INCH-POUND

MIL-DTL-55302/173B
13 September 2002
SUPERSEDING
MIL-C-55302/173A
26 December 1989

DETAIL SPECIFICATION SHEET

CONNECTORS, PRINTED CIRCUIT SUBASSEMBLY AND ACCESSORIES: 2 ROW, PIN ASSEMBLIES, 20 THROUGH 150 CONTACT POSITIONS, FOR PRINTED WIRING BOARDS (.100 SPACING)

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

The requirements for acquiring the product described herein shall consist of this specification and MIL-DTL-55302.

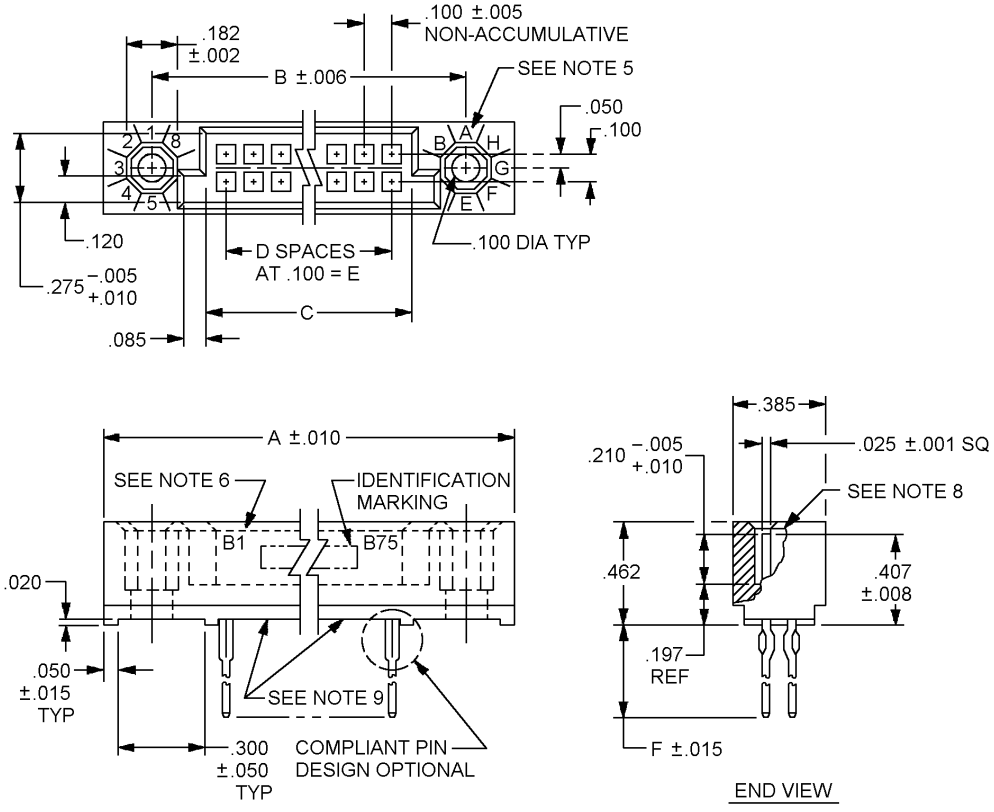
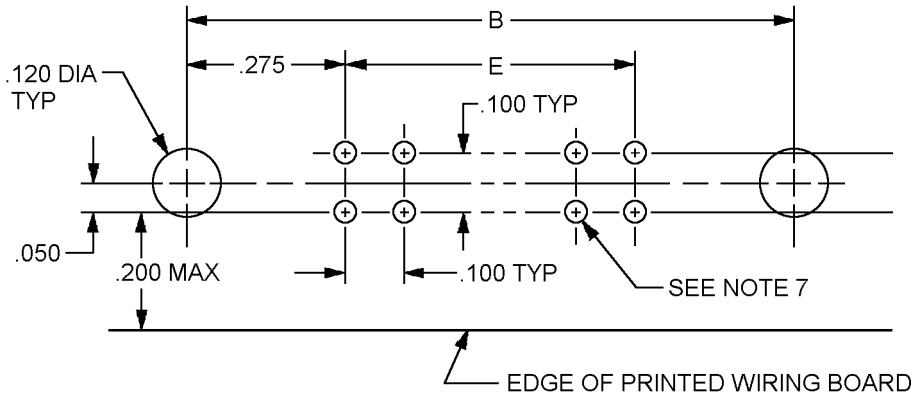


FIGURE 1. Connectors, pin assemblies .100 inch (2.54 mm) spacing, 20 through 150 contacts.



Recommended circuit layout

F ± .015 (0.38 mm)		Type	Type of termination
Inches	mm		
.733	18.62	I	Compliant pin (wrappost)
.533	13.54	II	
.250	6.35	IV	
.190	4.83	VI	Solder post (see note 10)

Inches	mm	Inches	mm
.001	0.03	.100	2.54
.002	0.05	.120	3.05
.005	0.13	.182	4.62
.006	0.15	.197	5.00
.008	0.20	.210	5.33
.010	0.25	.275	6.98
.015	0.38	.300	7.62
.020	0.51	.385	9.78
.025	0.64	.407	10.34
.050	1.27	.462	11.73
.085	2.16		

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is ± .005 inch (0.13 mm) on decimals and ± 2° on angles.
4. These connectors mate with connectors specified in MIL-DTL-55302/174.
5. Location indicators embossed on surface.
6. Numbers and indicating end cavities, letters indicating row nearest to polarizing feature, and markings every ten positions stamped on this surface.
7. Holes for solder type shall be .042 - .050 inch (1.07 – 1.27 mm). Holes for compliant pin shall be manufactured as follows: .0453 ± .0010 inch (1.151 ± 0.025 mm) drilled hole (1.15 mm drill) .001 - .003 inch (0.03 – 0.08 mm) thick copper on wall, .0003 inch (0.008 mm) minimum tin lead plating, finished hole diameter .037 - .043 inch (0.94 – 1.09 mm) after plating, .036 - .043 inch (0.91 – 1.09 mm) after reflow, copper hardness (knoop) 150 maximum.
8. Chamfers shall be .015 inch (0.38 mm) minimum at a 45° angle ± 5°.
9. There shall be a minimum of two standoffs per inch of connector length for the balance of the part. Standoffs shall not compromise the terminating area washout feature.
10. Solder post shall be a .036-inch (0.91 mm) maximum diameter or .036 inch (0.91 mm) maximum across the diagonal.

FIGURE 1. Connectors, pin assemblies .100 inch (2.54 mm) spacing, 20 through 150 contacts – Continued.

TABLE I. Dash number, number of contacts, contact type, and dimensions. 1/

Dash number	No. of contacts	Contact type	A	B	C	D	E	Contact ident. no.
01 02 04 06	20	I II IV VI	1.750 (44.45)	1.450 (36.83)	1.050 (26.67)	9	.900 (22.86)	1-10
10 11 13 15	30	I II IV VI	2.250 (57.15)	1.950 (49.53)	1.550 (39.37)	14	1.400 (35.56)	1-15
19 20 22 24	40	I II IV VI	2.750 (69.85)	2.450 (62.23)	2.050 (52.07)	19	1.900 (48.26)	1-20
28 29 31 33	50	I II IV VI	3.250 (82.55)	2.950 (74.93)	2.550 (64.77)	24	2.400 (60.96)	1-25
37 38 40 42	56	I II IV VI	3.550 (90.17)	3.250 (82.55)	2.850 (72.39)	27	2.700 (68.58)	1-28
46 47 49 51	60	I II IV VI	3.750 (95.25)	3.450 (87.63)	3.050 (77.47)	29	2.900 (73.66)	1-30
64 65 67 69	80	I II IV VI	4.750 (120.65)	4.450 (113.03)	4.050 (102.87)	39	3.900 (99.06)	1-40
82 83 85 87	100	I II IV VI	5.750 (146.05)	5.450 (138.43)	5.050 (128.27)	49	4.900 (124.46)	1-50
127 128 130 132	134	I II IV VI	7.450 (189.23)	7.150 (181.61)	6.750 (171.45)	66	6.600 (167.64)	1-67
145 146 148 150	150	I II IV VI	8.250 (209.55)	7.950 (201.93)	7.550 (191.77)	74	7.400 (187.96)	1-75

1/ Deleted dash numbers in the series 01through 153 are canceled with no replacement.

TABLE II. Contact plating requirements. 1/

Type	Finish requirement
A	Overall contact finish: Shall be gold in accordance with MIL-DTL-55302.
B	Localized contact finish. Contact engagement area, .170 inch minimum length, shall be gold over nickel in accordance with MIL-DTL-55302. Compliant pin area (contact type 1, .748 inch minimum length, type II, .548 minimum length; type IV, .265 inch minimum length) shall be tin-lead over nickel in accordance with MIL-DTL-55302. Solder post area contact type VI, .205 minimum length, shall be tin-lead over nickel in accordance with MIL-DTL-55302.

1/ Type C finish is deleted and superseded by type A or B.

REQUIREMENTS:

Design and construction:

Dimensions and configurations: See figure 1 and table I.

Materials: Shall be in accordance with MIL-DTL-55302.

Plating: See table II.

Current rating: 3.0 amperes maximum per contact, 2.25 amperes continuous per contact at room ambient with no more than two adjacent contacts carrying this current.

Keying (see MIL-DTL-55302/31):

Two keys, Part or Identifying Number (PIN) M55302/31-04, and two .086-56 UNC-2A mounting screws are recommended. Keys and screws shall be ordered separately.

Jackscrews (see MIL-DTL-55302/182):

Use M55302/182-11, -12, -13, -14, -15, or –16. Jackscrews are purchased separately.

Mating and unmating: The mating force in pounds shall be the number of contacts multiplied by .250; the withdrawal force in pounds shall be a minimum of .025 times the number of contacts and shall not exceed the measured insertion force.

Contact resistance: No individual contact pair shall have a resistance exceeding .015 ohm initial and .020 after testing.

Contact retention: 3 pounds, minimum.

Dielectric withstanding voltage:

Sea level: 900 volts rms.

70,000 feet: 200 volts rms.

2 milliamperes maximum leakage current.

PIN: M55302/173 (and dash number from table I and type from table II).

TABLE III. Group qualification.

Qualification of any of the following connectors 1/, 2/	Qualifies the following connectors	Retains qualification on the following
M55302/173-*** M55302/175-***	M55302/173-*** M55302/175-***	M55302/173-*** M55302/175-*** M55302/176-*** M55302/178-*** M55302/179-*** M55302/181-***
M55302/176-*** M55302/178-***	M55302/173-*** M55302/175-*** M55302/176-*** M55302/178-***	
M55302/179-*** M55302/181-***	M55302/173-*** M55302/175-*** M55302/176-*** M55302/178-*** M55302/179-*** M55302/181-***	

1/ For initial qualification, connectors with the largest number of contact positions from the left hand column shall be used to obtain qualification for parts in corresponding center column.
2/ For qualification retention, data may be supplied on any two parts from the left hand column in order to retain qualification for the parts listed in the right hand column.

CONCLUDING MATERIAL

Custodians:
Army – CR
Navy - EC
Air Force - 11
DLA – CC

Preparing activity:
DLA - CC

(Project 5935-4459)

Review activities:
Army – AR, AT, AV, CR4, MI
Navy – AS, MC
Air Force - 19, 99