

# Filter Rack & Panel Connectors



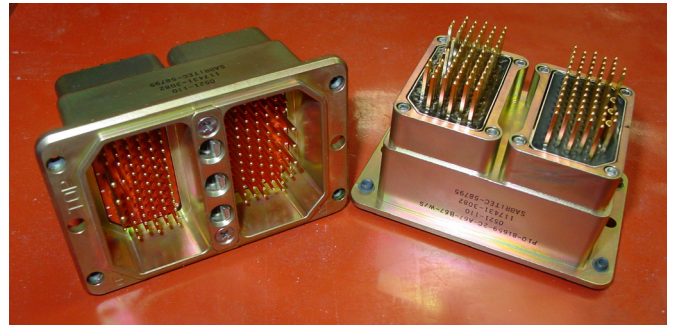
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# ARINC 404

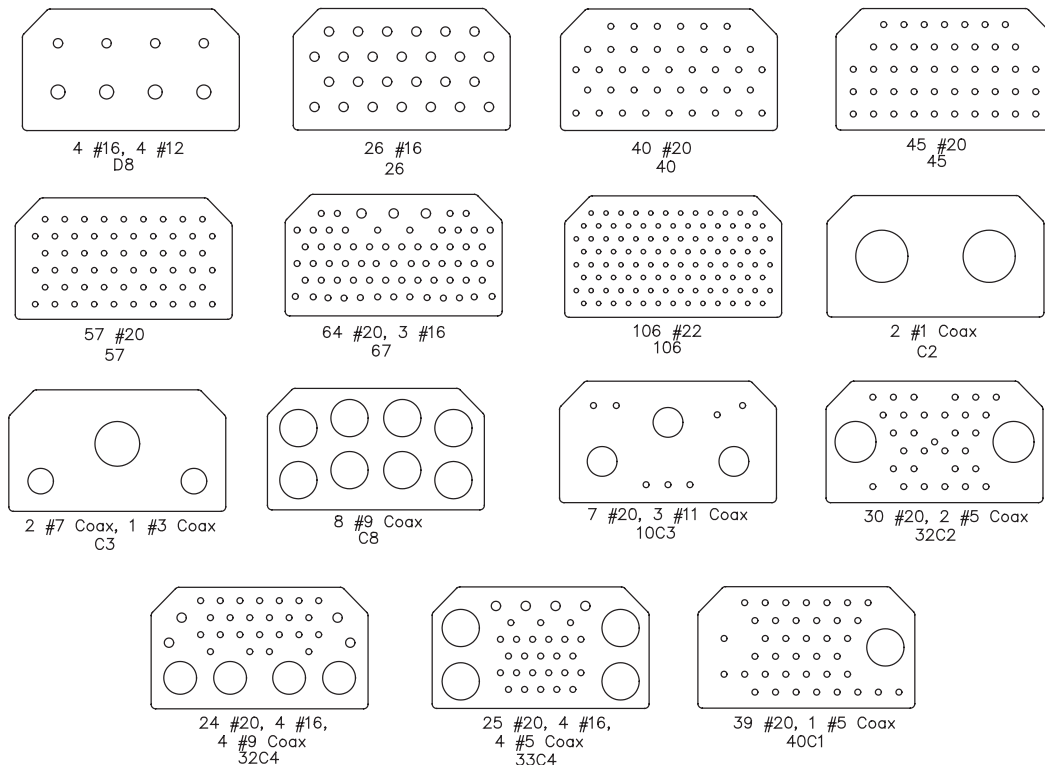
Smiths Interconnect ARINC 404 filter connectors are designed to meet or exceed all applicable requirements of the military specification. These connectors are intermateable and interchangeable with the standard non-filtered connectors.



## Material and Finishes

Shell	Aluminum alloy/Steel/Composite
Insulator	High grade plastic/epoxy
Contacts	Copper alloy, gold plate
Grommet & Seal	Silicon base elastomer
Ground Plane	Beryllium copper, silver plate
Capacitor	Barium Titanate
Inductor	Ferrite bead

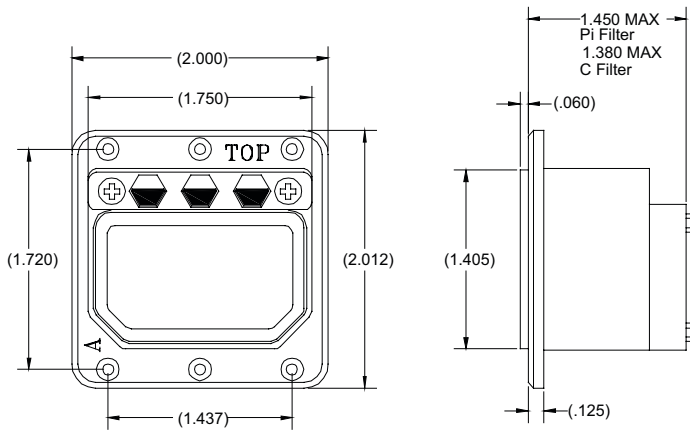
## Insert Arrangements



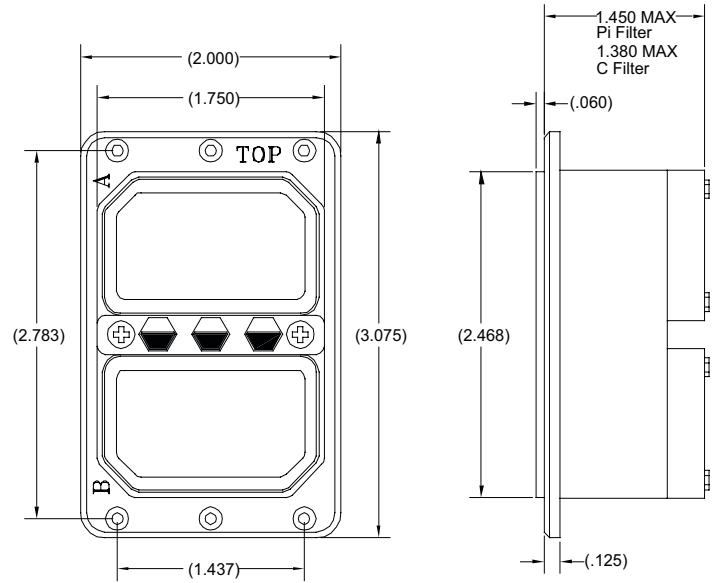
Smiths Interconnect provides specialty, enhanced performance connectors and cable assemblies and as such does not currently offer circular, rack and panel, or D-subminiature connectors that are listed on military standard Qualified Products Lists (QPL) per applicable detail specification sheets. Smiths Interconnect connectors are fully intermateable with applicable QPL products and meet the applicable requirements of all military standards listed in this catalog.

# ARINC 404

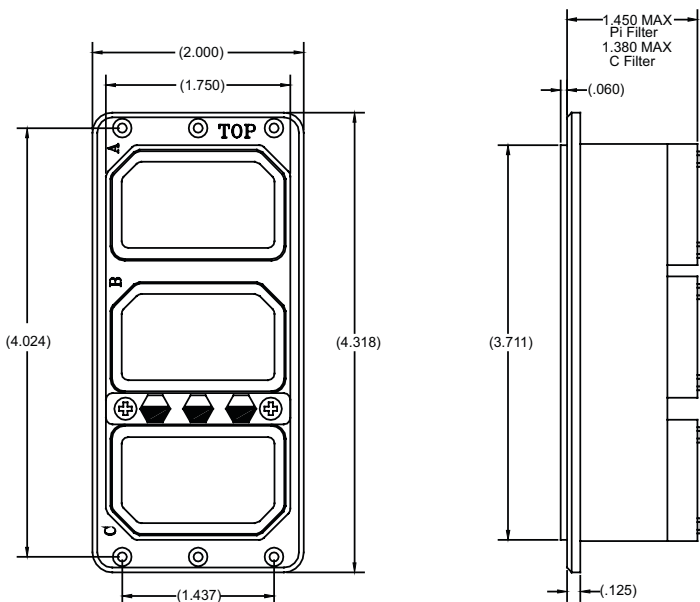
## Shell Size 1



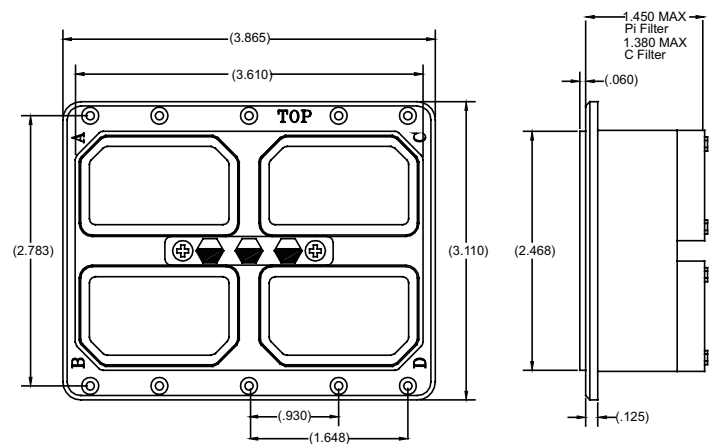
## Shell Size 2



## Shell Size 3

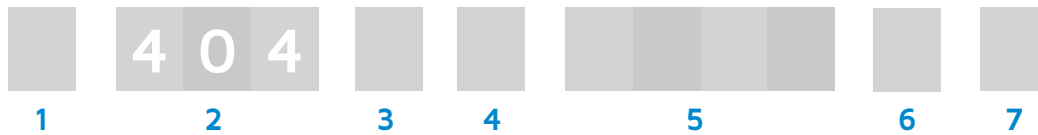


## Shell Size 4



# ARINC 404

## How to Order



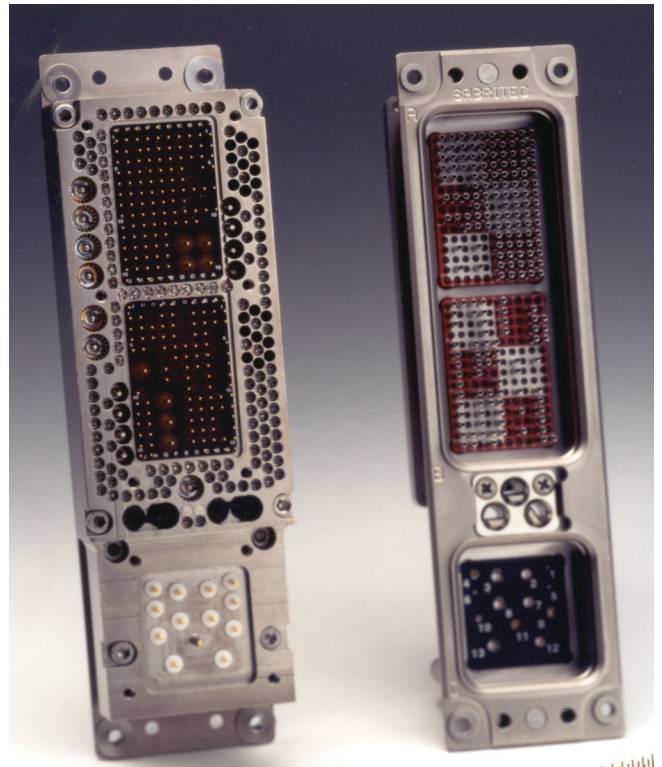
1 Filter Type	Pi, L, C,
2 Prefix	
3 Shell Size	1, 2, 3, 4
4 Plating	C Cadmium (Yellow Chromate) N Electroless Nickel
5 Insert Arrangement	Cavity A, B, C, D
6 Contact Type	P Pin S Socket
7 Contact Termination	S Solder Cup P PC Tail C Crimp

# ARINC 600

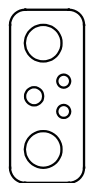
ARINC 600 filter connectors are designed to meet or exceed all applicable requirements of the specification. These connectors are intermateable and interchangeable with the standard non-filtered connectors.

## Material and Finishes

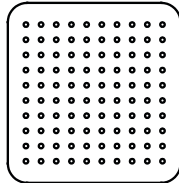
Shell	Aluminum alloy
Insulator	High grade plastic/epoxy
Contacts	Copper alloy, gold plate
Grommet & Seal	Silicon base elastomer
Ground Plane	Brass, Silver Plate
Capacitor	Barium Titanate
Inductor	Ferrite bead



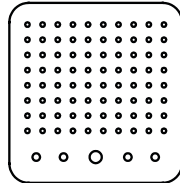
## Insert Arrangements



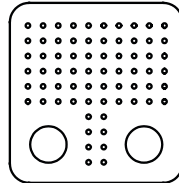
1 #12, 2 #16,  
2 #5 Coax  
5C2



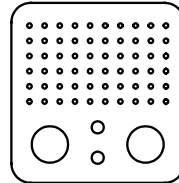
100 #22  
100



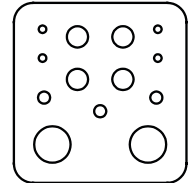
80 #22, 4 #20, 1 #16  
85



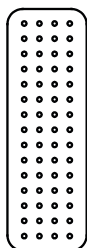
68 #22, 2 #8  
68Q2



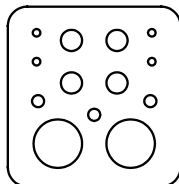
60 #22, 2 #16, 2 #8  
62Q2



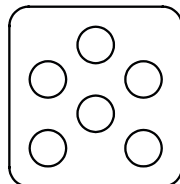
4 #20, 3 #16, 4 #12  
11Q2



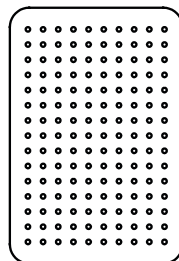
60 #22  
60



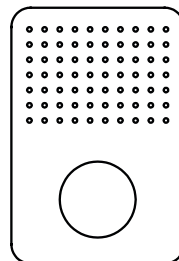
4 #20, 4 #12, 3 #16  
2 #5 Coax  
13C2



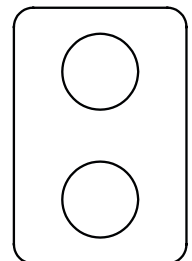
6 #8  
Q6  
Metallic Insert



150 #22  
150



70 #22, 1 #1 Coax  
150

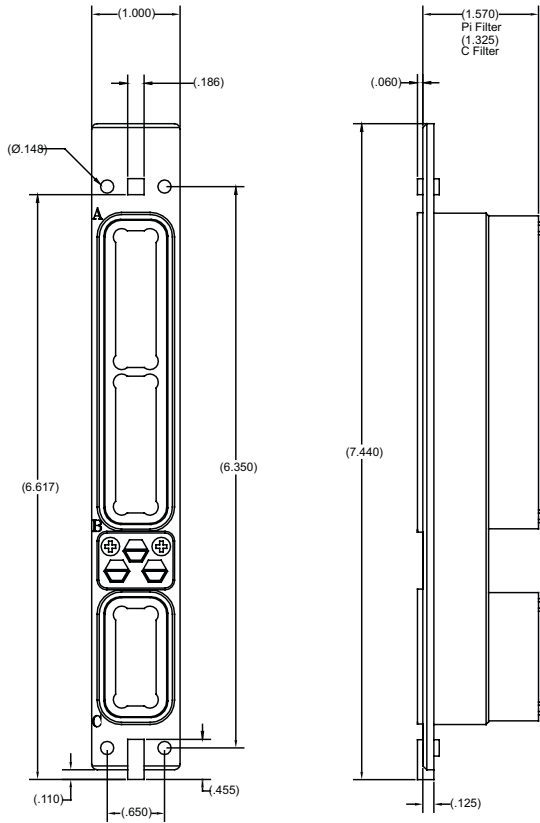


2 #1 Coax  
C2

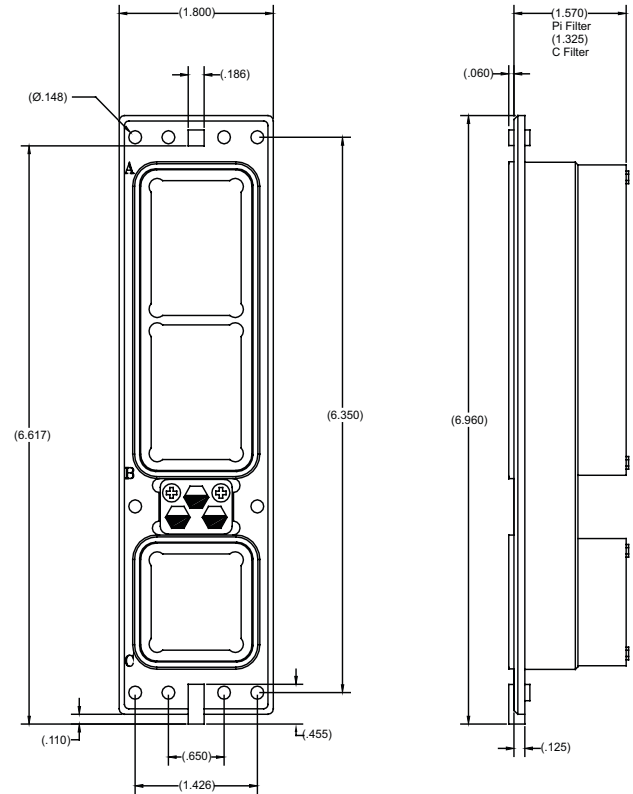
Smiths Interconnect provides specialty, enhanced performance connectors and cable assemblies and as such does not currently offer circular, rack and panel, or D-subminiature connectors that are listed on military standard Qualified Products Lists (QPL) per applicable detail specification sheets. Smiths Interconnect connectors are fully intermateable with applicable QPL products and meet the applicable requirements of all military standards listed in this catalog.

# ARINC 600

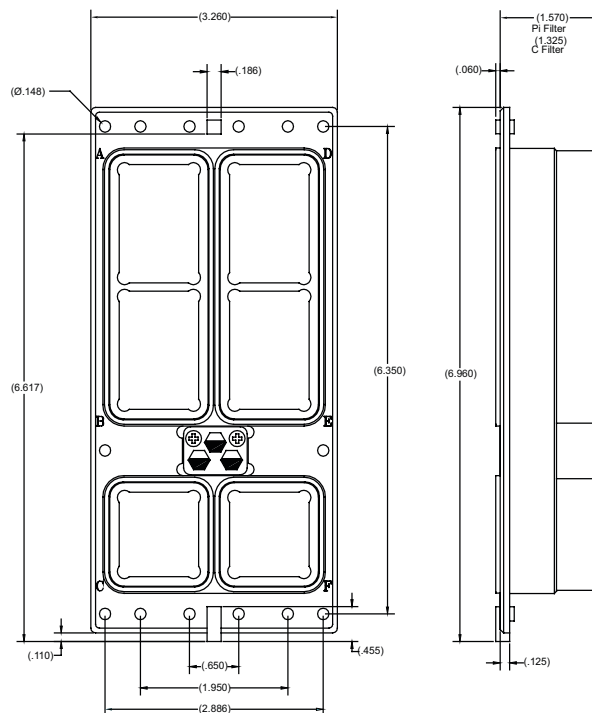
## Shell Size 1



## Shell Size 2

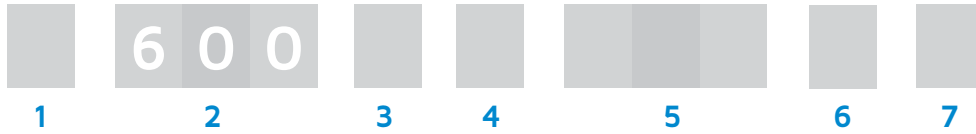


## Shell Size 3



# ARINC 600

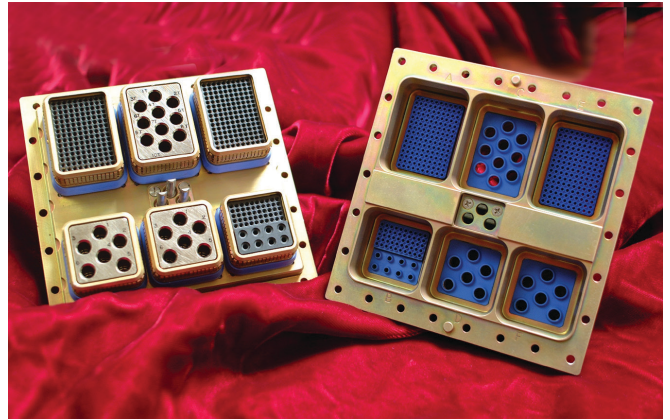
## How to Order



1 Filter Type	Pi, L, C,
2 Prefix	
3 Shell Size	1, 2, 3
4 Plating	C Cadmium (Yellow Chromate) N Electroless Nickel
5 Insert Arrangement	Cavity A, B, C, D, E, F
6 Contact Type	P Pin S Socket
7 Contact Termination	S Solder Cup P PC Tail C Crimp

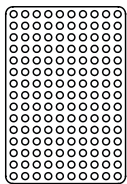


# MIL-DTL-83527

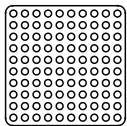


MIL-DTL-83527 connectors are designed to meet or exceed all applicable requirements of the military specification. These connectors come standard with anti-rotational keyed insert assemblies for filter, high-speed fibre channel or Ethernet twinax and quadrx contacts. Offered in a number of different contact arrangements and shell sizes, these connectors are intermateable and interchangeable with the standard non-filtered MIL-DTL-83527 connectors.

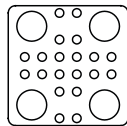
## Insert Arrangements



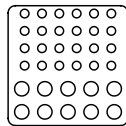
I-150  
150 #22



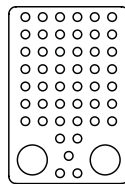
II-100  
100 #22



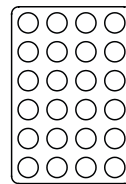
II-20T4  
20 #20  
4 #8 T/C



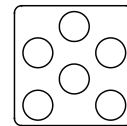
II-34  
24 #20  
10 #16



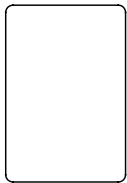
I-47T2  
47 #20  
2 #8 T/C



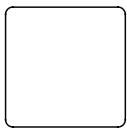
I-24  
24 #12



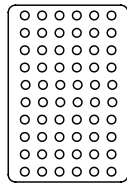
II-T6  
6 #8 T/C



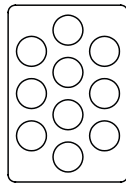
I-0  
BLANK  
CUSTOM



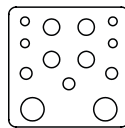
II-0  
BLANK  
CUSTOM



I-60  
60 #20



10P10  
10 #8 T/C



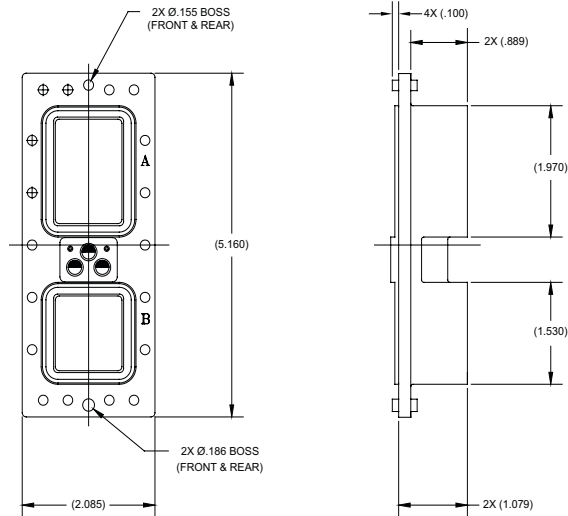
II-11C2  
4 #20  
3 #16  
4 #12  
2 #5

**For Size 8 Contacts Please Specify:**  
 T = Twinax/Quadrx Cavity (Anti-Rotational)  
 C = Coaxial/Triaxial Cavity

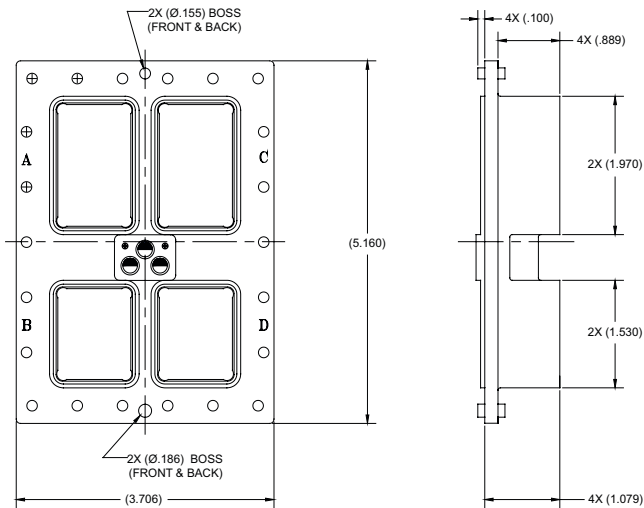
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# MIL-DTL-83527

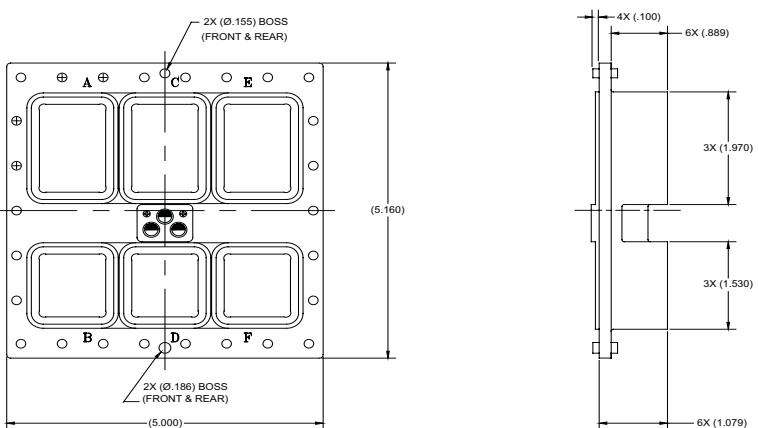
## Shell Size 2 Receptacle



## Shell Size 3 Receptacle



## Shell Size 4 Receptacle



# MIL-DTL-83527

## How to Order



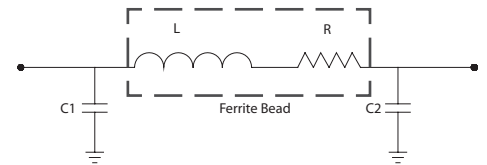
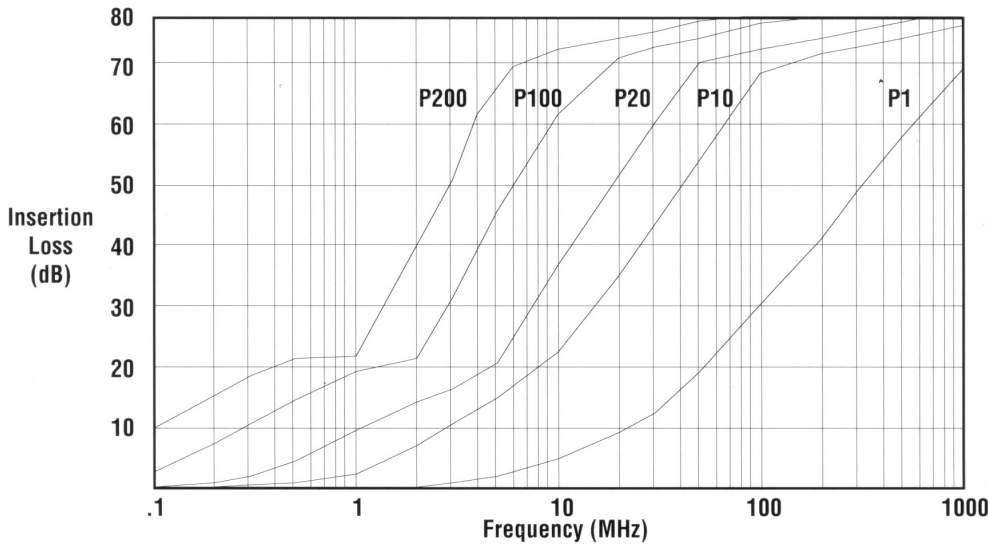
<b>1 Filter Type</b>	<input type="checkbox"/> Pi, <input type="checkbox"/> L, <input type="checkbox"/> C,
<b>2 Prefix</b>	
<b>3 Shell Size</b>	<input type="checkbox"/> 2 A, <input type="checkbox"/> 3 A, <input type="checkbox"/> 4 A
<b>4 Plating</b>	<input type="checkbox"/> C Cadmium (Yellow Chromate) <input type="checkbox"/> N Electroless Nickel
<b>5 Insert Arrangement</b>	Cavity <input type="checkbox"/> A, <input type="checkbox"/> B, <input type="checkbox"/> C, <input type="checkbox"/> D, <input type="checkbox"/> E, <input type="checkbox"/> F
<b>6 Contact Type</b>	<input type="checkbox"/> P Pin <input type="checkbox"/> S Socket
<b>7 Contact Termination</b>	<input type="checkbox"/> S Solder Cup <input type="checkbox"/> P PC Tail <input type="checkbox"/> C Crimp

# Electrical Performance

## Electrical Characteristics - 'Pi' Section

Filter Description	P200	P100	P76	P38	P20	P10	P8	P4	P2	P1	
Operating Temperature Range			-55°C to +125°C								
Voltage Rating	100 VDC		200 VDC-120 Vrms 400 Hz								
Current Rating DC			15 amps size 16 7.5 amps size 20 5 amps size 22								
Insulation Resistance			5000 megaohms min. @100 VDC								
Current Rating RF			3.0 amps max.								
DWV Sea Level w/ 50 micro-amps max. charge/discharge	250 VDC		500 VDC								

### 'Pi' Section Curves



### Insertion Loss Table

Filter Description	See Notes	P200	P100	P76	P38	P20	P10	P8	P4	P2	P1
Capacitance in Nanofarads @ 1Khz, 1VRMS		160 240	80 120	60 91	30 46	16 24	8 12	6.4 9.2	3.2 4.8	1.6 2.4	0.8 1.2
Minimum No Attenuation loss @ 25°	Freq Mhz										
	0.1	8	4.1	3	1	0.3	0.1	-	-	-	-
	1.0	22.2	19.6	18.2	13.3	8.2	3.9	2.9	0.9	0.2	-
	2	32.8	21.7	19.7	16.8	12.7	8	6.6	2.9	1	0.3
	10	73.5	61	57	44.4	31.5	20.6	18.3	12.8	8.1	4.0
	100	85+	85+	85+	85+	78	65.8	61.9	49.6	37.3	25.6
	500-1k	85+	85+	85+	85+	85+	85+	80	75	64	52

Notes:

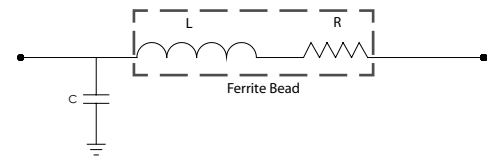
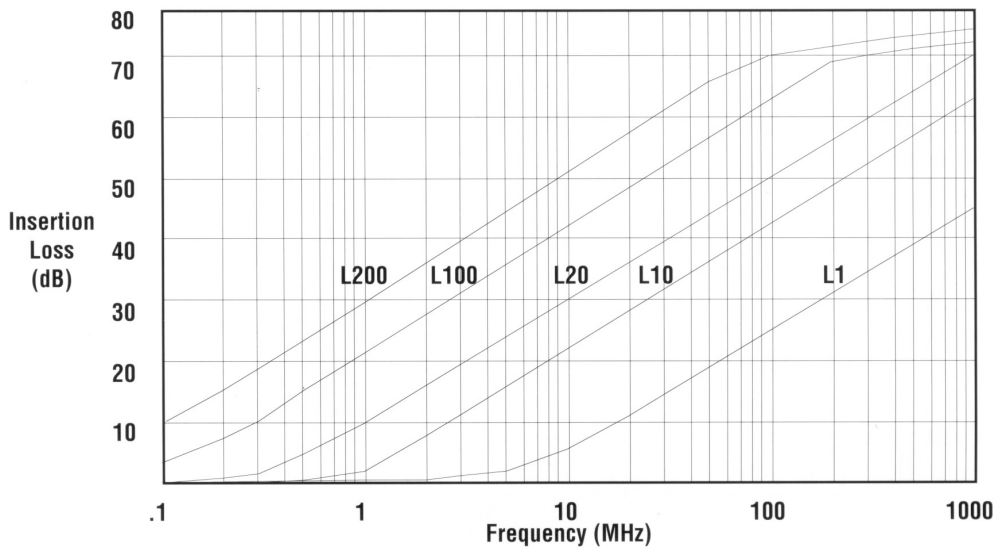
1. P200 & P100 Capacitance Values for Size 20 Contact Arrangement & Larger
2. No Load Minimum Attenuation Values per MIL-STD-220
3. Capacitance in Nanofarads (Nominal Value)
4. Consult Factory for Higher Voltages & Capacitance Values

# Electrical Performance

## Electrical Characteristics - 'L' Section

Filter Description	L200	L100	L76	L38	L20	L10	L8	L4	L2	L1
Operating Temperature Range				-55°C to +125°C						
Voltage Rating	100 VDC			200 VDC-120 Vrms 400 Hz						
Current Rating DC				15 amps size 16 7.5 amps size 20 5 amps size 22						
Insulation Resistance				5000 megaohms min. @100 VDC						
Current Rating RF				3.0 amps max.						
DWV Sea Level w/ 50 micro-amps max. charge/discharge	250 VDC			500 VDC						

## 'L' Section Curves



## Insertion Loss Table

Filter Description	See Notes	L200	L100	L76	L38	L20	L10	L8	L4	L2	L1
Capacitance in Nanofarads @ 1Khz, 1VRMS		160 240	80 120	60 91	30 46	16 24	8 12	6.4 9.2	3.2 4.8	1.6 2.4	0.8 1.2
	0.1	8.6	4.1	3	1	0.3	0.1	-	-	-	-
	1.0	28	22	20.1	14.2	8.6	4	3	0.9	0.2	-
	2	34.3	28.3	26.3	20.3	14.4	8.8	7.2	3.1	1	-
	10	49	43	41.1	35	29	23	21.1	15.1	9.5	4.8
	100	69.9	63.9	62	55.9	49.9	43.9	42	35.9	29.9	23.9
	500-1k	83.7	77.7	75.8	69.7	63.7	57.7	55.8	49.7	43.7	37.7

**Notes:**

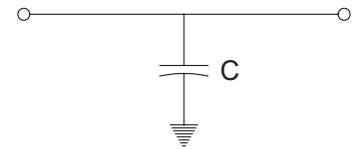
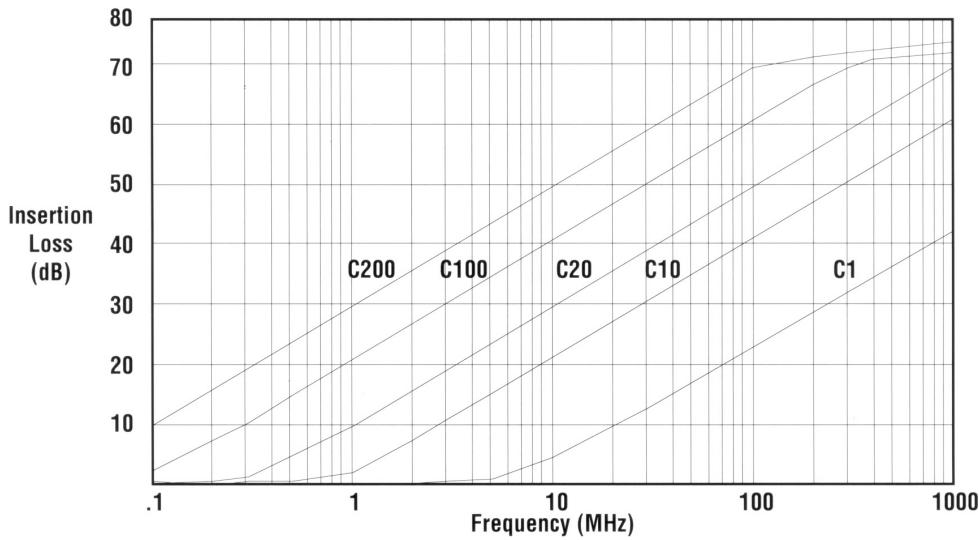
1. L200, L100 & L76 Capacitance Values for Size 20 Contact Arrangement & Larger
2. No Load Minimum Attenuation Values per MIL-STD-220
3. Capacitance in Nanofarads (Nominal Value)
4. Consult Factory for Higher Voltages & Capacitance Values

# Electrical Performance

## Electrical Characteristics - 'C' Section

Filter Description	C200	C100	C76	C38	C20	C10	C8	C4	C2	C1
Operating Temperature Range	-55°C to +125°C									
Voltage Rating	100 VDC									
Current Rating DC	200 VDC-120 Vrms 400 Hz									
Insulation Resistance	15 amps size 16 7.5 amps size 20 5 amps size 22									
Current Rating RF	5000 megaohms min. @100 VDC									
DWV Sea Level w/ 50 micro-amps max. charge/discharge	3.0 amps max.									
	250 VDC					500 VDC				

## 'C' Section Curves



## Insertion Loss Table

Filter Description	See Notes	C200	C100	C76	C38	C20	C10	C8	C4	C2	C1
Capacitance in Nanofarads @ 1Khz, 1VRMS		160 240	80 120	60 91	30 46	16 24	8 12	6.4 9.2	3.2 4.8	1.6 2.4	0.8 1.2
Minimum No Attenuation loss @ 25°	Freq Mhz										
	0.1	8.6	4.1	3	1	0.3	0.1	-	-	-	-
	1.0	28	22	20.1	14.2	8.6	4.1	3	1	0.3	0.1
	2	34	28	26.1	20.1	14.2	8.6	7	3	1	0.3
	10	48	42	40	34	28	22	20.1	14.2	8.6	4.1
	100	68	62	60	54	48	42	40	34	28	22
500-1k	82	76	74	68	62	56	54	48	42	36	

- Notes:
1. C200, C100 & C76 Capacitance Values for Size 20 Contact Arrangement & Larger
  2. No Load Minimum Attenuation Values per MIL-STD-220
  3. Capacitance in Nanofarads (Nominal Value)
  4. Consult Factory for Higher Voltages & Capacitance Values

# Performance Data

Smiths Interconnect connectors conform to the applicable military specifications and standards for materials, finishes and mechanical form, fit, and function. Filter connectors are fully intermateable and interchangeable in most instances with standard non-filtered QPL MIL-SPEC connectors.

## Material and Finishes

<b>Shell &amp; Jam Nut</b>	Aluminum Alloy Electroless Nickel per MIL-C-26074
<b>Pin Contacts</b>	Brass per ASTM B16 Gold Plate per MIL-G-45204
<b>Socket &amp; Contacts</b>	Copper Alloy Gold Plate per MIL-G-45204
<b>Insulators</b>	High Grade Plastic/Epoxy
<b>Seal &amp; Grommet</b>	Silicon Base Elastomer



## Production Automation Test System Measurements

	Range	Accuracy	Notes
Capacitance	1 pF-1 $\mu$ F	0.2% + 0.1 pF	1
DF	0.00001-10	1%	2
Inductance	100 nH-10KH	0.2%+10 nH	1
IR	1 K Ohm - 5 T Ohm	1%	3,4,5
DWV	10 pA-100 mA	1%+10 pA	3,4,6
VR	10 mV-100V	0.2% + 10 mV	7
Ground & Contact Resistance	0.1 mV-1V	0.1%+0.1 mV	7

### Notes:

1. Frequency = 20 Hz to 1 MHz
2. Dissipation factor
3. With 5-500 Volts applied
4. Measures each pin to all other pins grounded to shell
5. Insulation resistance
6. Dielectric withstanding voltage
7. Isource = 1nA-1A

## Performance Data

Smiths Interconnect Filter Connectors meet or exceed the applicable requirements of the following specifications:

**MIL-DTL-38999**                      **MIL-C-26482**  
**MIL-DTL-83723**                    **MIL-DTL-26500**  
**MIL-DTL-24308**                    **MIL-DTL-83723**  
**MIL-DTL-83513**                    **MIL-C-81511**  
**MIL-DTL-83527**                    **ARINC 600**  
**ARINC 404 (MIL-C-81659)**

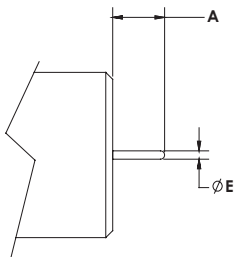
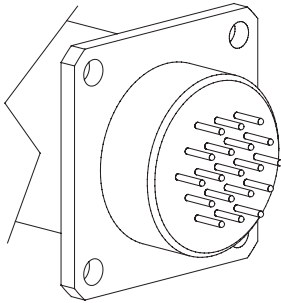
Smiths Interconnect connectors can meet qualification requirements of MIL-DTL-38999, MIL-C-26482, ARINC 404 (MIL-C-81659), and ARINC 600. Smiths Interconnect can perform most test requirements in-house. This includes both electrical and mechanical testing for qualification, engineering evaluation and final acceptance. All products are available for space grade applications.

All specifications subject to change without notice.

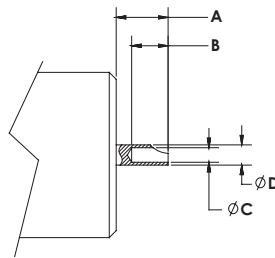
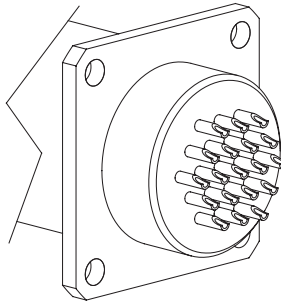
Smiths Interconnect provides specialty, enhanced performance connectors and cable assemblies and as such does not currently offer circular, rack and panel, or D-subminiature connectors that are listed on military standard Qualified Products Lists (QPL) per applicable detail specification sheets. Smiths Interconnect connectors are fully intermateable with applicable QPL products and meet the applicable requirements of all military standards listed in this catalog.

# Contact Termination

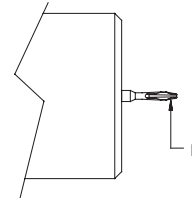
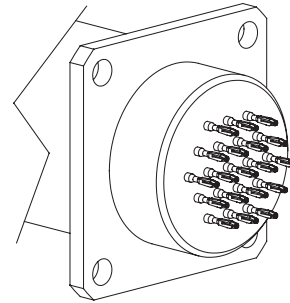
PC TAIL



SOLDER CUP

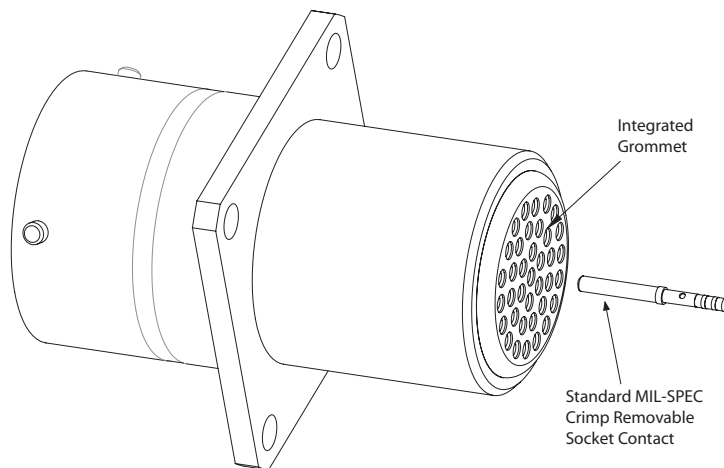


COMPLIANT PRESS-FIT (SOLDERLESS)



Contact Size	A +.025	B	C	D	E +.003	F
22	0.175	0.125 0.094	0.040 0.035	0.055 0.051	0.020	PCB Finished Hole 0.026 + 0.002
20		0.156 0.125	0.048 0.042	0.088 0.061	0.030	
16		0.172 0.141	0.082 0.069	0.103 0.097	0.050	Consult factory for alternate size
12		0.120 0.112	0.142 0.136	0.065		

Crimp / Removable\*



\* Add 0.700" to overall length for crimp removable connector with integrated grommet.



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