

How to Order FEATURES

- A range of filtered MIL-DTL-83513 Micro-D products for military and aerospace applications.
- Small filter connectors which employ monolithic planar capacitors in a rugged, high density package
- Ideally suited for applications where space and weight is restricted.
- Available in a variety of filter types and mechanical configurations including wired harnesses and PCB terminations.
- Fully intermateable with all standard MIL-DTL-83513 connectors and meet the applicable performance and environmental requirements.

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
RoHS Compliance	Connector Series	Connector Size	Connector Type	Termination Type	Wire Lead Length	Mounting Style	Insert Option	Filter Type	Filter Value	Plating	Deviation
	M13-	21	P	1	P	P	T	C	1	1-	000

1. RoHS Compliance

E	RoHS Compliant
	Blank for Non-RoHS

2. Connector Series

M13-	Filtered Micro-D
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3. Connector Size (Number of Contacts)

09
15
21
25
31
37

4. Connector Type

P	Plug (Pin)
S	Receptacle (Socket)

5. Termination Type

1	Vertical PCB "BS"
2	Vertical PCB "C6"
3	Solder Cup
4	Right Angle PCB "CBR"
5	Solid Wire Straight
6	Stranded Wire

6. Wire/Lead Length

	Omit for Solder Cup
1	.109" ±.015
2	.140" ±.015
3	.172" ±.015
4	.250" ±.015

7. Mounting Style

A	.093" Mounting Hole
B	.125" Mounting Hole
L	Jackpost (Loose)
P	Jackpost (Fixed)

8. Insert Option

	Omit if not Used
T	Threaded Insert (PCB Termination Only)

10. Filter Value pF+100%/-0%

A	200
B	400
C	800
1	1000
2	2000
4	4000
8	8000
T	10,000
H	16,000
0	Mixed Cap

TERMINATION TYPE 6 (INCHES +1.00/-0.00)

A	18.00 per M22759/11-26 (MIL-STD-681, System 1)
B	36.00 per M22759/11-26 (MIL-STD-681, System 1)
C	72.00 per M22759/11-26 (MIL-STD-681, System 1)

9. Filter Type

P	Pi Filter
C	C Filter
0	Non-Filtered Equivalent Part

11. Plating

1-	Electroless Nickel
2-	Tin
3-	Cadmium (Clear Chromate)
4-	Gold
5-	Zinc Nickel

12. Deviation

000	Standard
XXX	Custom

MICRO-D FILTERED CONNECTORS

SERIES M13

Specifications

TABLE 1: ELECTRICAL CHARACTERISTICS-C FILTER

FILTER CIRCUITS		C, CLR, LRC					
Capacitance (pF) (@ 25 C, 1 kHz and 1.0 VRMS)		150 - 300	300 - 500	600 - 1200	1200 - 3200	4000 - 8000	8000 - 16000
Insertion Loss (dB min.) (per MIL-STD-220 @ 25 C and no load)	.1 MHz	-	-	-	-	-	-
	1 MHz	-	-	-	-	-	-
	10 MHz	-	-	2	5	13	18
	100 MHz	6	12	17	24	33	40
	1000 MHz	25	31	38	43	54	60
Working Voltage (VDC) @ 25 C & sea level		100					
Dielectric Withstanding Voltage (VDC) @ 25 C and 50 mA max. charging current		300					
Insulation Resistance (Gohms) @ 25 C and working voltage		5					
Contact Current Rating (continuous max. DC amperes)		3					
Filter RF Current Rating (amperes) (max. @ any frequency)		0.3					

TABLE 2: ELECTRICAL CHARACTERISTICS-PI FILTER

FILTER CIRCUITS		Pi					
Capacitance (pF) (@ 25 C, 1 kHz and 1.0 VRMS)		150 TO 300	300 TO 500	600 TO 1200	1200 TO 3200	4000 TO 8000	8000 TO 16000
Insertion Loss (dB min.) (per MIL-STD-220 @ 25 C and no load)	.1 MHz	-	-	-	-	-	-
	1 MHz	-	-	-	-	-	3
	10 MHz	-	-	2	5	13	18
	100 MHz	7	12	18	26	45	57
	1000 MHz	30	42	53	60	60	60
Working Voltage (VDC) (@ 25 C & sea level)		100					
Dielectric Withstanding Voltage (VDC) (@ 25 C and 50 mA max. charging current)		300					
Insulation Resistance (Gohms) @ 25 C and working voltage		5					
Contact Current Rating (continuous max. DC amperes)		3					
Filter RF Current Rating (amperes) (max. @ any frequency)		0.3					

MICRO-D

Specifications

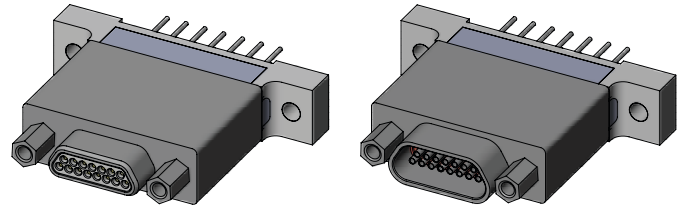
TABLE 3: MATERIAL AND FINISHES	
Connector Shell:	Aluminum Alloy
Insulator:	Polyphenylene Sulfide (PPS)
Seals:	Silicone Rubber or Equivalent
Pin Contact:	Beryllium Copper with 50 micro-inches gold over nickel plating
Socket Contact:	Copper alloy with 50 micro-inches gold over nickel plating
Hardware:	300 series stainless steel
PCB Terminals:	Gold plated copper alloy, solder dipped
Capacitors:	Planar ceramic array
Inductors:	Ferrite
EMI Ground Spring:	Beryllium Copper
Encapsulant:	Thermally conductive epoxy

TABLE 4: QUALITY CONFORMANCE INSPECTION	
Series M13 connectors have been extensively qualified per the requirements of MIL-DTL-83513. All products shipped have the following inspection tests:	<ul style="list-style-type: none"> • 100% visual and mechanical inspections • 100% capacitance, DWV, insulation resistance and dissipation factor testing • Sample insertion loss testing (AQL 1.0%)
For high reliability applications, the following inspection tests or certifications are also available:	<ul style="list-style-type: none"> • Thermal shock • Elevated temperature voltage conditioning • Elevated temperature insulation resistance and capacitance • Outgassing per JSC-SPR-0022 for space-borne applications • Baseline and single lot date code manufacturing • Other tests as required (consult the factory)

MICRO-D FILTERED CONNECTORS SERIES M13

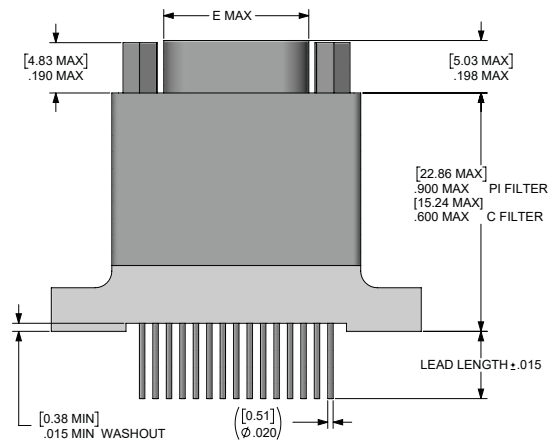
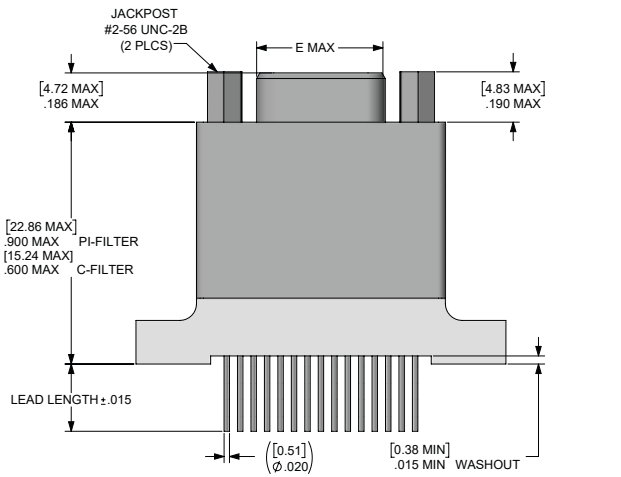
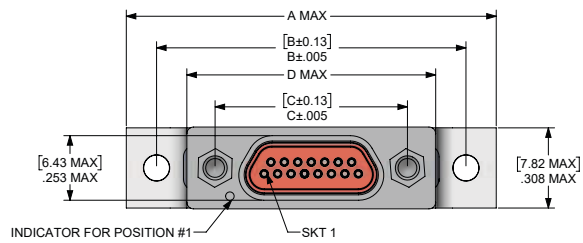
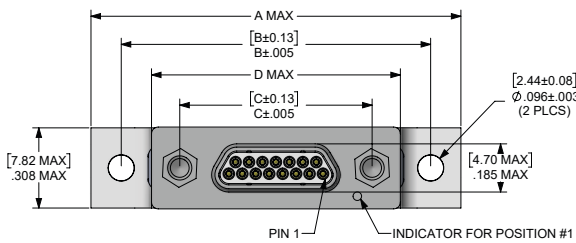
Termination Type 1

VERTICAL PCB "BS"



PLUG

RECEPTACLE



MICRO-D

Dimensions are in inch(mm)

SIZE	A MAX	±.005 (0.13)	±.005 (0.13)	D MAX	E MAX	
					PLUG	RCPT
09	1.390 (35.31)	1.150 (29.21)	.565 (14.35)	.788 (20.02)	.334 (8.48)	.402 (10.21)
15			.715 (18.16)	.935 (23.75)	.484 (12.29)	.552 (14.02)
21	1.690 (42.93)	1.450 (36.83)	.865 (21.97)	1.085 (27.56)	.634 (16.10)	.702 (17.83)
25	1.740 (44.20)	1.500 (38.10)	.965 (24.51)	1.185 (30.10)	.734 (18.64)	.802 (20.37)
31	2.040 (51.82)	1.800 (45.72)	1.115 (28.32)	1.335 (33.91)	.884 (22.45)	.952 (24.18)
37	2.340 (59.44)	2.100 (53.34)	1.265 (32.13)	1.485 (37.72)	1.034 (26.26)	1.102 (27.99)

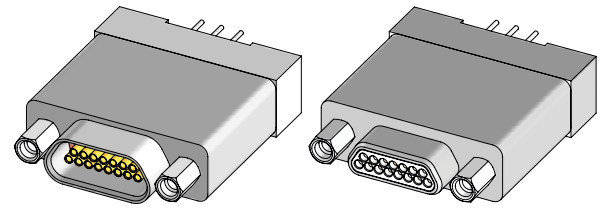
Refer to page 26 for straight PC configurations.

Receptacle Includes interfacial seal

Contact Amphenol Canada for more information at 416-291-4401 • www.amphenolcanada.com
Download 2D drawings & 3D models using our online configurator.

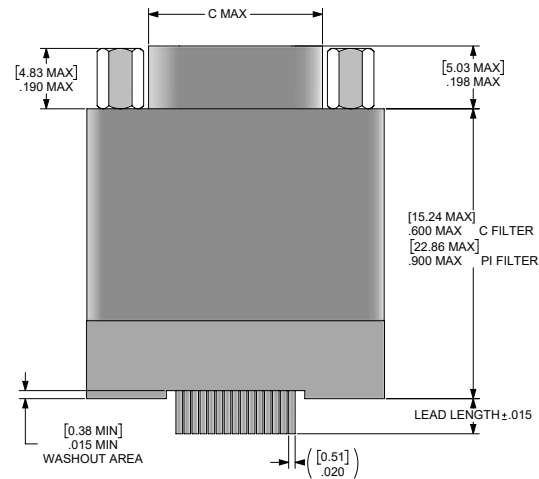
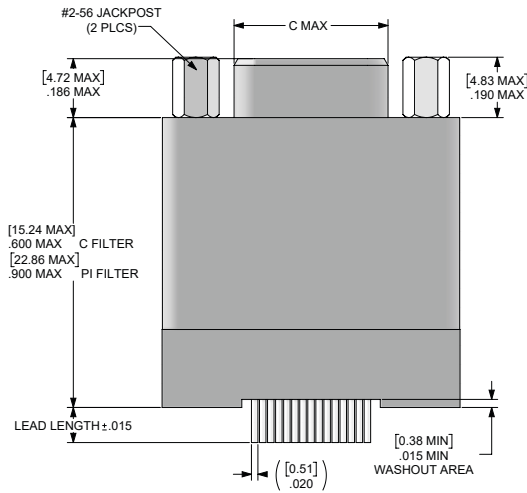
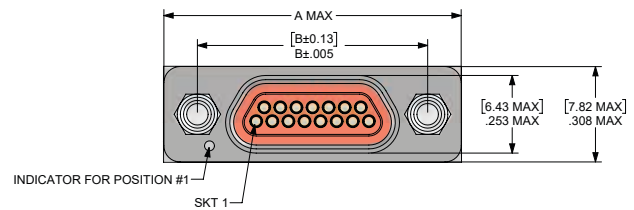
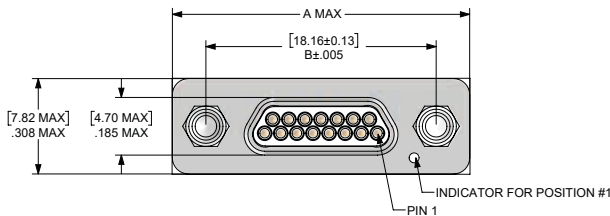
Termination Type 2

VERTICAL PCB "C6"



PLUG

RECEPTACLE



Dimensions are in inch(mm)

SIZE	A MAX	B ±.005 (0.13)	C MAX	
			PLUG	RCPT
09	.785 (19.94)	.565 (14.35)	.334 (8.48)	.402 (10.21)
15	.935 (23.75)	.715 (18.16)	.484 (12.29)	.552 (14.02)
21	1.085 (27.56)	.865 (21.97)	.634 (16.10)	.702 (17.83)
25	1.185 (30.10)	.965 (24.51)	.734 (18.64)	.802 (20.37)
31	1.335 (33.91)	1.115 (28.32)	.884 (22.45)	.952 (24.18)
37	1.485 (37.72)	1.265 (32.13)	1.034 (26.26)	1.102 (27.99)

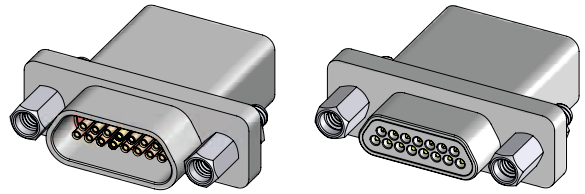
Refer to page 29 for straight PC configurations.

Receptacle Includes interfacial seal

MICRO-D FILTERED CONNECTORS SERIES M13

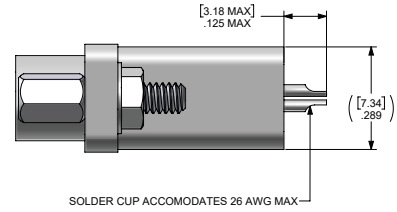
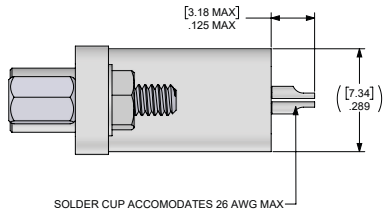
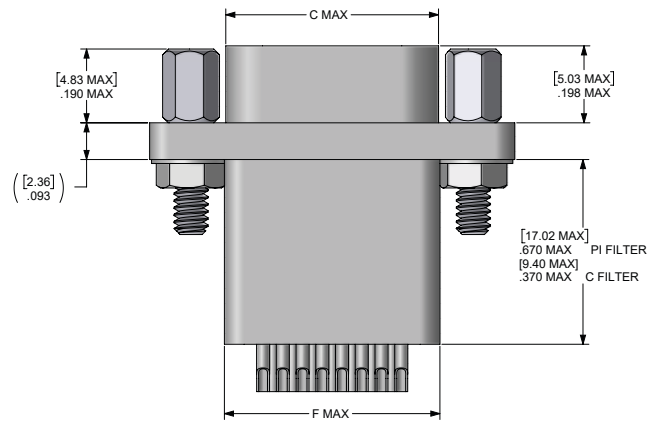
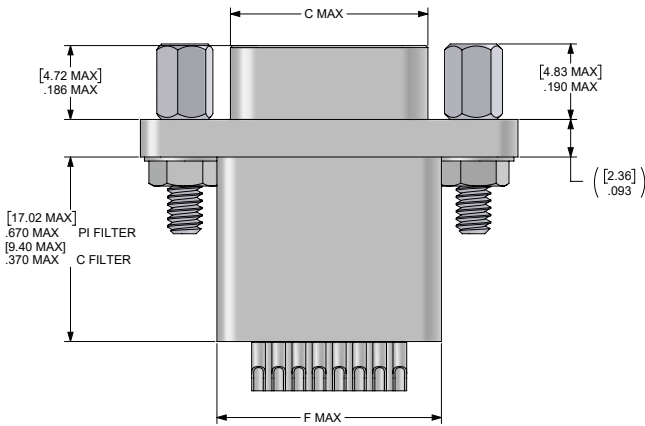
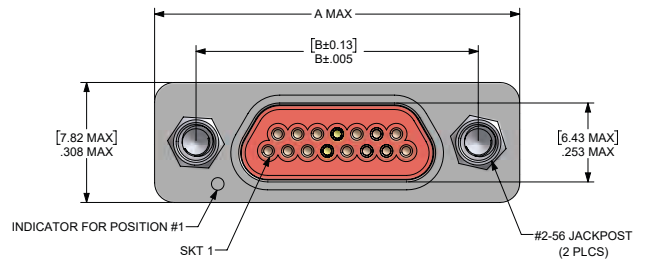
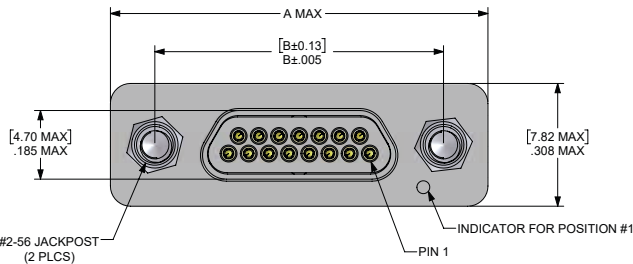
Termination Type 3

SOLDER CUP



PLUG

RECEPTACLE



MICRO-D

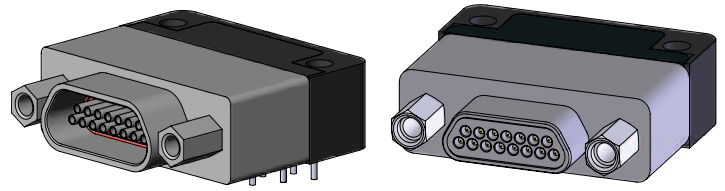
Dimensions are in inch(mm)

SIZE	A MAX	B ±.005 (0.13)	C MAX		F MAX
			PLUG	RCPT	
09	.785 (19.94)	.565 (14.35)	.334 (8.48)	.402 (10.21)	.400 (10.16)
15	.935 (23.75)	.715 (18.16)	.484 (12.29)	.552 (13.97)	.550 (13.97)
21	1.085 (27.56)	.865 (21.97)	.634 (16.10)	.702 (17.83)	.700 (17.78)
25	1.185 (30.10)	.965 (24.51)	.734 (18.64)	.802 (20.37)	.800 (20.32)
31	1.335 (33.91)	1.115 (28.32)	.884 (22.45)	.952 (24.18)	.950 (24.13)
37	1.485 (37.72)	1.265 (32.13)	1.034 (26.26)	1.102 (27.99)	1.100 (27.94)

Receptacle Includes interfacial seal

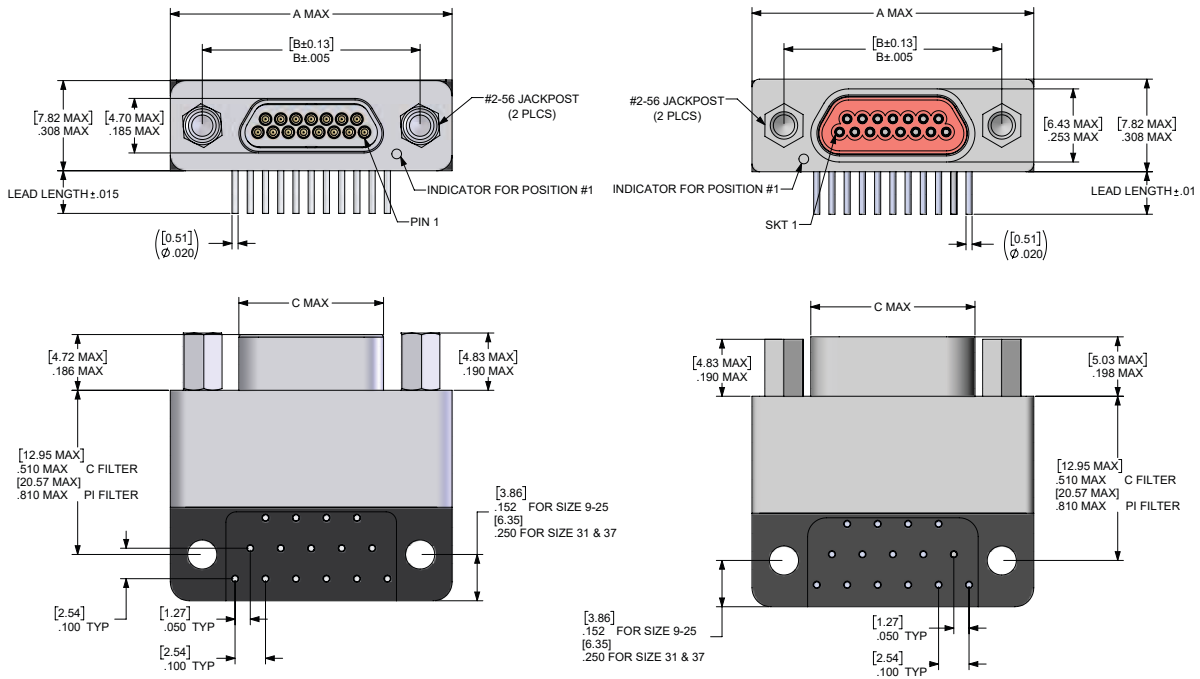
Termination Type 4

RIGHT ANGLE PCB "CBR"



PLUG

RECEPTACLE



Dimensions are in inch(mm)

SIZE	A MAX	B ±.005 (0.13)	C MAX	
			PLUG	RCPT
09	.785 (19.94)	.565 (14.35)	.334 (8.48)	.402 (10.21)
15	.935 (23.75)	.715 (18.16)	.484 (12.29)	.552 (13.97)
21	1.085 (27.56)	.865 (21.97)	.634 (16.10)	.702 (17.83)
25	1.185 (30.10)	.965 (24.51)	.734 (18.64)	.802 (20.37)
31	1.335 (33.91)	1.115 (28.32)	.884 (22.45)	.952 (24.18)
37	1.485 (37.72)	1.265 (32.13)	1.034 (26.26)	1.102 (27.99)

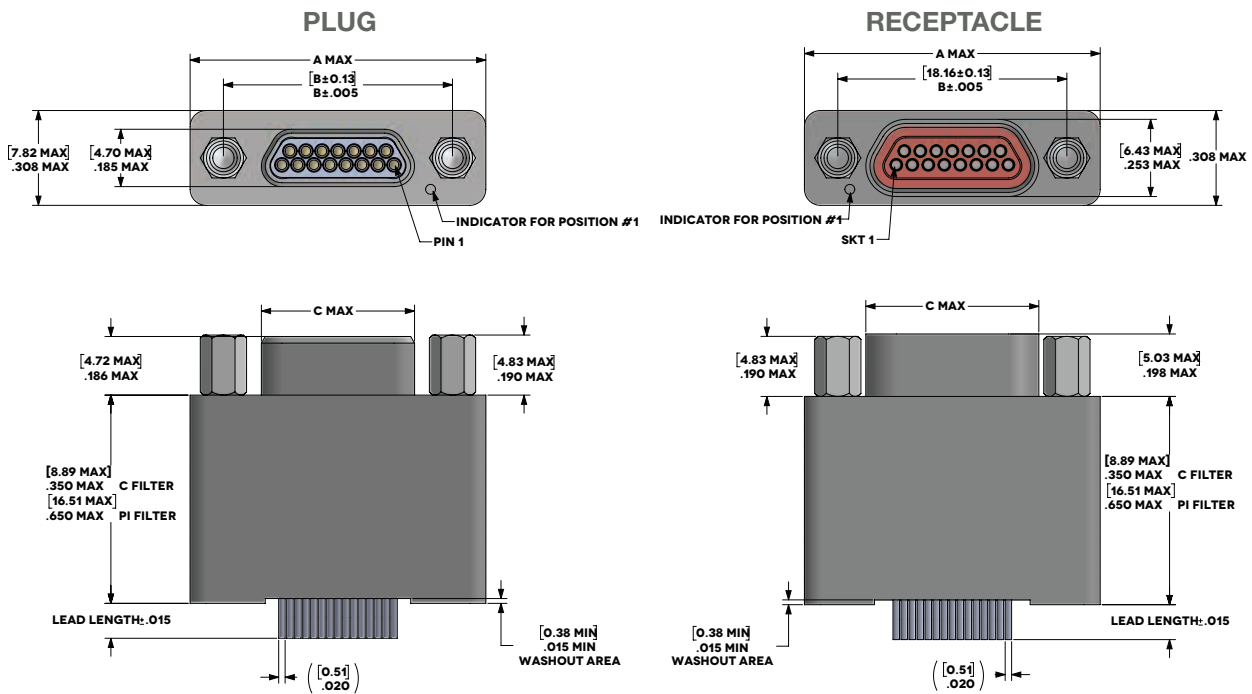
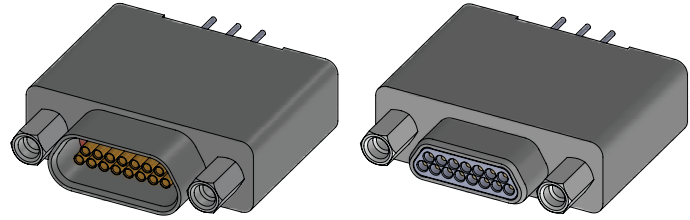
Refer to page 19 for right angle (90 DEG) PC configurations.

Receptacle Includes interfacial seal

MICRO-D FILTERED CONNECTORS SERIES M13

Termination Type 5

SOLID WIRE STRAIGHT



MICRO-D

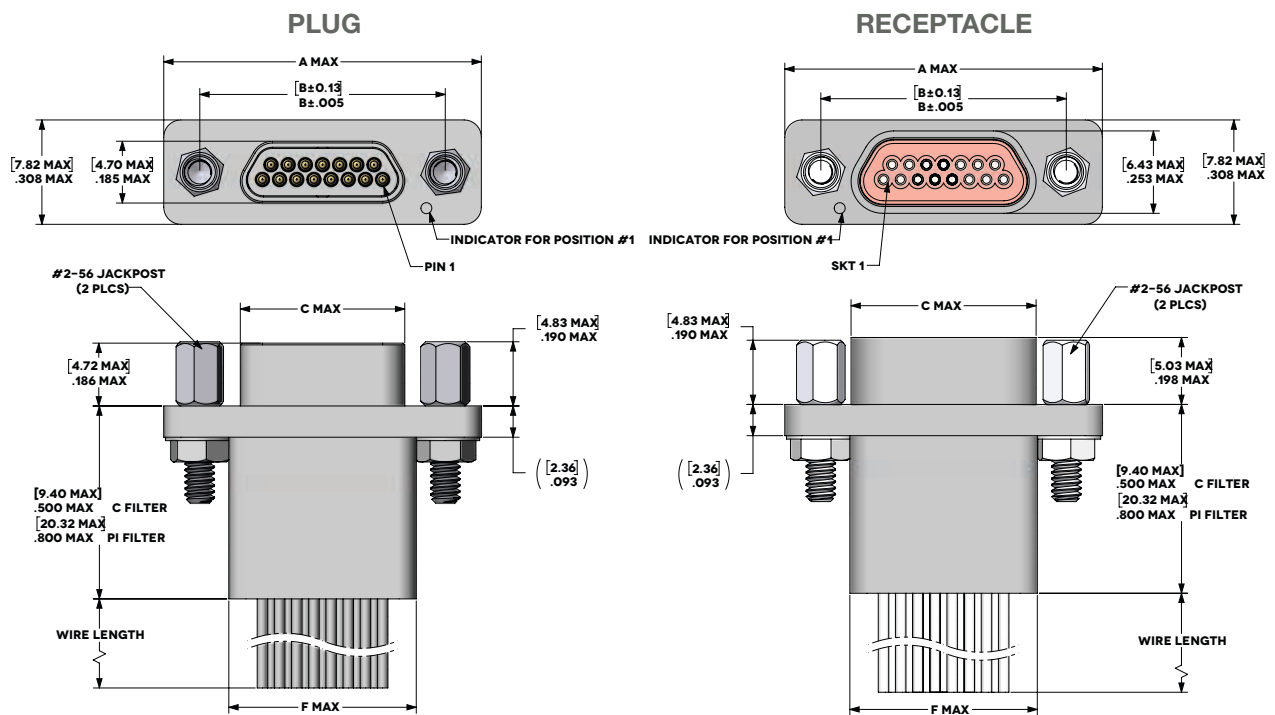
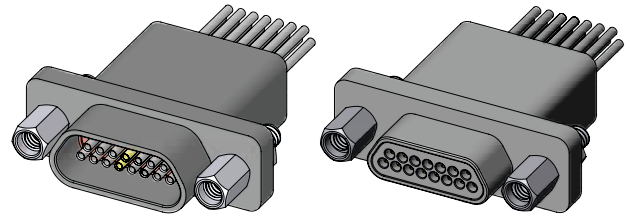
Dimensions are in inch(mm)

SIZE	A MAX	B $\pm .005$ (0.13)	C MAX	
			PLUG	RCPT
09	.785 (19.94)	.565 (14.35)	.334 (8.48)	.402 (10.21)
15	.935 (23.75)	.715 (18.16)	.484 (12.29)	.552 (13.97)
21	1.085 (27.56)	.865 (21.97)	.634 (16.10)	.702 (17.83)
25	1.185 (30.10)	.965 (24.51)	.734 (18.64)	.802 (20.37)
31	1.335 (33.91)	1.115 (28.32)	.884 (22.45)	.952 (24.18)
37	1.485 (37.72)	1.265 (32.13)	1.034 (26.26)	1.102 (27.99)

Receptacle Includes interfacial seal

Termination Type 6

STRANDED WIRE STRAIGHT



Dimensions are in inch(mm)

SIZE	A MAX	B ±.005 (0.13)	C MAX		F MAX
			PLUG	RCPT	
09	.785 (19.94)	.565 (14.35)	.334 (8.48)	.402 (10.21)	.400 (10.16)
15	.935 (23.75)	.715 (18.16)	.484 (12.29)	.552 (13.97)	.550 (13.97)
21	1.085 (27.56)	.865 (21.97)	.634 (16.10)	.702 (17.83)	.700 (17.78)
25	1.185 (30.10)	.965 (24.51)	.734 (18.64)	.802 (20.37)	.800 (20.32)
31	1.335 (33.91)	1.115 (28.32)	.884 (22.45)	.952 (24.18)	.950 (24.13)
37	1.485 (37.72)	1.265 (32.13)	1.034 (26.26)	1.102 (27.99)	1.100 (27.94)

Receptacle Includes interfacial seal