

DETAIL SPECIFICATION SHEET

CONNECTORS, ELECTRICAL, RECTANGULAR,
NANOMINIATURE, SINGLE ROW, RECEPTACLE, POLARIZED SHELL,
SOCKET CONTACTS, HORIZONTAL PCB THROUGH-HOLE TYPE

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

The requirement for acquiring the product described herein shall consist of this specification sheet and MIL-DTL-32139.

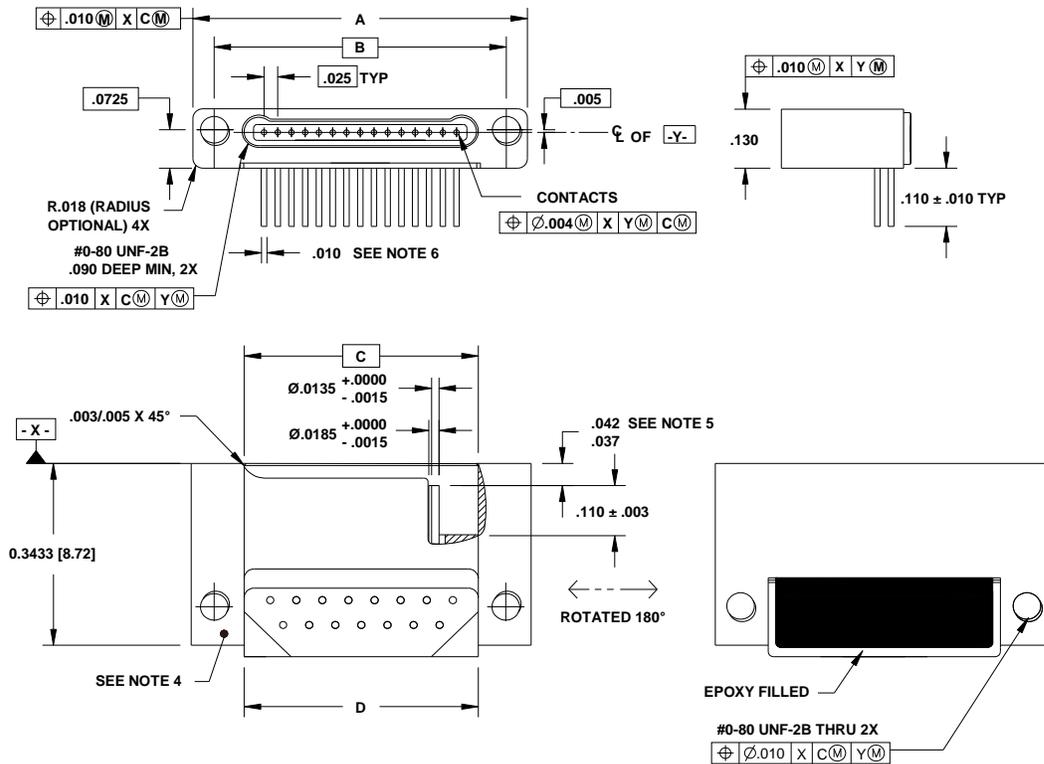


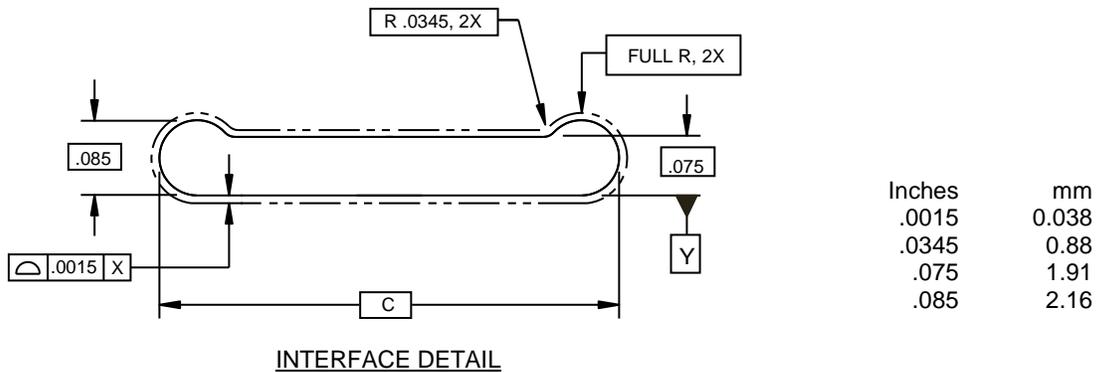
FIGURE 1. Nano connector dimensions and configurations.

Insert arrangement	A	B BSC	C BSC	D MAX	Inches	mm	Inches	mm
					.0015	0.038	.037	0.94
9	.500 (12.70)	.395 (10.03)	.285 (7.24)	.295 (7.49)	.003	0.08	.042	1.07
					.004	0.10	.090	2.29
					.005	0.13	.0725	1.842
15	.650 (16.51)	.545 (13.84)	.435 (11.05)	.445 (11.30)	.010	0.25	.110	2.80
					.0135	0.34	.130	3.30
21	.800 (20.32)	.695 (17.65)	.585 (14.86)	.595 (15.11)	.018	0.46	.365	9.27
					.0185	0.47		
25	.900 (22.86)	.795 (20.19)	.685 (17.40)	.695 (17.65)	.025	0.63		
31	1.050 (26.67)	.945 (24.00)	.835 (21.21)	.845 (21.46)				
37	1.200 (30.48)	1.095 (27.81)	.985 (25.02)	.995 (25.27)				
51	1.550 (39.37)	1.445 (36.70)	1.335 (33.91)	1.345 (34.16)				

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Unless otherwise specified tolerances are $\pm .005$ inch (0.13 mm) angular tolerance $\pm 2^\circ$.
4. Surface from which the lead length is measured.
5. Shell shall be flush to insulator within $\pm .004$ inch (0.10 mm).
6. Tail finish is tin/lead or gold

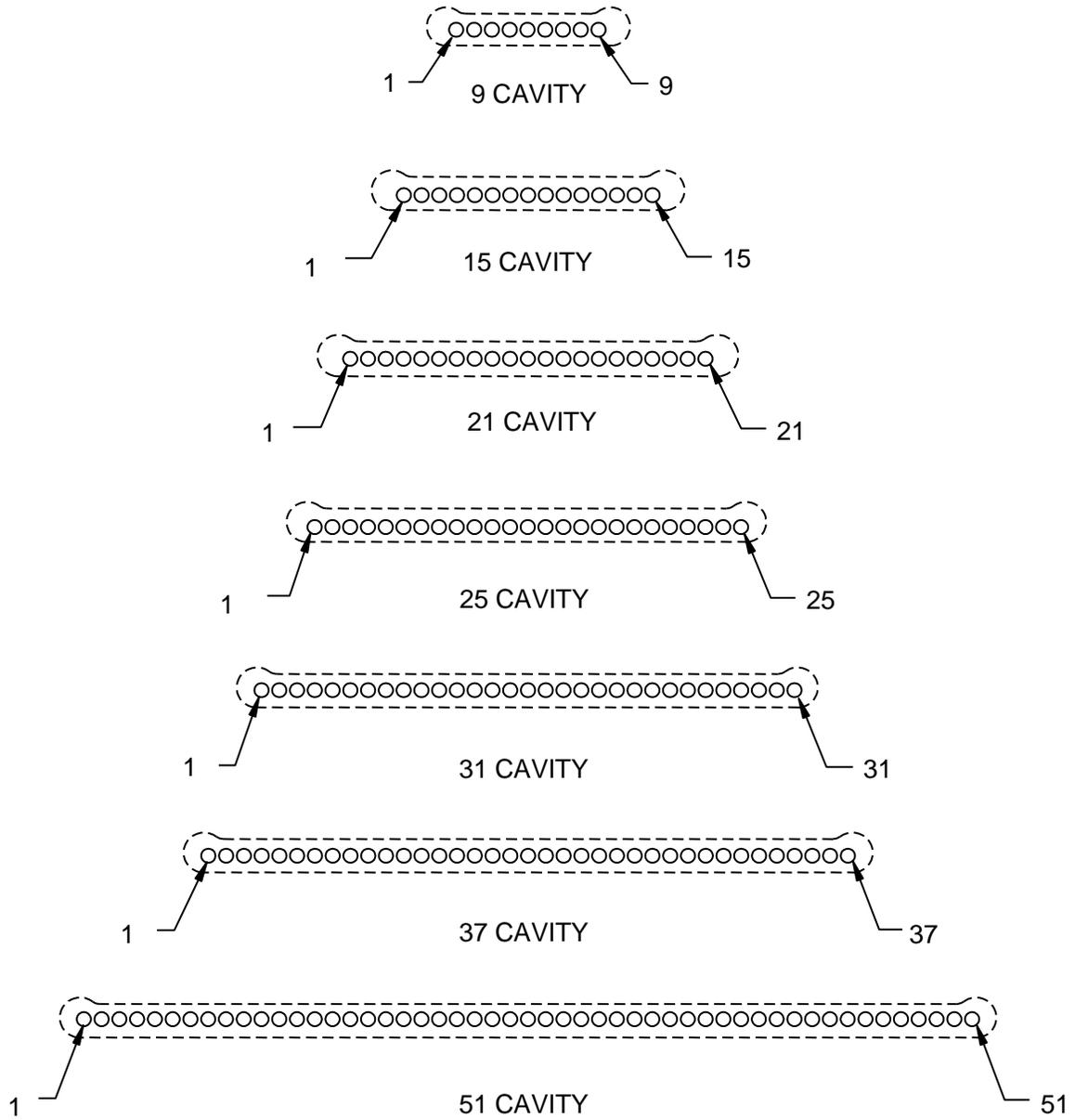
FIGURE 1. Nano connector dimensions and configurations – Continued.



NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Unless otherwise specified tolerances are $\pm .005$ inch (0.13 mm).

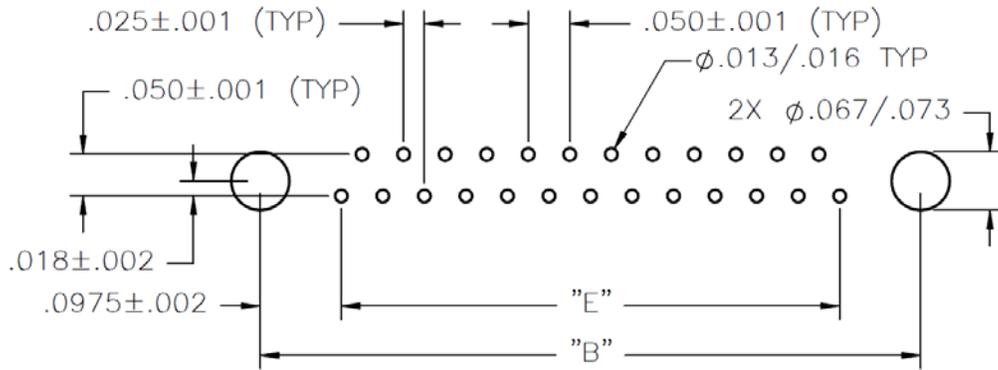
FIGURE 2. Nano connector interface.



NOTES:

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

FIGURE 3. Nano connector insert arrangement.



Insert arrangement	B BSC	E
9	.395 (10.03)	.200 (5.08)
15	.545 (13.84)	.350 (8.89)
21	.695 (17.65)	.500 (12.70)
25	.795 (20.19)	.600 (15.24)
31	.945 (24.00)	.750 (19.05)
37	1.095 (27.81)	.900 (22.86)
51	1.445 (36.70)	1.250 (31.75)

Inches	mm
.001	0.02
.002	0.05
.013	0.33
.016	0.41
.018	0.26
.025	0.64
.050	1.27
.067	1.70
.073	1.85
.0975	2.477

NOTES:

1. Reference figure 1 for hole pattern alignment orientation detail.
2. Dimensions are in inches.
3. Metric equivalents are given for information only.
4. Unless otherwise specified tolerances are $\pm .005$ inch (.13 mm) angular tolerance $\pm 2^\circ$.

FIGURE 4. Nano connector suggested PCB hole pattern.

REQUIREMENTS

Dimensions and configuration see figures 1, 2, and 3.

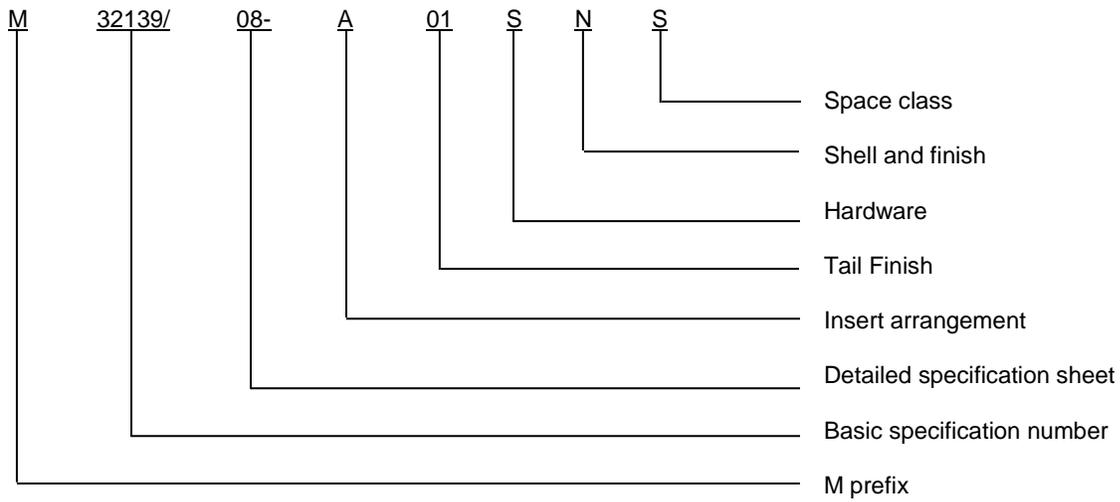
This specification sheet describes the socket side of a rectangular connector. This connector uses reverse gender contacts, i.e., the live pin is recessed in the insulator with the static socket protruding from a shrouded interface.

Contact connection: The socket contact, which is exposed in the insulator, is normally connected to the neutral side of the circuit.

Sockets are terminated to a printed circuit board (PCB) as defined in figure 4.

Mating receptacle: Shall be in accordance with MIL-DTL-32139/1, MIL-DTL-32139/5, and MIL-DTL-32139/7.

Part or Identifying Number (PIN):



Insert Arrangement

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

Tail Finish

01 = Tin/Lead
 02 = Gold

Hardware^{1/}

T = Thread hole

Shell and Finish

C = Aluminum shell, cadmium finish
 N = Aluminum shell, electroless nickel finish^{2/}
 S = Passivated stainless steel shell
 T = Titanium shell
 A = Pure Electrodeposited Aluminum
 Z = Zinc Nickel
 F = Nickel Fluorocarbon Polymer

Space class

Blank for non-space applications
 S = Space class

^{1/} Supplied installed.

^{2/} When aluminum shells are required for space applications, electroless nickel shall be used. Cadmium finish is not acceptable (see MIL-DTL-32139).

Alternate shell finishes:

Pure Electrodeposited Aluminum. Pure dense electrodeposited aluminum shall be in accordance with MIL-DTL-83488, type II shall withstand 48 hour salt spray. Color shall be non-reflective and shall meet the requirements as specified herein.

Nickel Fluorocarbon Polymer. High phosphate nickel with fluorocarbon polymer additive, over suitable underplate shall withstand 48 hour salt spray. Color shall be non-reflective and shall meet the requirements as specified herein.

Zinc Nickel. Zinc Nickel Alloy shall be in accordance with ASTM B841, over a suitable underplate shall withstand 48 hour salt spray. Color shall be non-reflective and shall meet the requirements as specified herein.

Referenced documents: In addition to MIL-DTL-32139, this document references the following:

MIL-DTL-32139/1
MIL-DTL-32139/5
MIL-DTL-32139/7
MIL-DTL-83488
ASTM B841

CONCLUDING MATERIAL

Custodians:

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

Preparing activity:

DLA - CC

(Project 5935-2013-178)

Review activities:

Army - AV, MI
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 <https://assist.dla.mil>.