 09 B = 15 C = 21 D = 25 E = 31 F = 37	01 = .109 02 = .140 03 = .172	A = Pure electrodeposited aluminum C = Cadmium K = Zinc nickel N = electroless nickel (space applications only) P = Passivated Stainless Steel T = Nickel fluorocarbon polymer	N = No hardware or threaded insert P = jackpost attach T = threaded insert W = jackpost and threaded insert

Changes from previous issue: The margins of this specification are marked with vertical lines to indicate where changes from previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

Referenced documents. In addition to MIL-DTL-83513, this document references the following:

MIL-DTL-83513/1	ASTM A484/A484M	A-A-59551
MIL-DTL-83513/3	ASTM A582/A582M	J-STD-006
MIL-M-24519	ASTM D4067	SAE-AMS-2700
	ASTM D5138	
	ASTM D5927	
	ASTM D5948	

MIL-DTL-83513/31B

CONCLUDING MATERIAL

Custodians:

Army - CR  
Navy - EC  
Air Force - 85  
NASA - NA  
DLA - CC

Preparing activity:

DLA - CC

(Project: 5935-2007-079)

Review activities:

Army - AT, CR4, MI  
Navy - AS, CG, MC, SH  
Air Force - 99

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <http://assist.daps.dla.mil>.