



# ITT

Interconnect Solutions  
Cannon, VEAM, BIW

Assuring **100% reliability**  
in over **5,000** missile launches  
to our armed forces and global allies



*Engineered for life*

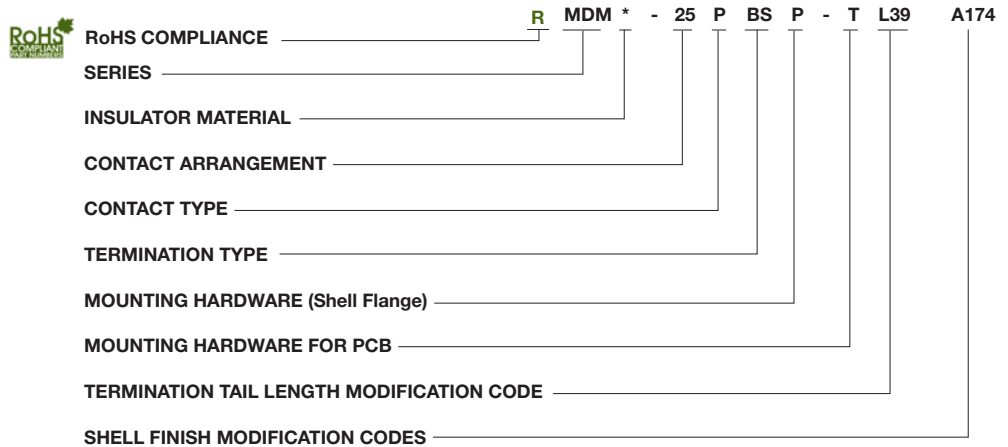
# Micro-D PCB - .050" Contact Spacing MDM-PCB



MDM-PCB connectors are designed for use with flex circuitry, flat cable and printed circuit boards or multi-layer boards. They use the standard MDM metal shell and provide high density and high reliability in board-to-board, board-to-cable and cable-to-cable applications.

MDM-PCB connectors are available in 8 shell sizes with 9 to 100 contacts. Terminations may be straight (BS) or at 90° right angle (BR, CBR) board thickness. Jackpost mounting for use with locking hardware is also available.

## How to Order - MDM-PCB Series



### SERIES

MDM - Micro "D" Metal Shell

### INSULATOR MATERIAL

Liquid Crystal Polymer (LCP)

### CONTACT ARRANGEMENT

9, 15, 21, 25, 31, 37, 51, and 100

### CONTACT TYPE

P - Pin (Plug)  
S - Socket (Receptacle)

NOTE: Back molding material – Epoxy Hysol #MG40FS

### TERMINATION TYPE

BS - Straight PCB Termination  
BR - Right Angle PCB Termination  
CBR - Right Angle Narrow Profile PCB Terminations

### MOUNTING HARDWARE (Shell Flange)

P - Jackposts  
M7 - Jackposts  
M83513/5-07 (Sizes 9-51)  
M17 - Jackposts  
M83513/5-17 (Size 100)  
No letter - none

### MOUNTING HARDWARE FOR PCB

T - Threaded Insert  
#2-56 Thd for Shell Sizes 9 thru 51  
#4-40 Thd for Shell Size 100  
No letter - none

### TERMINATION TAIL LENGTH MODIFICATION CODE

None - .109 (2.77) ±.015 (0.38) Standard  
L61 - .125 (3.18)  
L56 - .150 (3.81)  
L57 - .190 (4.83)  
L39 - .250 (6.35)  
L58 - .375 (9.52)

### SHELL FINISH MODIFICATION CODES

None - Yellow Chromate/Cadmium over Nickel  
A174 - Electroless Nickel  
A172 - Gold over Nickel  
A141 - Iridite/Alodine  
A30 - Black Anodize  
(For special modification codes, consult customer service.)

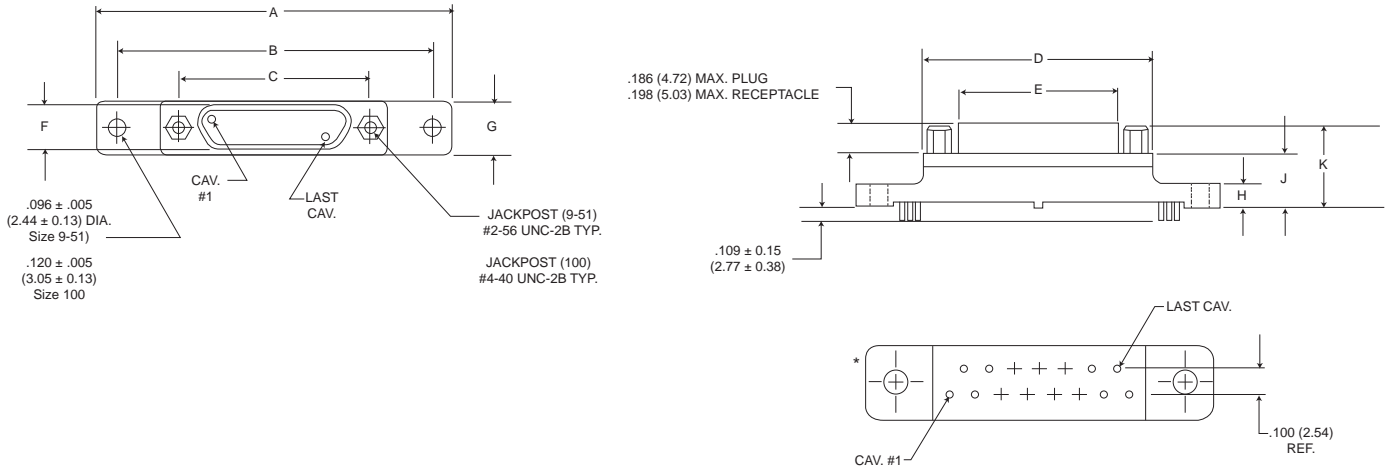
D

Microminiature



Dimensions shown in inches (mm)  
Specifications and dimensions subject to change

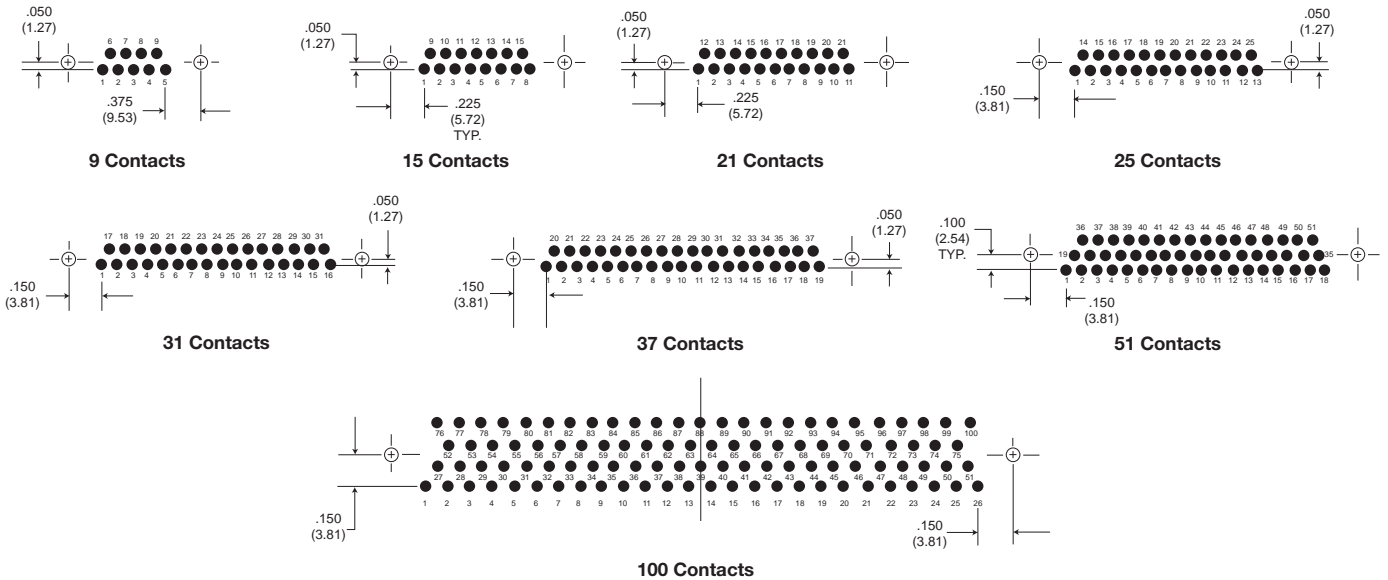
BS (Board Straight) Series



PCB Termination Arrangements\* (Viewed from PCB solder side)

Identification number shown for plug connector, use reverse order for socket connector.

NOTE: Dimensions shown are for reference only-consult factory for final design dimensions.



NOTE: Standard lead termination is #24 AWG, solid copper, solder or tin dipped

All Termination Configurations .100 (2.54) x .100 (2.54) Grid Pattern, Offset .050 (1.27)

B	B		C												
		±.007 (.18)	±.005 (.13)												
<b>B</b>	1.390 (35.31)	1.150 (29.21)	.565 (14.35)	.785 (19.94)	.334 (8.48)	.185 (4.70)	.308 (7.82)	.165 (4.19)	.355 (9.02)	.555 (14.10)					
<b>15 B</b>	1.390 (35.31)	1.150 (29.21)	.565 (14.35)	.785 (19.94)	.402 (10.21)	.253 (6.43)	.308 (7.82)	.165 (4.19)	.355 (9.02)	.555 (14.10)					
<b>1 B</b>	1.690 (43.93)	1.450 (36.83)	.865 (21.97)	1.085 (27.56)	.634 (16.10)	.185 (4.70)	.308 (7.82)	.165 (4.19)	.355 (9.02)	.555 (14.10)					
<b>5 B</b>	1.740 (44.20)	1.500 (38.10)	.965 (24.51)	1.185 (30.10)	.734 (18.64)	.185 (4.70)	.308 (7.82)	.165 (4.19)	.355 (9.02)	.555 (14.10)					
<b>31 B</b>	2.040 (51.82)	1.800 (45.72)	1.115 (28.32)	1.335 (33.91)	.884 (22.45)	.185 (4.70)	.308 (7.82)	.165 (4.19)	.355 (9.02)	.555 (14.10)					
<b>37 B</b>	2.340 (59.44)	2.100 (53.34)	1.265 (32.13)	1.485 (37.72)	1.034 (26.26)	.185 (4.70)	.308 (7.82)	.165 (4.19)	.355 (9.02)	.555 (14.10)					
<b>51 B</b>	2.270 (51.66)	2.000 (50.80)	1.215 (30.86)	1.435 (36.45)	.984 (24.99)	.228 (5.79)	.351 (8.92)	.165 (4.19)	.355 (9.02)	.555 (14.10)					
<b>100 B</b>	3.070 (77.98)	2.800 (71.12)	1.800 (45.72)	2.175 (55.24)	1.384 (35.15)	.271 (6.88)	.460 (11.68)	.303 (7.70)	.550 (12.70)	.686 (17.42)					
<b>100 B</b>	3.070 (77.98)	2.800 (71.12)	1.800 (45.72)	2.175 (55.24)	1.508 (38.30)	.394 (10.01)	.460 (11.68)	.303 (7.70)	.550 (12.70)	.686 (17.75)					

\*For jackpost, add letter "P" or "M7" for sizes 9-51, "M17" for size 100.

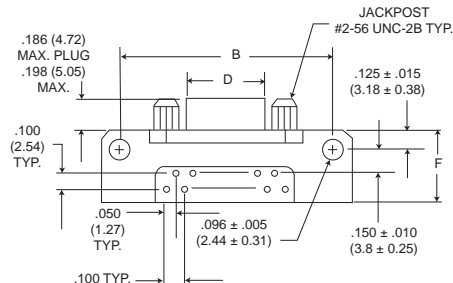
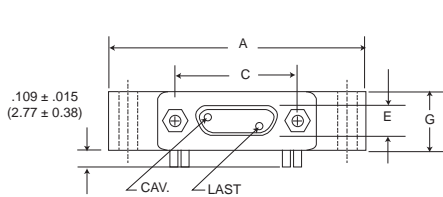
Dimensions shown in inches (mm)  
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www.ittcannon.com



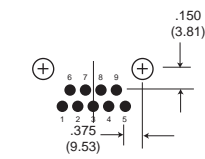
# Micro-D PCB - .050" Contact Spacing MDM-PCB

## BR (Board Right Angle) Series

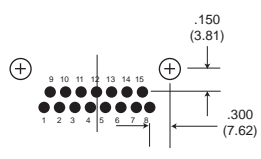


### PCB Termination Arrangements (Viewed from bottom of connector, PCB solder side.)

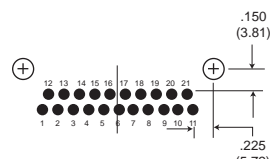
Identification number shown for plug connector, use reverse order for socket connector.



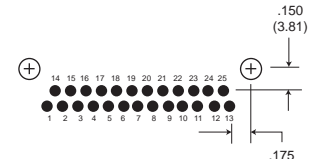
9 Contacts



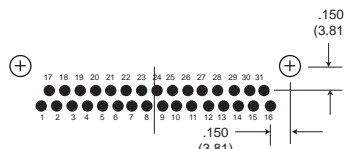
15 Contacts



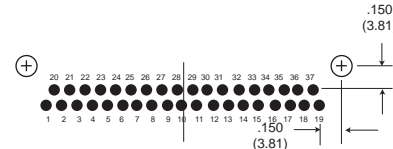
21 Contacts



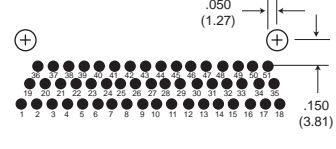
25 Contacts



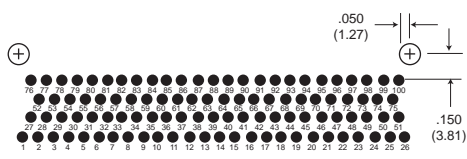
31 Contacts



37 Contacts



51 Contacts



100 Contacts

NOTE: Standard lead termination is #24 AWG, gold plated, solid copper, solder or tin dripped.

All Termination Configurations .100 (2.54) x .100 (2.54) Grid Pattern, Offset .050 (1.27).

Part Number By Shell Size	A Max.	B ± .007 (.18)	C ± .005 (.13)	D Max.	E Max.	F Max.	G Max.
MDM-9PBR*	1.390 (35.31)	1.150 (29.21)	.565 (14.35)	.334 (8.48)	.185 (4.70)	.455 (11.56)	.308 (7.82)
MDM-9SBR*	1.390 (35.31)	1.150 (29.21)	.565 (14.35)	.402 (10.21)	.253 (6.43)	.455 (11.56)	.308 (7.82)
MDM-15PBR*	1.540 (39.12)	1.300 (33.02)	.715 (18.16)	.484 (12.29)	.185 (4.70)	.455 (11.56)	.308 (7.82)
MDM-15SBR*	1.540 (39.12)	1.300 (33.02)	.715 (18.16)	.552 (13.97)	.253 (6.43)	.455 (11.56)	.308 (7.82)
MDM-21PBR*	1.690 (42.93)	1.450 (36.83)	.865 (21.97)	.634 (16.10)	.185 (4.70)	.455 (11.56)	.308 (7.82)
MDM-21SBR*	1.690 (42.93)	1.450 (36.83)	.865 (21.97)	.702 (17.83)	.253 (6.43)	.455 (11.56)	.308 (7.82)
MDM-25PBR*	1.790 (45.47)	1.550 (39.37)	.965 (24.51)	.734 (18.64)	.185 (4.70)	.455 (11.56)	.308 (7.82)
MDM-25SBR*	1.790 (45.47)	1.550 (39.37)	.965 (24.51)	.802 (20.37)	.253 (6.43)	.455 (11.56)	.308 (7.82)
MDM-31PBR*	2.040 (51.82)	1.800 (45.72)	1.115 (28.32)	.884 (22.45)	.185 (4.70)	.455 (11.56)	.308 (7.82)
MDM-31SBR*	2.040 (51.82)	1.800 (45.72)	1.115 (28.32)	.952 (24.18)	.253 (6.43)	.455 (11.56)	.308 (7.82)
MDM-37PBR*	2.340 (59.44)	2.100 (53.34)	1.265 (32.13)	1.034 (26.26)	.185 (4.70)	.455 (11.56)	.308 (7.82)
MDM-37SBR*	2.340 (59.44)	2.100 (53.34)	1.265 (32.13)	1.102 (27.99)	.253 (6.43)	.455 (11.56)	.308 (7.82)
MDM-51PBR*	1.875 (47.63)	1.600 (40.64)	1.215 (30.86)	.984 (24.99)	.228 (5.79)	.565 (14.35)	.351 (8.92)
MDM-51SBR*	1.875 (47.63)	1.600 (40.64)	1.215 (30.86)	1.052 (26.72)	.296 (7.52)	.565 (14.35)	.351 (8.92)
MDM-100PBR*	2.74 (69.72)	2.500 (63.50)	1.800 (45.72)	1.384 (35.15)	.271 (6.88)	.755 (19.18)	.394 (10.01)
MDM-100SBR*	2.74 (69.72)	2.500 (63.50)	1.800 (45.72)	1.508 (38.10)	.394 (10.01)	.755 (19.18)	.394 (10.01)

\*For jackpost, add letter "P" or "M7" for sizes 9-51, "M17" for size 100.

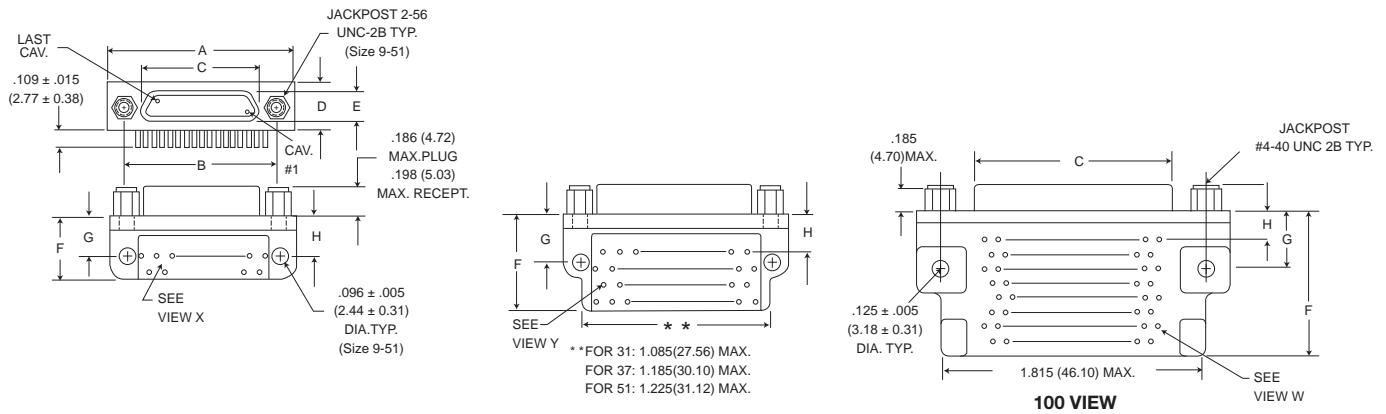


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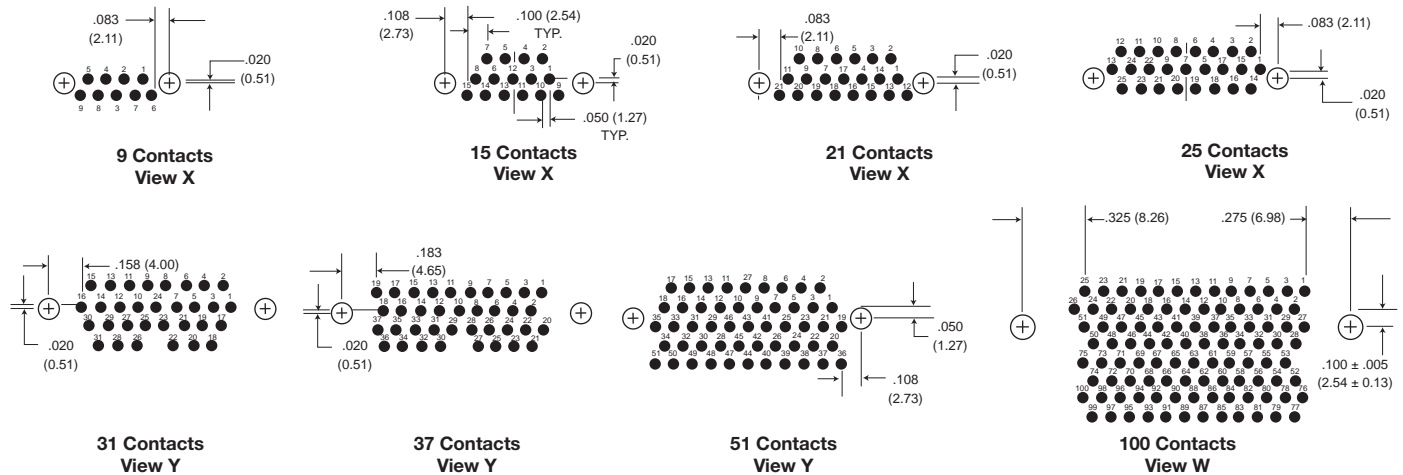


Dimensions shown in inches (mm)  
Specifications and dimensions subject to change

CBR (Condensed Board Right Angle) Series



PCB Termination Arrangements (Viewed from bottom of connector, PCB solder side.)  
Identification number shown for plug connector, use reverse order for socket connector.



All Termination Configurations .100 (2.54) x .100 (2.54) Grid Pattern, Offset .050 (1.27).

NOTE: Standard lead termination is #24 AWG, solid copper, solder or tin dripped.

Part Number By Shell Size	A Max.	B ± .005 (.13)	C Max.	D Max.	E Max.	F Max.	G ± .010 (.25)	H ± .010 (.25)
MDM-9PCBR*	.785 (19.94)	.565 (14.35)	.334 (8.48)	.308 (7.82)	.185 (4.70)	.420 (10.67)	.250 (6.35)	.230 (5.81)
MDM-9SCBR*	.785 (19.94)	.565 (14.35)	.402 (10.21)	.308 (7.82)	.253 (6.43)	.420 (10.67)	.250 (6.35)	.230 (5.81)
MDM-15PCBR*	.935 (23.75)	.715 (18.16)	.484 (12.29)	.308 (7.82)	.185 (4.70)	.420 (10.67)	.250 (6.35)	.130 (3.30)
MDM-15SCBR*	.935 (23.75)	.715 (18.16)	.552 (13.97)	.308 (7.82)	.253 (6.43)	.420 (10.67)	.250 (6.35)	.130 (3.30)
MDM-21PCBR*	1.085 (27.56)	.865 (21.97)	.634 (16.10)	.308 (7.82)	.185 (4.70)	.420 (10.67)	.250 (6.35)	.130 (3.30)
MDM-21SCBR*	1.085 (27.56)	.865 (21.97)	.702 (17.83)	.308 (7.82)	.253 (6.43)	.420 (10.67)	.250 (6.35)	.130 (3.30)
MDM-25PCBR*	1.185 (30.10)	.965 (24.51)	.734 (18.64)	.308 (7.82)	.184 (4.70)	.420 (10.67)	.250 (6.35)	.130 (3.30)
MDM-25SCBR*	1.185 (30.10)	.965 (24.51)	.802 (20.37)	.308 (7.82)	.253 (6.43)	.420 (10.67)	.250 (6.35)	.130 (3.30)
MDM-31PCBR*	1.335 (33.91)	1.115 (28.32)	.884 (22.45)	.308 (7.82)	.185 (4.70)	.520 (13.21)	.250 (6.35)	.130 (3.30)
MDM-31SCBR*	1.335 (33.91)	1.115 (28.32)	.952 (24.18)	.308 (7.82)	.253 (6.43)	.520 (13.21)	.250 (6.35)	.130 (3.30)
MDM-37PCBR*	1.485 (37.72)	1.265 (32.13)	1.034 (26.26)	.308 (7.82)	.185 (4.70)	.520 (13.21)	.250 (6.35)	.130 (3.30)
MDM-37SCBR*	1.485 (37.72)	1.265 (32.13)	1.102 (27.99)	.308 (7.82)	.253 (6.43)	.520 (13.21)	.250 (6.35)	.130 (3.30)
MDM-51PCBR*	1.435 (36.45)	1.215 (30.86)	.984 (24.99)	.351 (8.92)	.228 (5.79)	.650 (16.15)	.300 (7.62)	.150 (3.81)
MDM-51SCBR*	1.435 (36.45)	1.215 (30.86)	1.052 (26.72)	.351 (8.92)	.296 (7.52)	.650 (16.15)	.300 (7.62)	.150 (3.81)
MDM-100PCBR*	2.170 (55.12)	1.800 (45.72)	1.384 (35.15)	.394 (10.01)	.271 (6.88)	1.000 (25.40)	.400 (10.16)	.200 (5.08)
MDM-100SCBR*	2.170 (55.12)	1.800 (45.72)	1.508 (38.10)	.394 (10.01)	.394 (10.01)	1.000 (25.40)	.400 (10.16)	.200 (5.08)

\*For jackpost, add letter "P" or "M7" for sizes 9-51, "M17" for size 100.

# Shielded MDM PCB Connector Family



The new shielded MDM PCB-CBR board mount connector is an extension of ITT-ICS' standard MDM series thru hole PCB connectors. This new EMI shielded version includes a built in shielding can for effective shielding performance. This new design allows for terminations right to a PCB or to a flex circuit. The connector utilizes the standard MDM shell and is available in condensed board right angle configurations. The pin layouts are from 9-51 positions. Jackpost mounting for use with locking hardware is also available.

<b>Current Rating</b>	3 AMP
<b>Dielectric Withstanding Voltage</b>	600 VAC sea Level
<b>Insulation Resistance</b>	5000 megaohms maximum
<b>Contact Resistance</b>	8 milliohms maximum
<b>Operating Temperature</b>	-55° C to +150° C
<b>Shock, Vibration</b>	50 g. , 20 g

## Performance

The table below summarizes the results of key tests performed in accordance with MIL-STD-1344, where applicable. Data is applicable to standard connectors with standard termination. Variations may affect this data, so please consult customer service for further information on your requirements.

The table below summarizes the results of key tests performed in accordance with MIL-STD-1344, where applicable. Data is applicable to standard connectors with standard termination. Variations may affect this data, so please consult customer service for further information on your requirements.

Test	Method	Criteria of Acceptance
Dielectric Withstanding Voltage	Method 3001: 600 VAC at sea level 150 VAC at 70,00' altitude	No breakdown No breakdown
Insulation Resistance	Method 3003	5,000 megohms minimum
Thermal Shock	Method 1003, Condition A: - 55°C to +125°C	No physical damage
Physical Shock	Method 2004, Condition E: 50 G's, 3 axes, 6 millisecond duration sawtooth pulse	No physical damage No loss of continuity > 1 µsec
Vibration	Method 2005, Condition IV: 20 G's, 10-2,000 Hz. 12 hrs	No physical damage No loss of continuity > 1 µsec
Durability	500 cycles of mating and unmating, 500 CPH max.	No mechanical or electrical defects
Moisture Resistance	Method 1002, Type II, omit steps 7a & 7b	Insulation resistance > 100 megohms
Salt Spray	Method 1001, Condition B: 48 hours	Shall be capable of mating and unmating, and meet contact resistance requirements
Contact Resistance (MIL-STD-202)	Method 1001, Condition B: At 3 amps At 1 milliamp	8 milliohms maximum 10 milliohms maximum
Contact Retention	Per MIL-DTL-83513	5 lb. minimum axial load



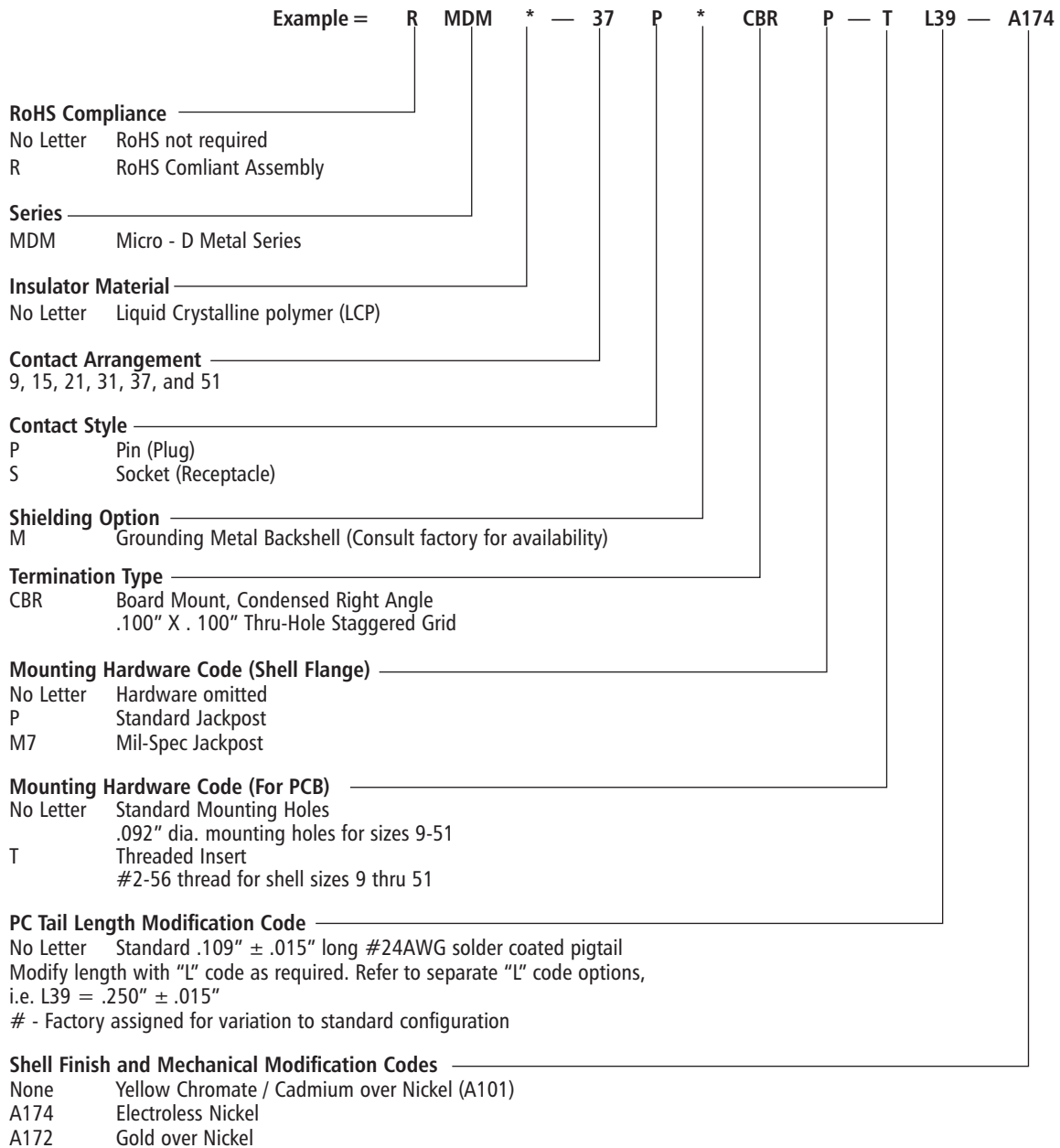
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Dimensions shown in inches (mm)  
Specifications and dimensions subject to change

Talking Dog



Note: Consult factory for version with jack screws without mounting holes for use with flex circuit applications.  
 Consult factory for tooled versions.



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Microminiature