

Series M13

Example:
M13-21S6APC11-000

Description: metal shell size 21 receptacle, nickel finish, 18" stranded wires per M22759/11, jackposts only, C-filter value 1000 pF (no deviations)

M13 21 P 1 2 P T C 1 1 - 000

Connector Series
M13 = Filtered micro-d

Connector Size (number of contacts)
09, 15, 21, 25, 31 and 37

Connector Type
P = Plug (pin)
S = Receptacle (socket)

Termination Type
1 = vertical PCB "BS"
2 = vertical PCB "C6"
4 = right angle PCB "CBR"
5 = solid wire straight
6 = stranded wire

Wire / Lead Length (inches)
1 = .109 +/- .015
2 = .140 +/- .015
3 = .172 +/- .015
4 = .250 +/- .015

For 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)

Deviation
XXX (000 is standard part)

Plating
1 = Electroless Nickel
2 = Tin
3 = Cadmium (Clear Chromate)
4 = Gold
5 = Zn Ni

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

Filter Type
P = Pi-Filter
C = C-Filter
0 = non-filtered equivalent part

Insert Option
T = Threaded Insert (PCB terminations only)
Omit if not used

Mounting Hardware
A = .093" diameter mounting hole
B = .125" diameter mounting hole
L = Jackpost (loose)
P = Jackpost (fixed)

MATERIALS AND FINISHES

- Connector Shell: Aluminum Alloy
- Insulator: Polyphenyl Sulfide (PPS)
- Seals: Silicone Rubber or Equivalent
- Pin Contact: Beryllium Copper with 50 microinches gold over nickel plating
- Socket Contact: Copper alloy with 50 microinches 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

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:

- 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:

- 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)

INCHES (MM)

FEATURES

Amphenol Canada's M13 connector series is a range of filtered MIL-DTL-83513 Micro-D products for military and aerospace applications. These extremely small filter connectors 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. The M13 series are fully intermateable with all standard MIL-DTL-83513 connectors and meet the applicable performance and environmental requirements.

Amphenol
Canada

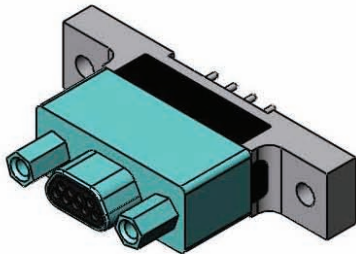
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C-FILTER SPECIFICATIONS

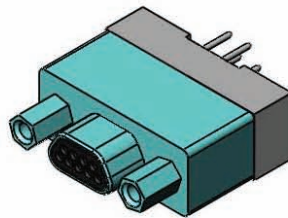
Filter Circuits		C, CLR, LRC					
Capacitance (pF) (@ 25 C, 1 kHz and 1.0 VRMS)		150 TO 300	300 TO 500	600 TO 1200	1200 TO 3200	4000 TO 8000	8000 TO 16000
Insertion Loss (dB min.)	.1 MHz	-	-	-	-	-	-
(per MIL-STD-220	1 MHz	-	-	-	-	-	-
@ 25 C and no load)	10 MHz	-	-	2	5	13	18
	100 MHz	6	12	17	24	33	40
	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					

PI-FILTER SPECIFICATIONS

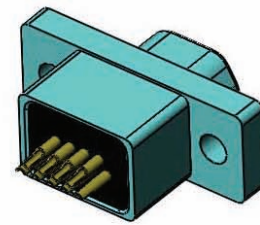
Filter Circuits		Pi					
Capacitance (pF) (@ 25 C, 1 kHz and 1.0 VRMS)		150 TO 300	300 TO 500	600 TO 1200	1200 TO 3200	4000 TO 8000	8000 TO 16000
Insertion Loss (dB min.)	.1 MHz	-	-	-	-	-	-
(per MIL-STD-220	1 MHz	-	-	-	-	-	3
@ 25 C and no load)	10 MHz	-	-	2	5	13	18
	100 MHz	7	12	18	26	45	57
	1000 MHz	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					



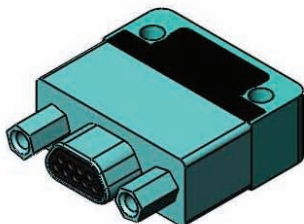
TERMINATION TYPE 1
VERTICAL PCB "BS"



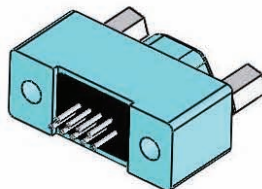
TERMINATION TYPE 2
VERTICAL PCB "C6"



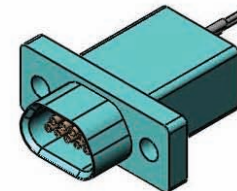
TERMINATION TYPE 3
SOLDER CUP



TERMINATION TYPE 4
RIGHT ANGLE PCB "CBR"

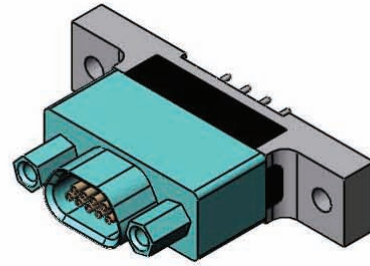
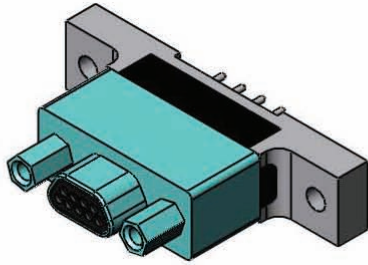


TERMINATION TYPE 5
SOLID WIRE STRAIGHT



TERMINATION TYPE 6
STRANDED WIRE

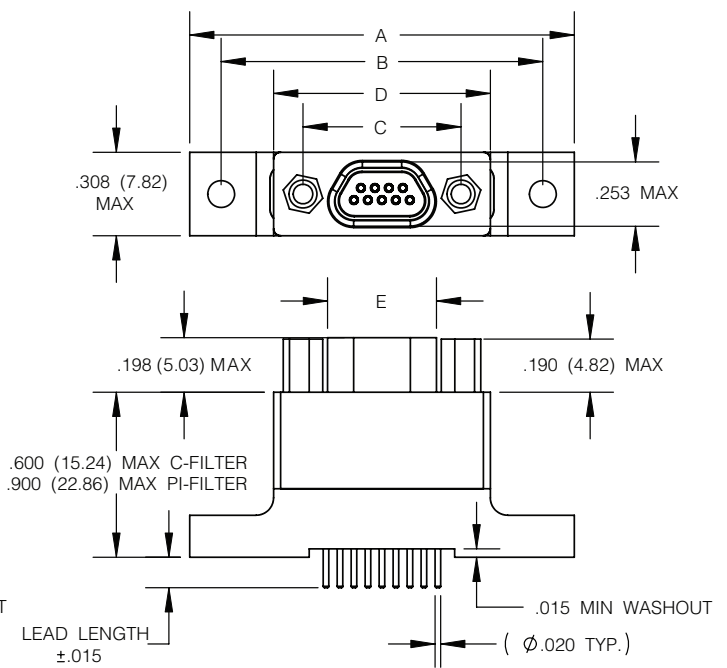
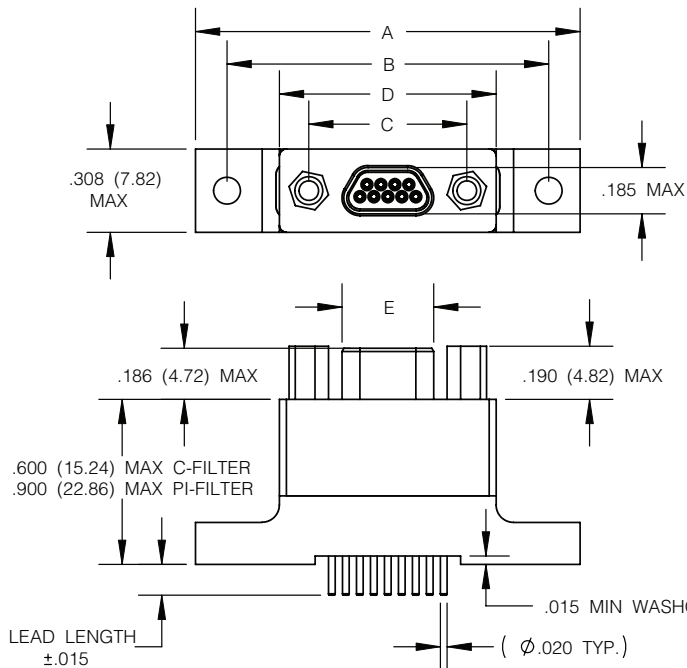
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PLUG

RECEPTACLE

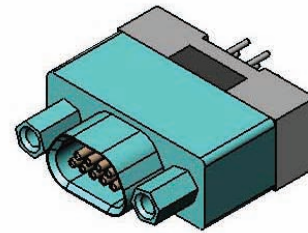
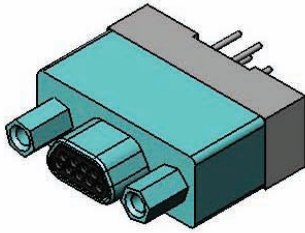
* INTERFACIAL SEAL INCLUDED



SIZE	A MAX	B ±.005 (0.13)	C ±.005 (0.13)	D MAX	E MAX	
					PLUG	RCPT
09	1.390 (35.31)	1.150 (29.21)	.565 (14.35)	.785 (19.84)	.334 (8.48)	.402 (10.21)
15	1.390 (35.31)	1.150 (29.21)	.715 (18.16)	.935 (23.75)	.484 (12.29)	.552 (13.97)
21	1.690 (43.93)	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 16 FOR STRAIGHT PC CONFIGURATIONS (REAR VIEW)

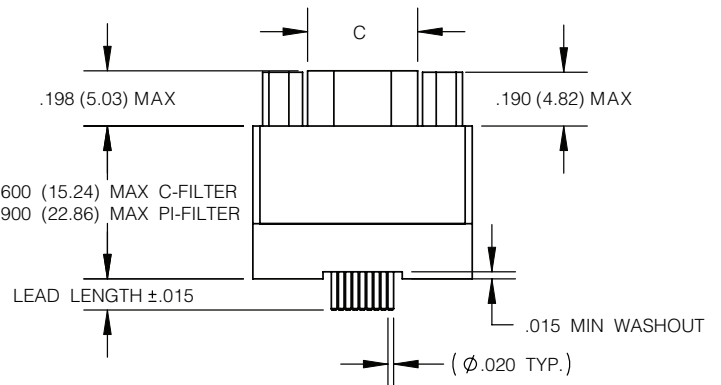
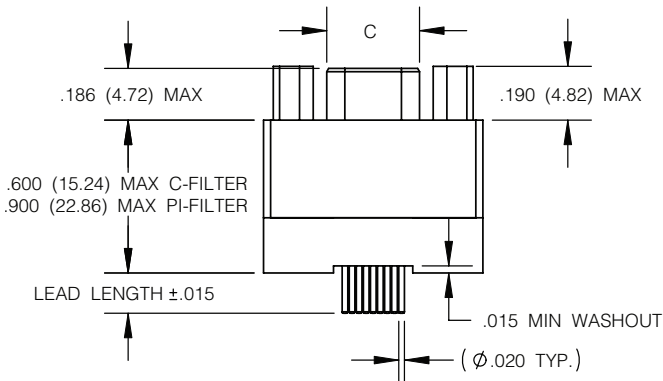
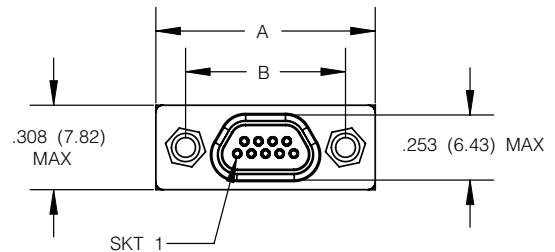
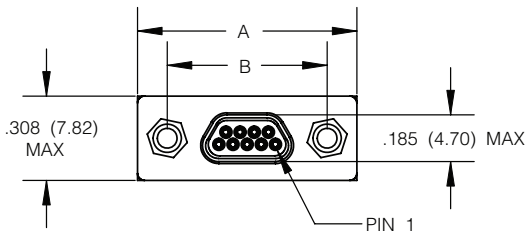
Series M13



PLUG

RECEPTACLE

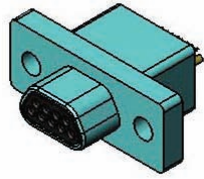
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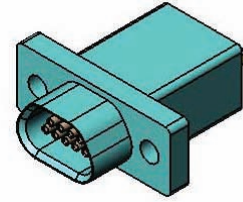
SIZE	A MAX	B ±.005 (0.13)	C MAX	
			PLUG	RCPT
09	.785 (19.94)	.565 (14.35)	.334 (8.48)	.402 (10.21)
15	.935 (23.75)	.715 (18.16)	.484 (12.29)	.552 (13.97)
21	1.085 (27.56)	.865 (21.97)	.634 (16.10)	.702 (17.83)
25	1.185 (30.10)	.965 (24.51)	.734 (18.64)	.802 (20.37)
31	1.335 (33.91)	1.115 (28.32)	.884 (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 23 FOR VERTICAL MOUNT PC CONFIGURATIONS (REAR VIEW)

Series M13

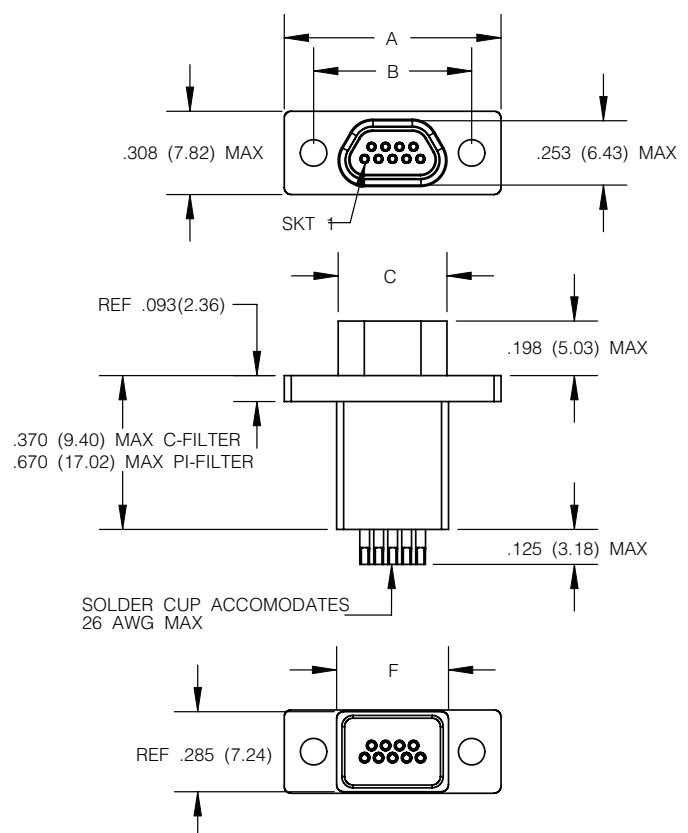
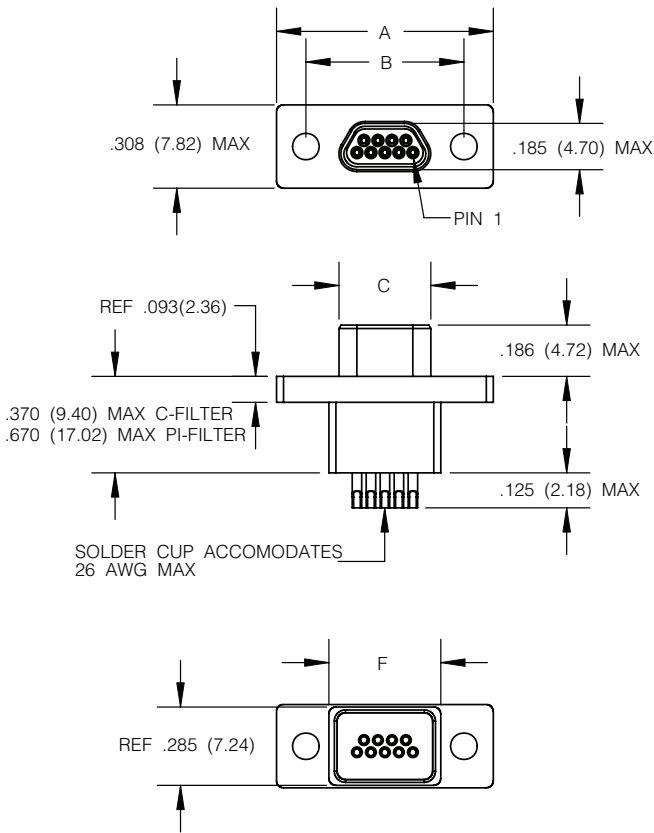


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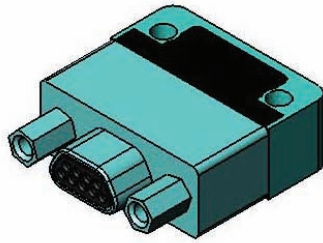
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* INTERFACIAL SEAL INCLUDED

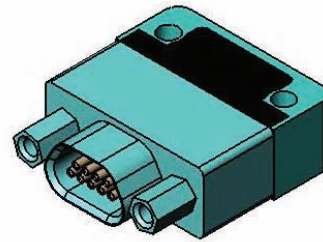


SIZE	A MAX	B ±.005 (0.13)	C MAX		F MAX
			PLUG	RCPT	
09	.785 (19.94)	.565 (14.35)	.334 (8.48)	.402 (10.21)	.400 (10.16)
15	.935 (23.75)	.715 (18.16)	.484 (12.29)	.552 (13.97)	.550 (13.97)
21	1.085 (27.56)	.865 (21.97)	.634 (16.10)	.702 (17.83)	.700 (17.78)
25	1.185 (30.10)	.965 (24.51)	.734 (18.64)	.802 (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)

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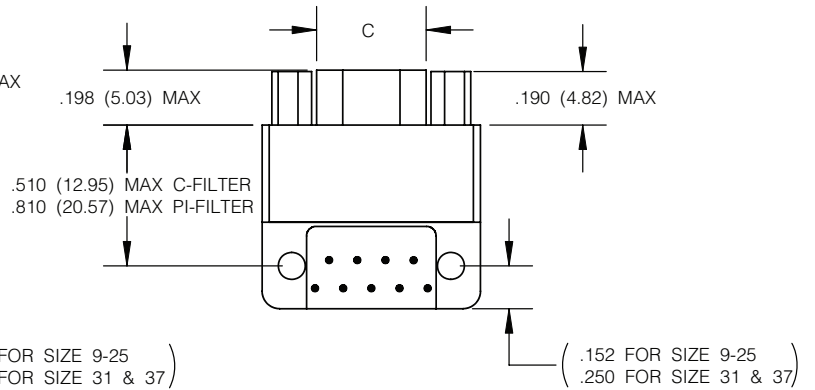
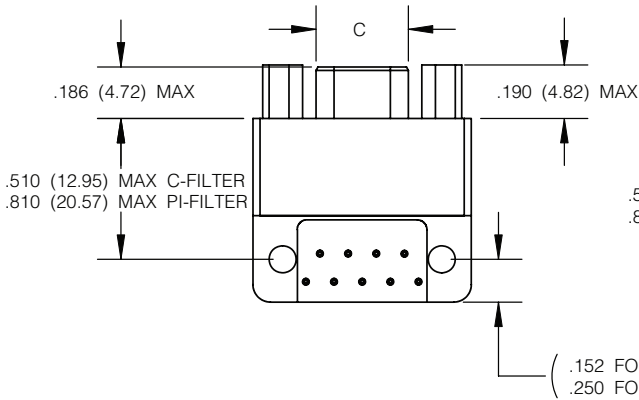
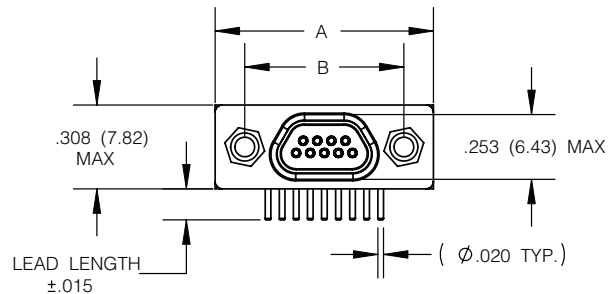
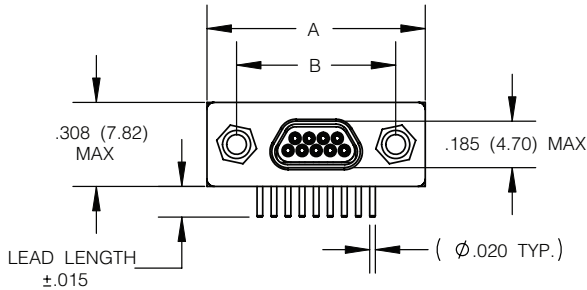


PLUG



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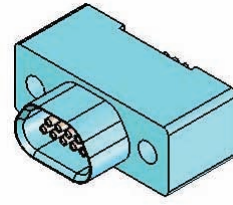
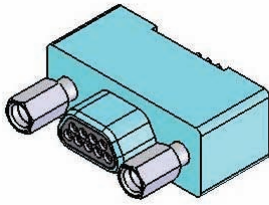
* INTERFACIAL SEAL INCLUDED



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			PLUG	RCPT
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15	.935 (23.75)	.715 (18.16)	.484 (12.29)	.552 (13.97)
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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 20 FOR RIGHT ANGLE (90 DEG) NARROW PROFILE PC CONFIGURATIONS

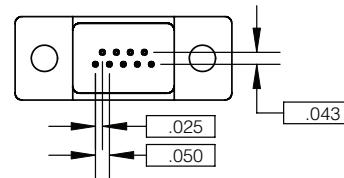
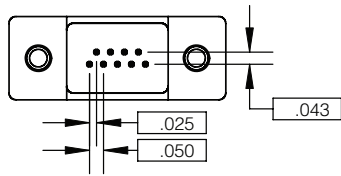
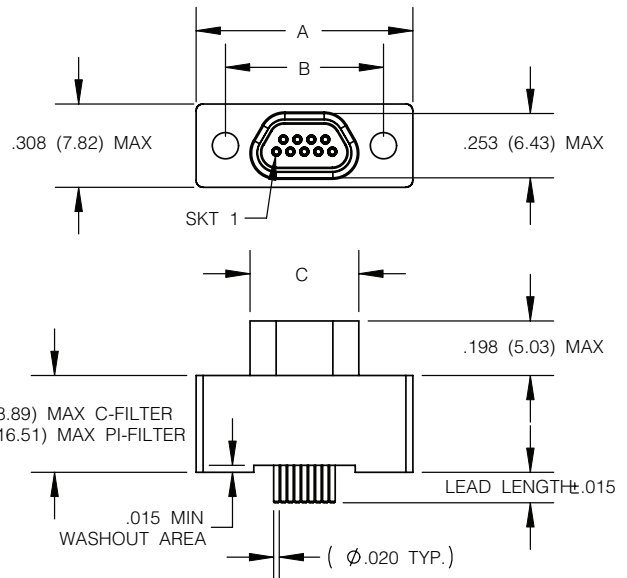
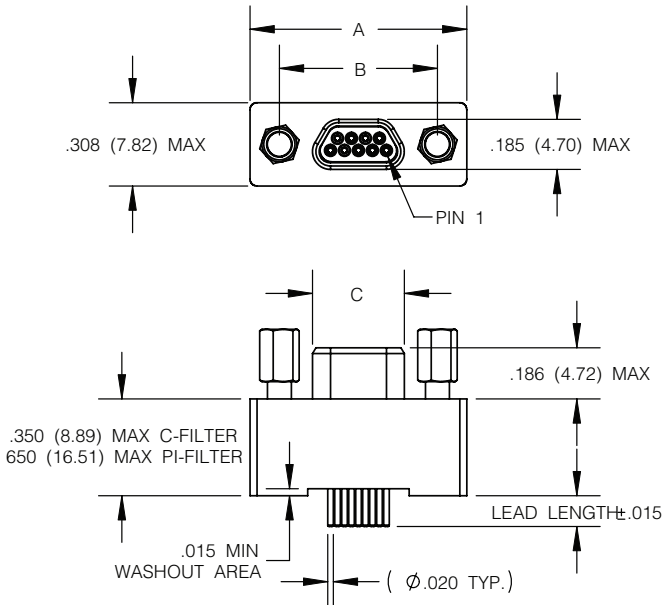
Series M13



PLUG

RECEPTACLE

* INTERFACIAL SEAL INCLUDED



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)
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37	1.485 (37.72)	1.265 (32.13)	1.034 (26.26)	1.102 (27.99)