INCH-POUND

MIL-DTL-83513/4J
w/AMENDMENT 2
6 July 2016
SUPERSEDING
MIL-DTL-83513/4J
w/AMENDMENT 1
4 September 2013

DETAIL SPECIFICATION SHEET

CONNECTORS, ELECTRICAL, RECTANGULAR, RECEPTACLE, MICROMINIATURE, POLARIZED SHELL, SOCKET CONTACTS, CLASS M, CRIMP TYPE

This specification is approved for use by all Departments and Agencies of the Department of Defense.

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

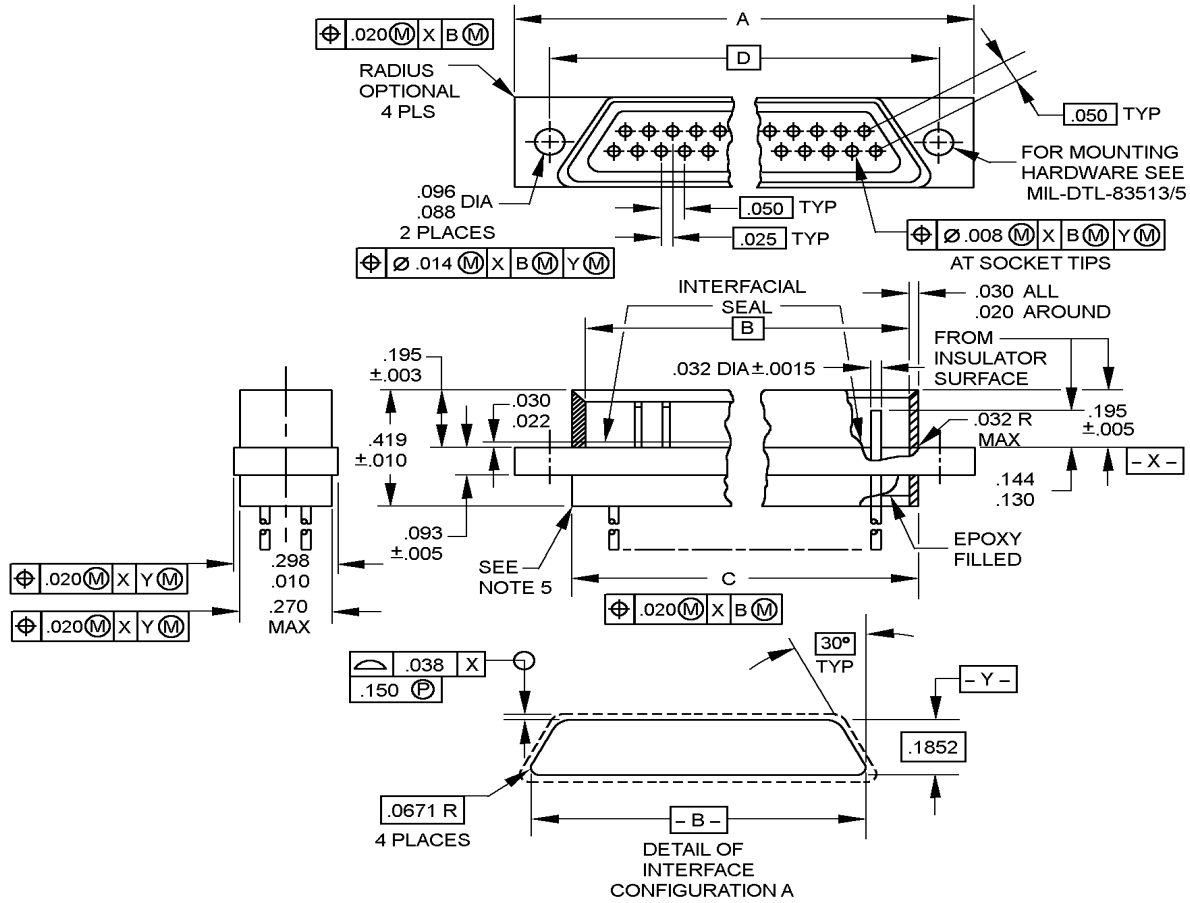


FIGURE 1. Connector, plug .050 spacing.

AMSC N/A

FSC 5935

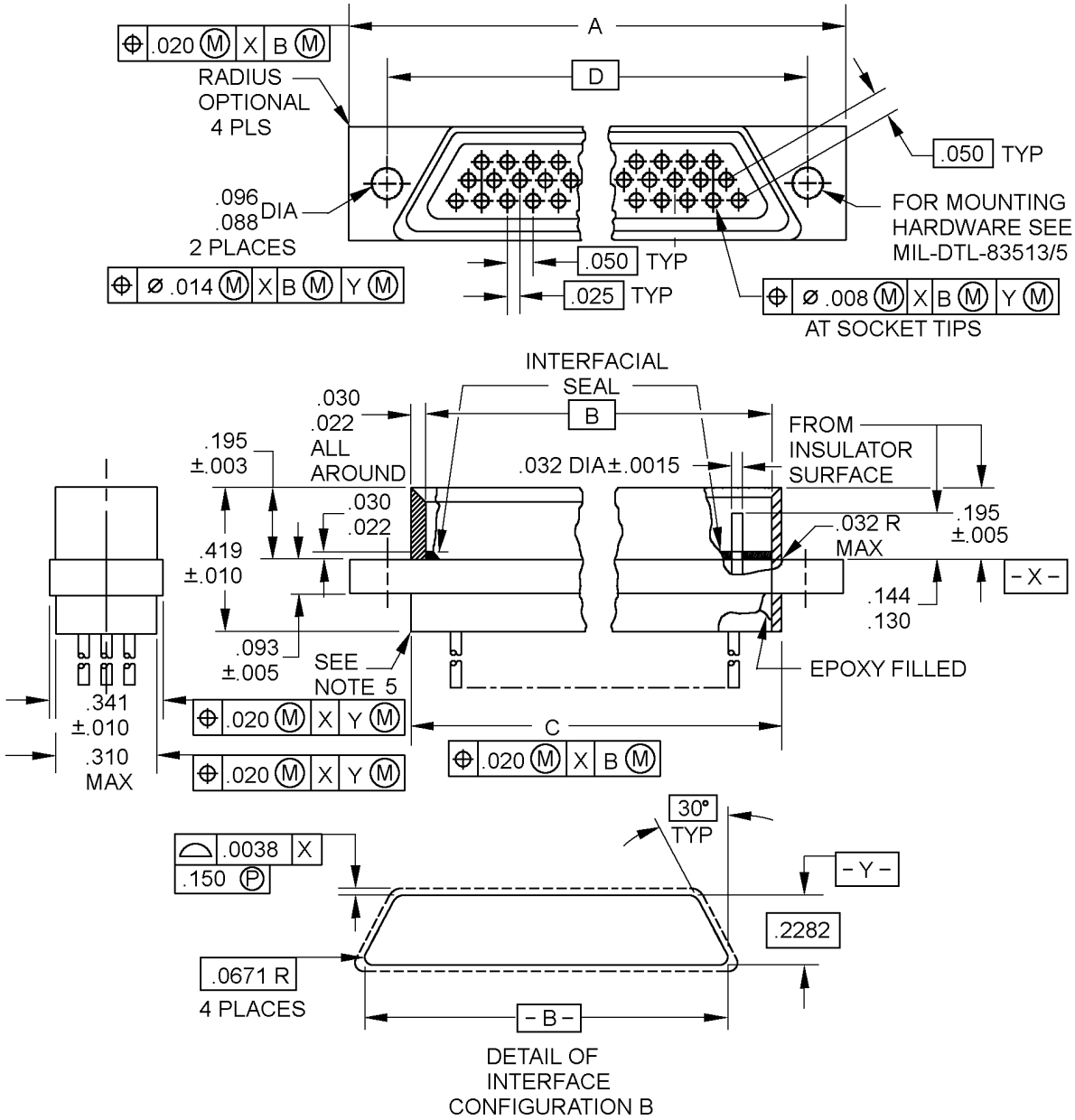


FIGURE 1. Connector, receptacle, .050 spacing - Continued.

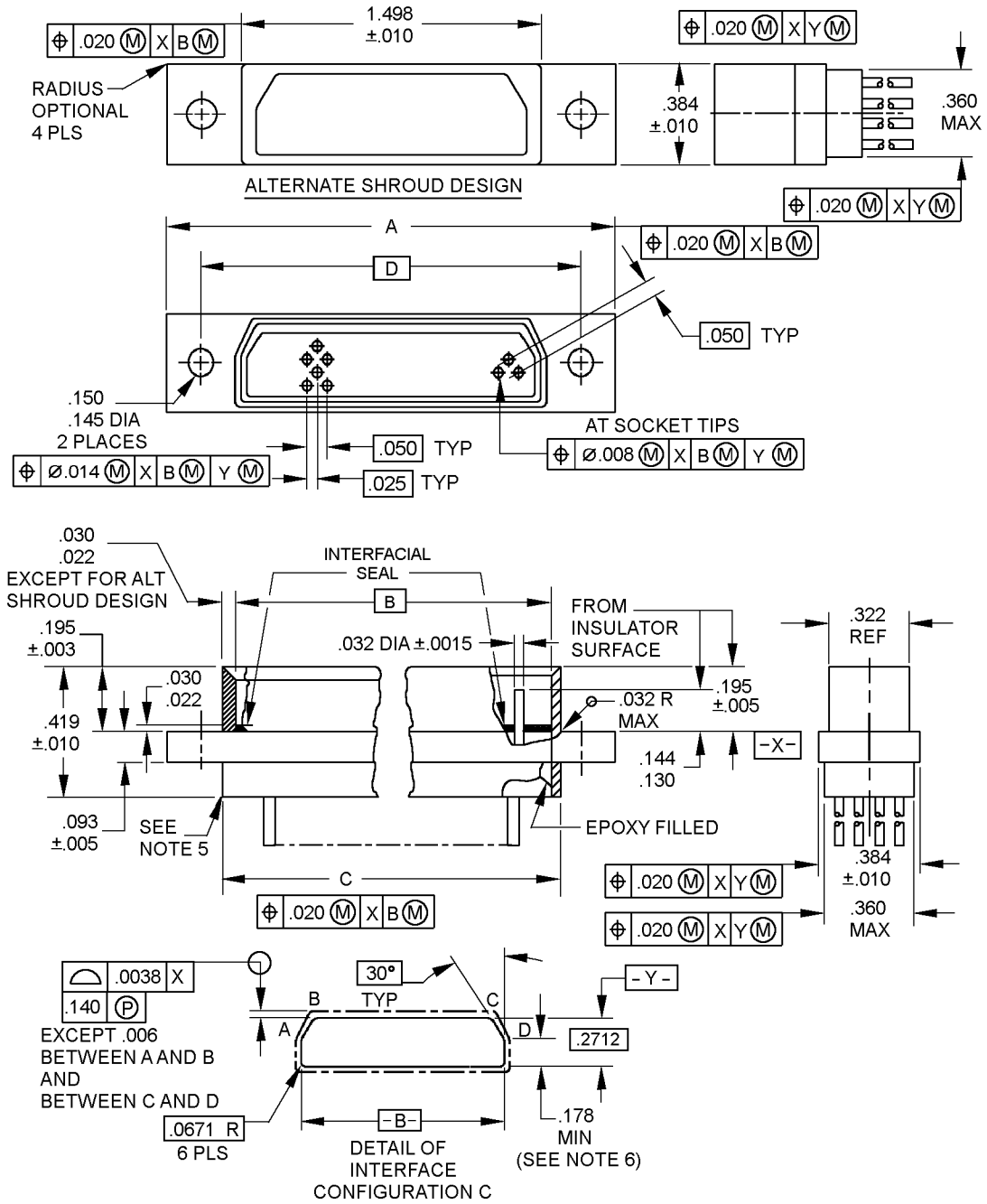


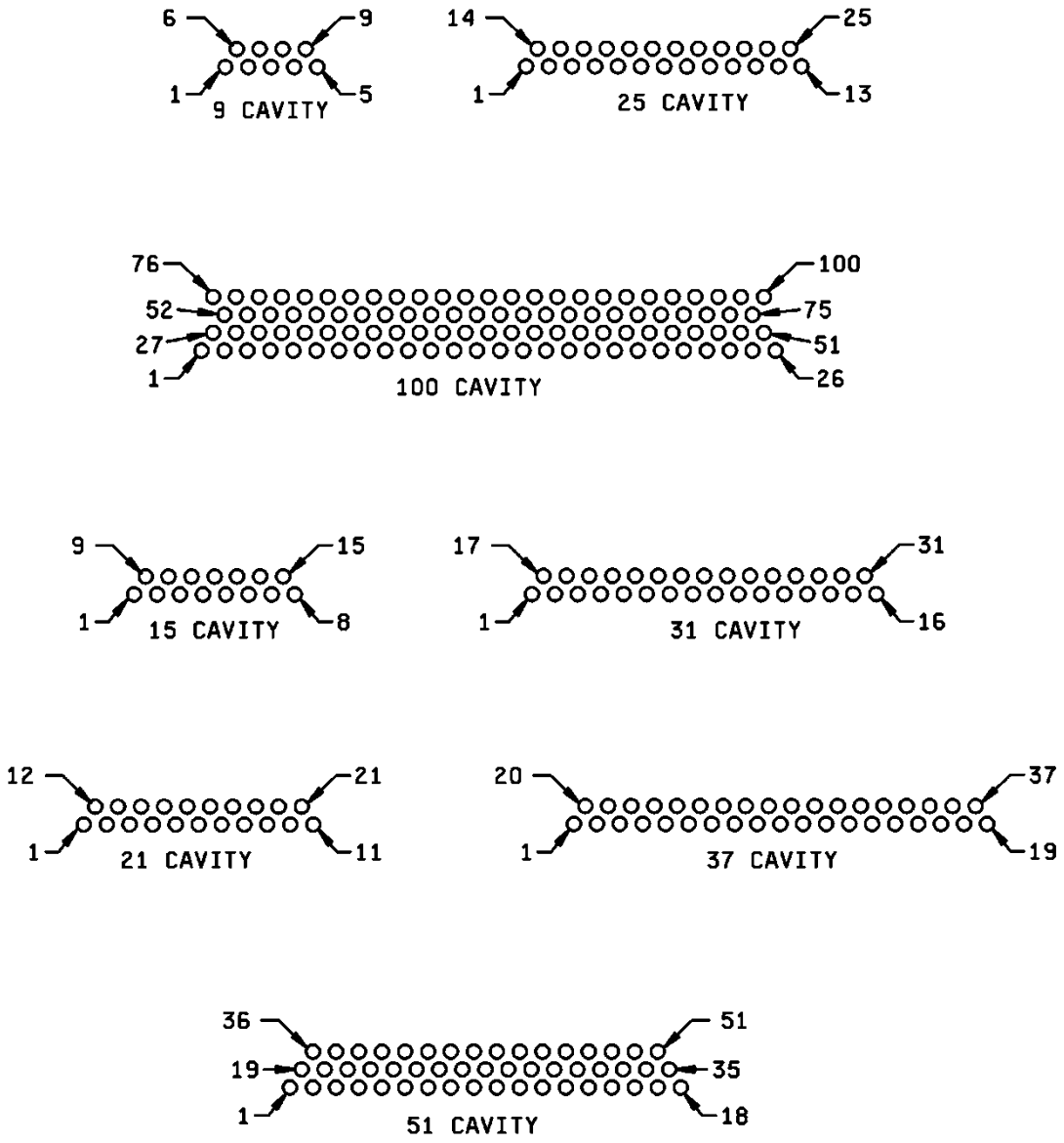
FIGURE 1. Connector, receptacle, .050 spacing - Continued.

Number of cavities	A .010 (.25)	B BSC	C +.010 -.018 +(.25) -(.46)	D BSC	Configuration letter
9	.775 (19.69)	.3342 (8.489)	.390 (9.91)	.565 (14.35)	A
15	.925 (23.50)	.4842 (12.299)	.540 (13.72)	.715 (18.16)	A
21	1.075 (27.31)	.6342 (16.109)	.690 (17.53)	.865 (21.97)	A
25	1.175 (29.85)	.7342 (18.649)	.790 (20.07)	.965 (24.51)	A
31	1.325 (33.66)	.8842 (22.459)	.940 (23.88)	1.115 (28.32)	A
37	1.475 (37.47)	1.0342 (26.269)	1.090 (27.69)	1.265 (32.13)	A
51	1.425 (36.20)	.9842 (25.00)	1.040 (26.42)	1.215 (30.86)	B
100	2.160 (54.86)	1.3842 (35.159)	1.432 (36.37)	1.800 (45.72)	C

Inches	mm	Inches	mm
.002	0.05	.096	2.44
.003	0.08	.100	2.54
.0035	0.089	.1141	2.898
.0038	0.097	.117	2.97
.004	0.10	.123	3.12
.005	0.13	.130	3.30
.006	0.15	.144	3.66
.007	0.18	.145	3.68
.008	0.20	.150	3.81
.010	0.25	.180	4.57
.014	0.36	.1852	4.704
.018	0.46	.189	4.80
.020	0.51	.193	4.90
.022	0.56	.195	4.95
.023	0.58	.200	5.08
.025	0.64	.2282	5.796
.030	0.76	.232	5.89
.032	0.81	.239	6.07
.033	0.84	.270	6.86
.045	1.14	.2712	6.888
.050	1.27	.275	6.99
.067	1.702	.281	7.14
.0671	1.704	.298	7.57
.069	1.75	.310	7.87
.070	1.78	.322	8.18
.088	2.24	.341	8.66
.090	2.29	.360	9.14
.093	2.36	.384	9.75
.094	2.39	.419	10.64
.095	2.41	1.438	36.53

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. Metric equivalents are in parentheses or columns.
5 Point from which the lead length is measured.
6. Dimension line at point D locates the point of intersection of the two adjacent side of the receptacle interface.
7. 26 AWG wire is the maximum wire size that can be used in the solder cup.

FIGURE 1. Connector, receptacle, .050 spacing - Continued.



NOTES:
1. Engaging face of socket insert shown.
2. Cavity identification numbers are for reference only and do not appear on part.

FIGURE 2. Insert arrangement.

REQUIREMENTS:

Dimensions and configurations: See figure 1. This specification sheet describes the pin side of a rectangular metal shell connector. This connector uses reverse gender contact, i.e., the live pin recessed in the insulator with the static socket protruding from a shrouded interface.

Material and finish:

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

Interfacial seal: Silicone rubber or fluorosilicone rubber or blend thereof.

Contact identification: See figure 2 for contact layout identification.

Contact connection: The pin contact (being recessed in the insulator) is normally connected to the live side of the circuit.

Current rating, maximum: 3 amperes per contact.

Mounting and mating hardware: Mounting hardware is to be ordered separately. Insert arrangements A through G, are in accordance with MIL-DTL-83513/5, configurations A and B. Insert arrangement H, is in accordance with MIL-DTL-83513/5, configuration C.

Mating plug: Mating plug in accordance with MIL-DTL-83513/1 or MIL-DTL-83513/3.

Part or Identifying Number (PIN): Consists of the letter M, the basic number of the specification sheet, a letter from the insert column and the shell finish.

M83513/04 - A 01 C

M83513/04: Specification sheet number

A: Insert arrangement (see figure 2)

- A = 9
- B = 15
- C = 21
- D = 25
- E = 31
- F = 37
- G = 51
- H = 100

01: Wire type 1/

C: Shell finish (Interface critical)

- A = Pure electrodeposited aluminum
- C = Cadmium
- K = Zinc nickel
- N = electroless nickel (space applications only)
- P = Passivated stainless steel
- T = Nickel fluorocarbon polymer

Wire type 1/	Wire specification	Wire length (inches)	Notes
01 =	M22759/11-26-9	18	2/, 3/
02 =	M22759/11-26-9	36	2/, 3/
03 =	M22759/11-26-( )	18	3/, 4/, 5/
04 =	M22759/11-26-( )	36	3/, 4/, 5/
05 =	A-A-59551, type S, 25 AWG, gold plated 10 micro inches	0.5	6/, 7/
06 =	A-A-59551, type S, 25 AWG, gold plated 10 micro inches	1.0	6/, 7/
07 =	A-A-59551, type S, 25 AWG, tin plated 100 micro inches	0.5	6/, 7/, 9/
08 =	A-A-59551, type S, 25 AWG, tin plated 100 micro inches	1.0	6/, 7/, 9/
09 =	M22759/33-26-9	18	3/, 8/
10 =	M22759/33-26-9	36	3/, 8/
11 =	M22759/33-26-( )	18	3/, 4/, 5/, 8/
12 =	M22759/33-26-( )	36	3/, 4/, 5/, 8/
13 =	M22759/11-26-9	72	2/, 3/
14 =	M22759/11-26-( )	72	3/, 4/, 5/
15 =	M22759/33-26-9	72	3/, 8/
16 =	M22759/33-26-( )	72	3/, 4/, 5/, 8/
17 =	04035-26A-9	18	2/, 3/
18 =	04035-26A-9	36	2/, 3/
19 =	04035-26A-9	72	2/, 3/
20 =	04035-26A-( )	18	3/, 4/, 5/
21 =	04035-26A-( )	36	3/, 4/, 5/
22 =	04035-26A-( )	72	3/, 4/, 5/

See notes at end of wire type.

PIN – Continued.

01

Wire type

Wire type 1/	Wire specification	Wire length (inches)	Notes
23 =	M22759/47-26-9	18	2/, 3/
24 =	M22759/47-26-9	36	2/, 3/
25 =	M22759/47-26-9	72	2/, 3/
26 =	M22759/47-26-( )	18	3/, 4/, 5/
27 =	M22759/47-26-( )	36	3/, 4/, 5/
28 =	M22759/47-26-( )	72	3/, 4/, 5/
29 =	M22759/48-26-9	18	2/, 3/
30 =	M22759/48-26-9	36	2/, 3/
31 =	M22759/48-26-9	72	2/, 3/
32 =	M22759/48-26-( )	18	3/, 4/, 5/
33 =	M22759/48-26-( )	36	3/, 4/, 5/
34 =	M22759/48-26-( )	72	3/, 4/, 5/
35 =	M22759/49-26-9	18	2/, 3/
36 =	M22759/49-26-9	36	2/, 3/
37 =	M22759/49-26-9	72	2/, 3/
38 =	M22759/49-26-( )	18	3/, 4/, 5/
39 =	M22759/49-26-( )	36	3/, 4/, 5/
40 =	M22759/49-26-( )	72	3/, 4/, 5/
41 =	M22759/50-26-9	18	2/, 3/
42 =	M22759/50-26-9	36	2/, 3/
43 =	M22759/50-26-9	72	2/, 3/
44 =	M22759/50-26-( )	18	3/, 4/, 5/
45 =	M22759/50-26-( )	36	3/, 4/, 5/
46 =	M22759/50-26-( )	72	3/, 4/, 5/

1/ These connectors have leads attached of which wire type, wire size, wire color, and lead length are specified in PIN.
2/ For connectors with shell finish N intended for space applications, wire shall be M22759/47-26-9 or M22759/33-26-9.
3/ Lead length tolerance +1.0, -0.0 inch.
4/ Color coding in accordance with MIL-STD-681, system I, except the appropriate color code shall be the individual contact cavity number minus 1 for contact positions 1 through 10 only, 11 through 20, etc. For example:

Pin number	Identification
4	3
9	8
21	0
31	0
77	6
100	9

5/ For connectors with shell finish N intended for space applications, wire shall be M22759/47-26-( ) or M22759/33-26-( ).

6/ Lead length tolerance +0.2, -0.0 inch.
7/ Contact and wire may be a single piece design.
8/ Corrosion has been experienced on M83513 connectors that are prewired with SAE-AS22759/33 and stored in a sealed environment. CAUTION SHOULD BE EXCERCISED WHEN USING THIS WIRE.
9/ Pure tin. The use of pure tin is prohibited. Tin content used in connector materials shall not exceed 97 percent, and an alloy material shall be chosen to inhibit the growth of tin whiskers.

Amendment notations. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. 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.

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

MIL-DTL-83513/1
MIL-DTL-83513/3
MIL-DTL-83513/5
MIL-STD-681
A-A-59551
SAE-AS22759/33

CONCLUDING MATERIAL

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

Review activities:
Army - AT, MI
Navy - AS, CG, MC, SH
Air Force – 99

Preparing activity:
DLA - CC

(Project: 5935-2016-095)

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 https://assist.dla.mil/.