

**Mil-Con Filtered and Custom Connectors**

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# FILTERED AUDIO SERIES

## C TYPE FILTERS

**SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE**  
 CONNECTOR MEETS ALL REQUIREMENTS OF MIL-C-55116, LATEST REVISION.

### MATERIALS

Shell and Panel Nut: Stainless Steel, Class 303 per ASTM A 582.  
 Contacts and Terminals: Copper Alloy per ASTM B 16.  
 Insulator: Diallyl Phthalate per MIL-M-14, Type MDG.

### MECHANICAL

Air Pressure: 2.5 P.S.I.  
 Water Immersion: 48 Hours at 6 Feet.  
 Durability: 3000 Cycles, Mate and Unmate.

### FINISHES/COLORS

Shell and Panel Nut: Passivated, Sand Blasted.  
 Insulator: Blue.

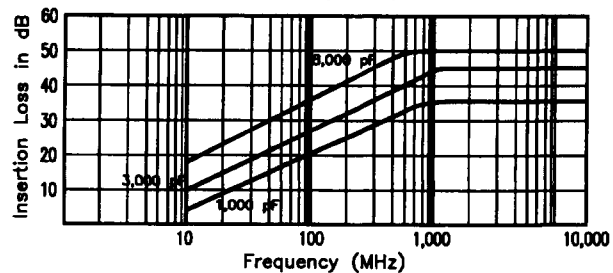
Contacts and Terminals:  
 .000030 Gold per MIL-G-45204, Type 1,  
 Class 0; over Nickel per QQ-N-290.

### ELECTRICAL (FILTERING)

Capacitance Code	-010	-026	-051
Filter Type	C	C	C
Shell Type	FIG 1. Pg. 216		
Capacitance 77° F (25° C), 0.1 V RMS, 1 KHz ± .1	1000 pF Typ.	3000 pF Max.	8000 pF Typ.
Working Voltage	100 VDC	100 VDC	100 VDC
Dielectric Withstanding Voltage	300 VDC	300 VDC	300 VDC
Insulation Resistance Min. At 77° F (25° C)	10000 Megohms Min.	10000 Megohms Min.	5000 Megohms Min.
Insertion Loss (Typical) per MIL-STD-220 77° F (25° C), No Load	1 MHz	-	-
	10 MHz	-	-
	50 MHz	-	20 dB Min.
	100 MHz	20 dB Min.	25 dB Min.
	250 MHz	30 dB Min.	30 dB Min.
1 GHz	35 dB Min.	45 dB Min.	50 dB Min.
R.F. Current (Maximum)	0.25 Amps		
Operating Temperature Range ° F (° C)	-67° F to +185° F (-55° C to +85° C)		

**Typical Insertion Loss Curves for C Type Filters  
(50-Ohm System)**

**Schematic Drawing  
of  
C Filter**



# FILTERED AUDIO SERIES

## Pi TYPE FILTERS

**SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE**  
 CONNECTOR MEETS ALL REQUIREMENTS OF MIL-C-55116, LATEST REVISION.

### MATERIALS

Shell and Panel Nut: Stainless Steel, Class 303 per ASTM A 582.  
 Contacts and Terminals: Copper Alloy per ASTM B 16.  
 Insulator: Diallyl Phthalate per MIL-M-14, Type MDG.

### MECHANICAL

Air Pressure: 2.5 P.S.I.  
 Water Immersion: 48 Hours at 6 Feet.  
 Durability: 3000 Cycles, Mate and Unmate.

### FINISHES/COLORS

Shell and Panel Nut: Passivated, Sand Blasted.  
 Insulator: Blue.

Contacts and Terminals:  
 .000030 Gold per MIL-G-45204, Type 1,  
 Class 0; over Nickel per QQ-N-290.

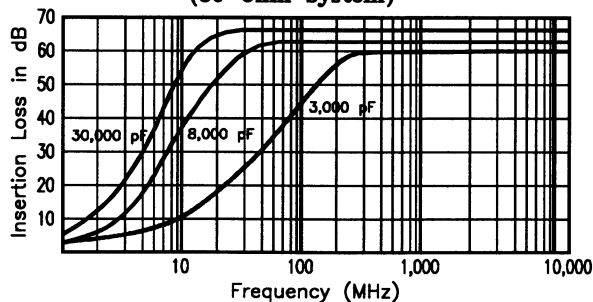
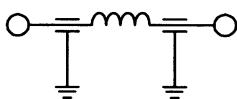
### ELECTRICAL (FILTERING)

Capacitance Code	-025	-050	-220*	-300*
Filter Type	Pi	Pi	Pi	Pi
Shell Type	FIG 1. Pg. 216	FIG 2. Pg. 216		
Capacitance 77° F (25° C), 0.1 V RMS, 1 KHz ± .1	3000 pF Max.	8000 pF Typ.	22000 pF Typ.	30000 pF Typ.
Working Voltage	100 VDC	100 VDC	100 VDC	100 VDC
Dielectric Withstanding Voltage	300 VDC	300 VDC	300 VDC	300 VDC
Insulation Resistance Min. At 77° F (25° C)	10000 Megohms Min.	10000 Megohms Min.	5000 Megohms Min.	5000 Megohms Min.
Insertion Loss (Typical) per MIL-STD-220 77° F (25° C), No Load	1 MHz - 10 MHz - 50 MHz - 100 MHz 30 dB Min. 250 MHz 50 dB Min. 1 GHz 50 dB Min.	4 dB Min. 25 dB Min. 60 dB Min. 60 dB Min. 60 dB Min. 60 dB Min.	- - - 55 dB Min. 55 dB Min. 60 dB Min.	- 30 dB Min. 60 dB Min. 60 dB Min. 60 dB Min. 60 dB Min.
R.F. Current (Maximum)	0.25 Amps			
Operating Temperature Range ° F (° C)	-67° F to +185° F (-55° C to +85° C)			

\* CONSULT FACTORY FOR AVAILABILITY

**Typical Insertion Loss Curves for Pi Type Filters  
(50-Ohm System)**

**Schematic Drawing  
of  
Pi Filter**



# FILTERED AUDIO CONNECTORS

## Part Number Selection System

To order a Filtered Connector, please fill in the blanks to determine your part number.

**MC 83F - X - X X X - X**

**Connector Configuration:** \_\_\_\_\_

- 1 = 5-Position
- 2 = 6-Position

**Wiring Code:** \_\_\_\_\_

- 1 = "A" Pin Grounded, Unfiltered
- 3 = All Pins Filtered

**Capacitance Codes:** \_\_\_\_\_

"Pi" Filters	"C" Filters
<b>025</b> = 3000 Pf	<b>010</b> = 1000 Pf
<b>050</b> = 8000 Pf	<b>026</b> = 3000 Pf
<b>220</b> = 22000 Pf	<b>051</b> = 8000 Pf
<b>300</b> = 30000 Pf	

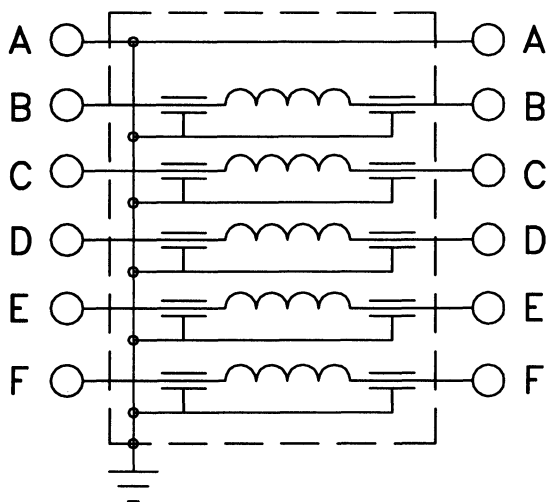
**PCB Termination Style Modifier\*** \_\_\_\_\_

(See Table 1 and Table 2 on the Following Page)

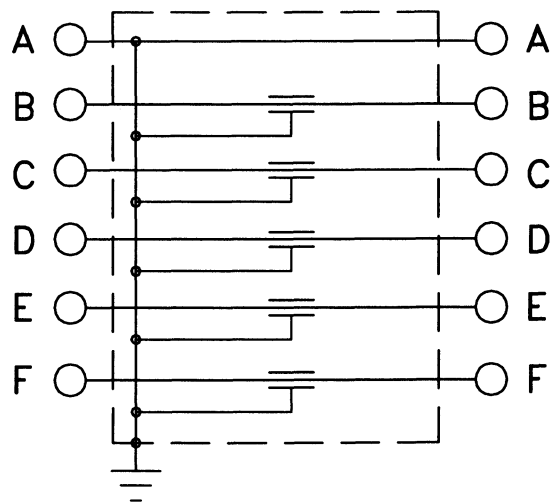
\* Consult Factory for Designation Part Number

## WIRING DIAGRAM SAMPLE

Option Shown is Wiring Code: -1



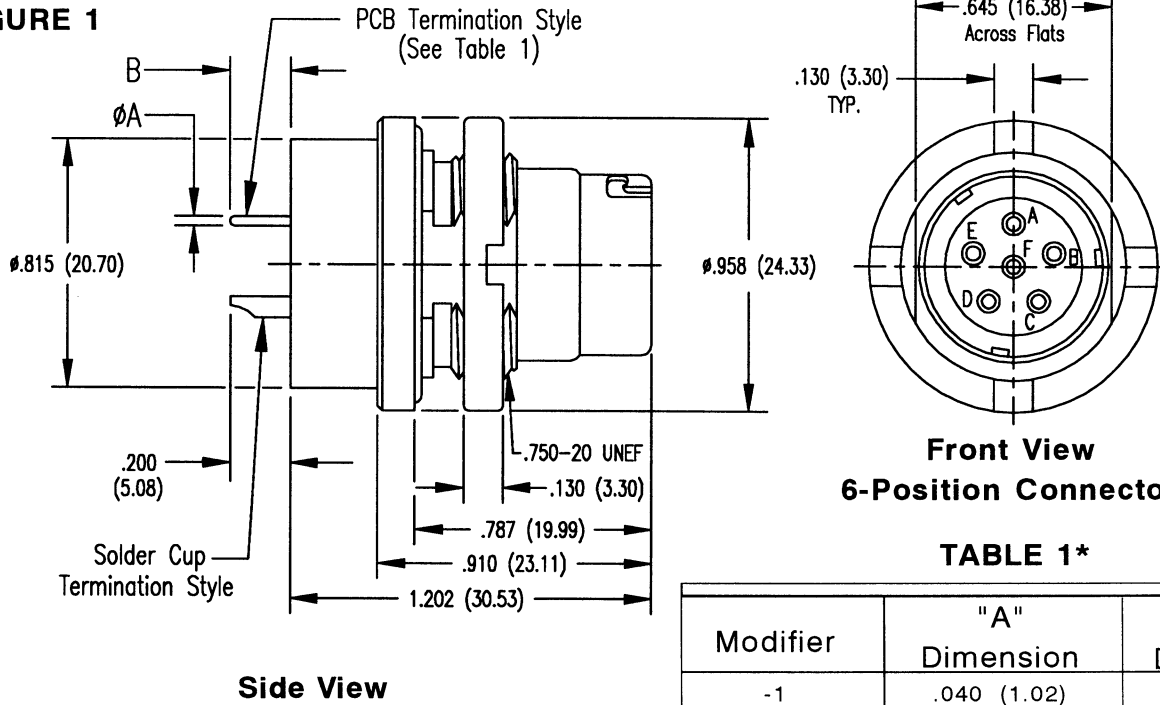
**Pi FILTER**



**C FILTER**

# SHELL TYPE DIMENSIONS

**FIGURE 1**



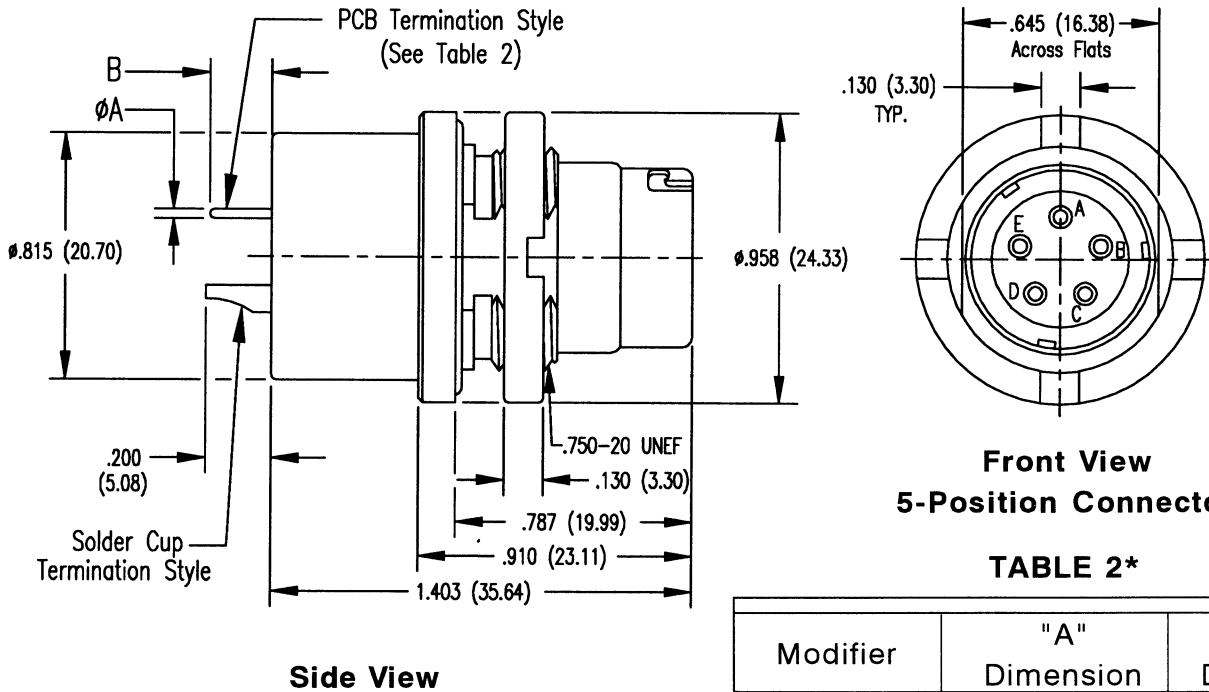
**Front View  
6-Position Connector**

**TABLE 1\***

Modifier	"A" Dimension	"B" Dimension
-1	.040 (1.02)	.140 (3.56)
-2	.040 (1.02)	.110 (2.79)
-4	.030 (0.76)	.150 (3.81)

\*Consult factory for other PCB termination styles and availability

**FIGURE 2**



**Front View  
5-Position Connector**

**TABLE 2\***

Modifier	"A" Dimension	"B" Dimension
-1	.030 (0.76)	.150 (3.81)
-2	.040 (1.02)	.110 (2.79)

\*Consult factory for other PCB termination styles and availability

# CUSTOM MIL-CON CONNECTORS

## 7 AND 19 POSITION

### SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

#### MATERIALS

Shell and Panel Nut: Stainless Steel, Class 303 per ASTM A582.  
 Contacts and Terminals: Copper Alloy per ASTM B 16.  
 Insulator: Diallyl Phthalate per MIL-M-14, Type MDG.  
 Gaskets and O-Rings: Rubber per ASTM D2000.

#### MECHANICAL

Air Pressure: 2.5 P.S.I.  
 Water Immersion: 48 Hours at 6 Feet.  
 Durability: 3000 Cycles, Mate and Unmate.

#### FINISHES/COLORS

Shell and Panel Nut: Passivated, Sand Blasted.  
 Insulator: Blue.  
 Gaskets and O-Rings: Black  
 Contacts and Terminals: .000030 Gold per MIL-G-45204, Type 1, Class 0; over Nickel per QQ-N-290.

#### ELECTRICAL

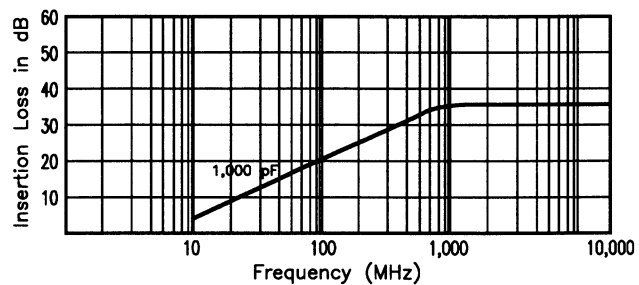
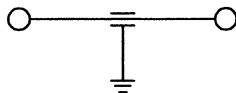
Operating Voltage: 60 Volts Maximum Potential.	Contact Resistance (Mated): 0.15 Ohm Maximum
Dielectric Breakdown: 500 Volts RMS.	Operating Temperature Range: -67° F to +185° F
Insulation Resistance: 1000 Megohms Minimum.	(-55° C to +85° C.)
Current Rating: 0.5 Amps Maximum.	

#### ELECTRICAL (FILTERED CONNECTORS ONLY)

Filter Type: C.	Insertion Loss (MIL-STD-220, No Load, 25° C):
Capacitance (1 KHz, 25° C): 1000 pF.	13 Db Minimum at 100 MHz.
Working Voltage: 50 VDC.	22 Db Minimum at 250 MHz.
Dielectric Withstanding Voltage: 150 VDC.	R.F. Current (Maximum): 0.25 Amps.
Insulation Resistance (150 VDC, 25° C): 1000 Megohms Minimum.	

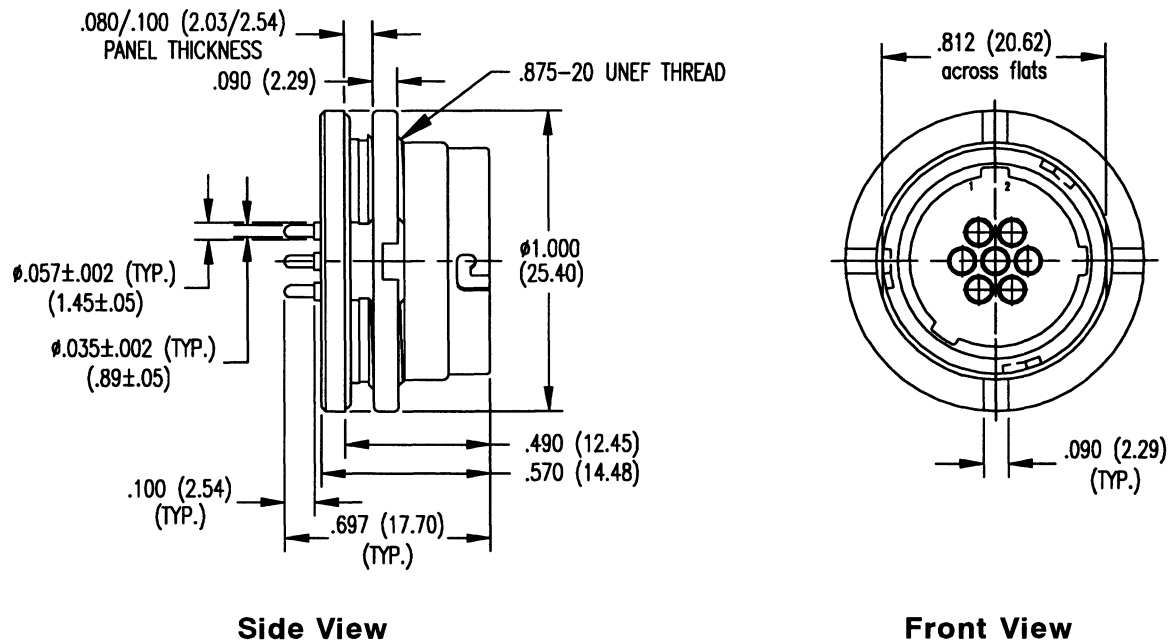
Typical Insertion Loss Curve for C Type Filters  
(50-Ohm System)

Schematic Drawing  
of  
C Filter

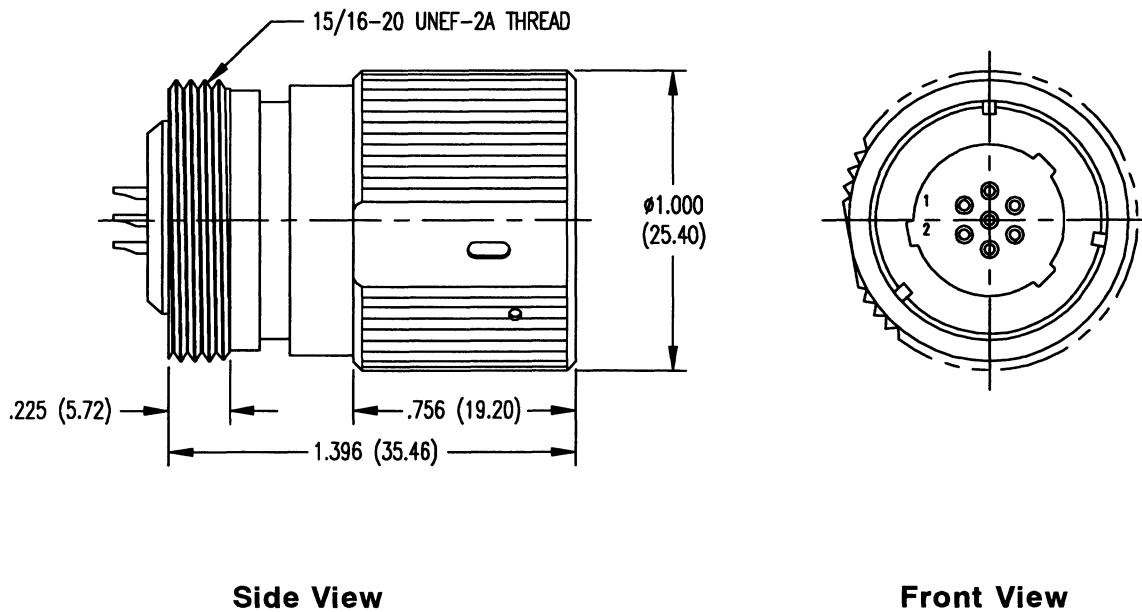


# CUSTOM MIL-CON CONNECTORS 7 POSITION

## 7 Position, Receptacle, Filtered

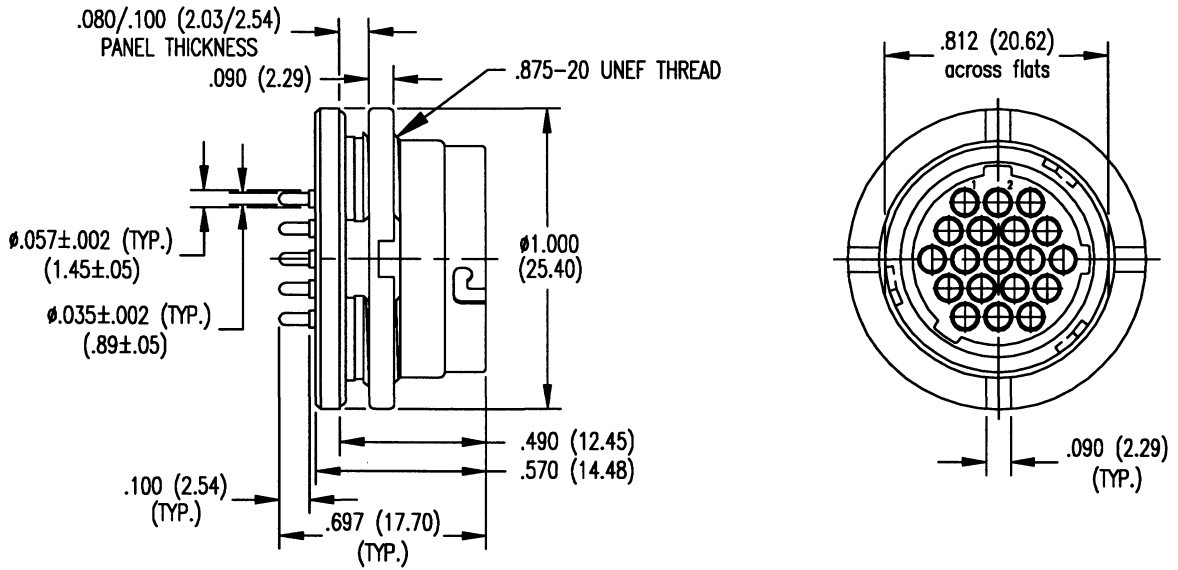


## 7 Position, Plug, Non-Filtered



# CUSTOM MIL-CON CONNECTORS 19 POSITION

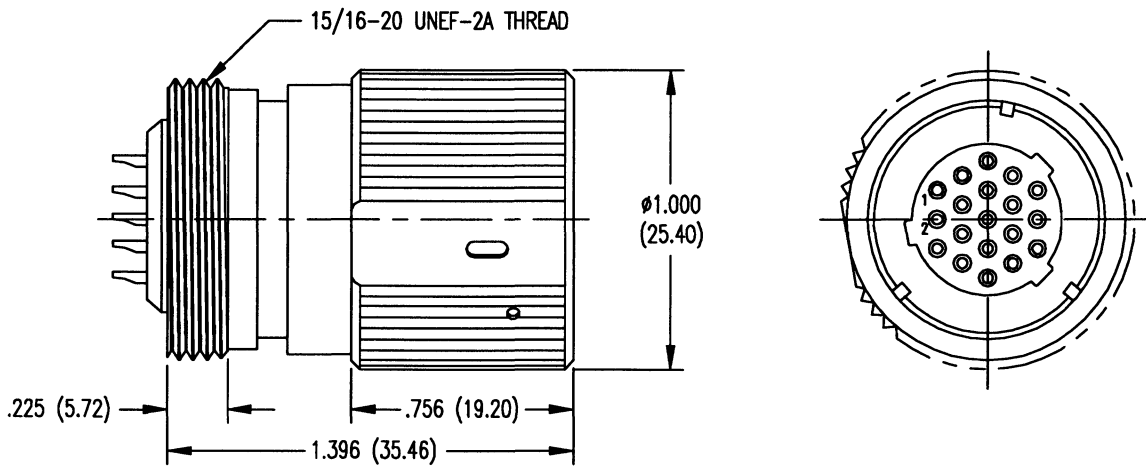
## 19 Position, Receptacle, Filtered



**Side View**

**Front View**

## 19 Position, Plug, Non-Filtered



**Side View**

**Front View**



# CUSTOM MIL-CON CONNECTORS

## 27 POSITION

### SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

#### MATERIALS

Shell: Aluminum Alloy.  
Contacts and Terminals: Copper Alloy.  
Insulator: Diallyl Phthalate per MIL-M-14, Type MDG or Rubber per ASTM D200.  
O-Ring: Rubber, per ASTM D2000.

#### MECHANICAL

Air Pressure: 5 P.S.I.  
Water Immersion: 48 Hours at 6 Feet.  
Durability: 500 Cycles, Mate and Unmate.

#### FINISHES/COLORS

Shell: Chemical conversion coating per MIL-C-5541.  
Insulator: Blue or Black.  
O-Ring: Black.  
Contacts and Terminals: .000030 Gold per MIL-G-45204, Type II, Class 0; over Nickel per QQ-N-290.

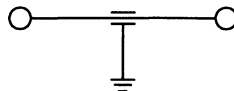
#### ELECTRICAL

Working Voltage: 200 VDC Maximum.  
Dielectric Withstanding Voltage: 300 Volts RMS.  
Insulation Resistance: 5000 Megohms Minimum.  
Current Rating: 7.5 Amps Maximum.  
Contact Resistance (Mated): .0075 Ohm Maximum.  
Operating Temperature Range: -67° F to +185° F  
(-55° C to +85° C)

#### ELECTRICAL (FILTERED CONNECTORS ONLY)

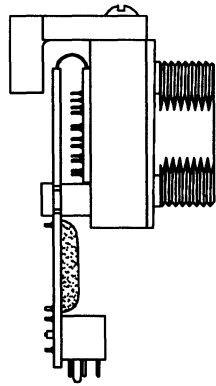
Filter Type: C  
Capacitance (1 KHz, 25° C): 20000 pF.  
Working Voltage: 100 VDC Maximum  
Insulation Resistance (500 VDC, 25° C): 300 Megohms Minimum.  
Insertion Loss (MIL-STD-220, No Load, 25° C):  
40 Db Minimum at 30 MHz to 90 MHz..  
Dielectric Withstanding Voltage: 500 VDC.

#### Schematic Drawing of C Filter

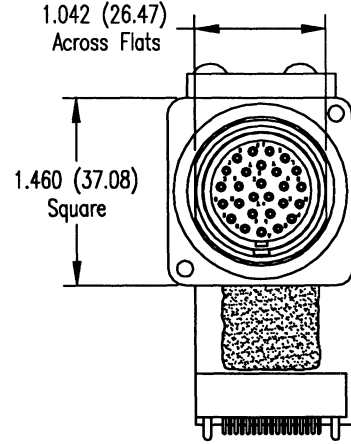


# CUSTOM MIL-CON CONNECTORS 27 POSITION

## 27 Position, Receptacle, Filtered

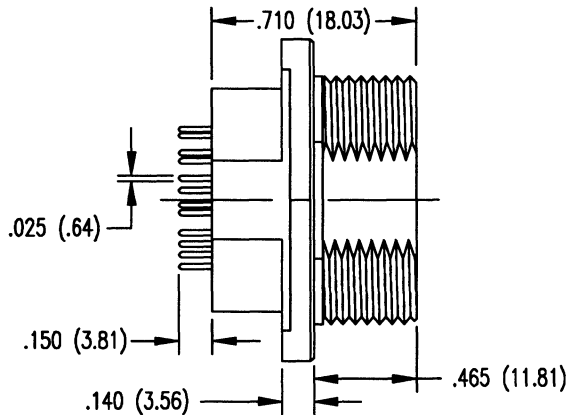


**Side View**

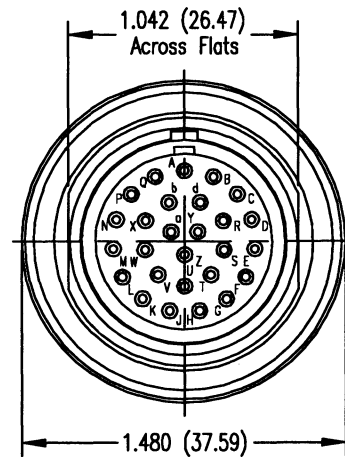


**Front View**

## 27 Position, Receptacle (Male), Non-Filtered

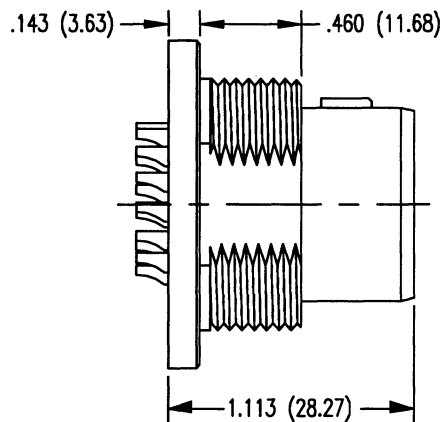


**Side View**

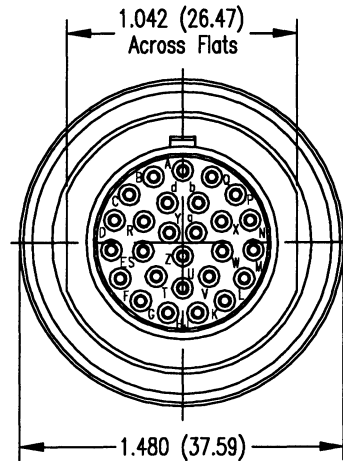


**Front View**

## 27 Position, Receptacle (Female), Non-Filtered

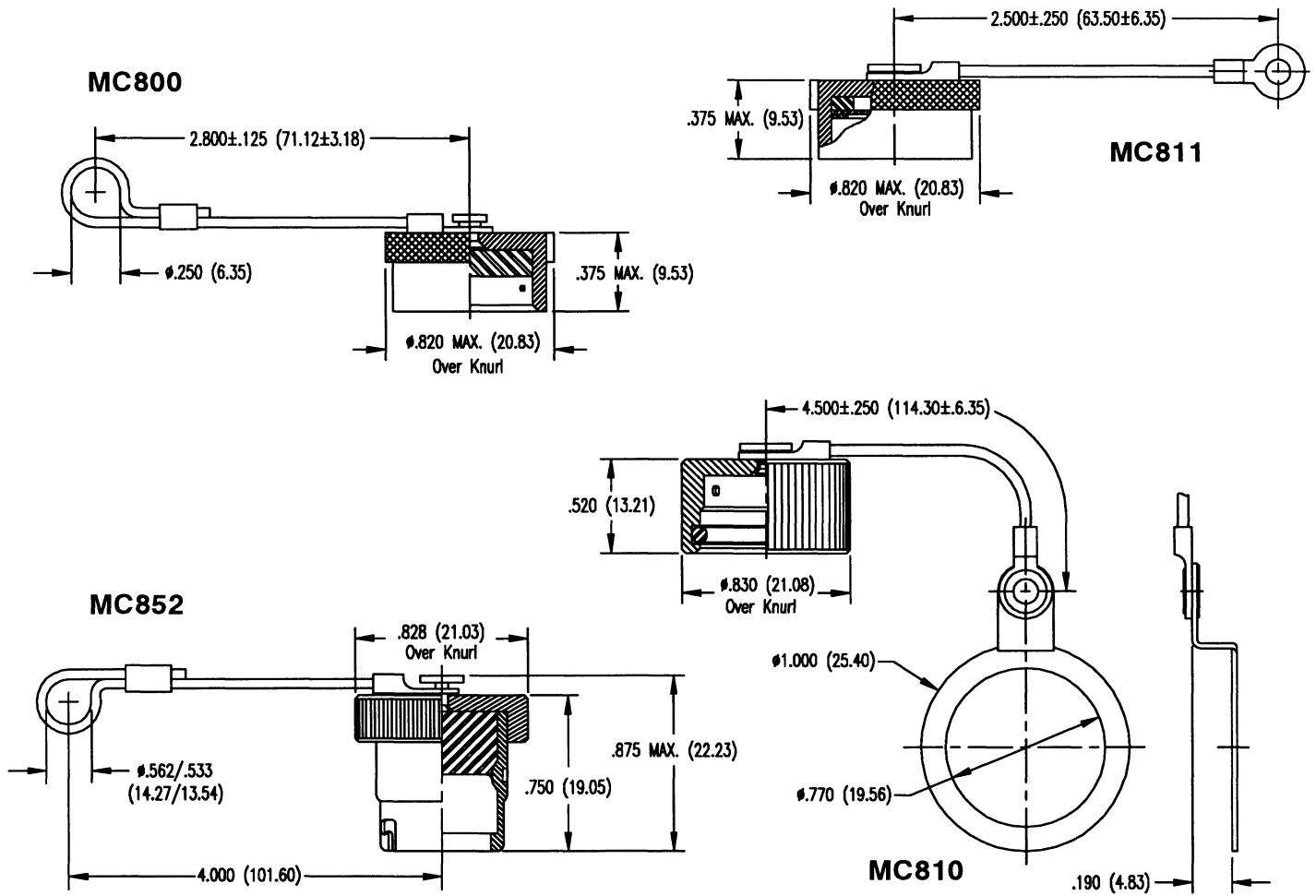


**Side View**



**Front View**

# DUST CAPS



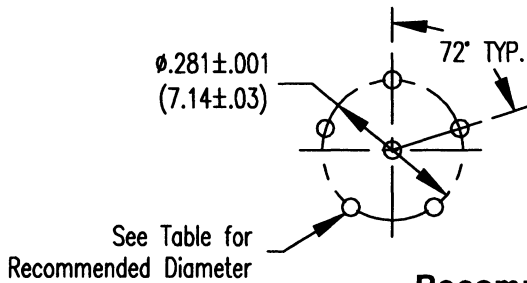
## SPECIFICATIONS

PART NO.	MATES WITH	COVER MATERIAL/FINISH	CORD MATERIAL/FINISH	END CORD TERMINATION	FUNCTION
MC800	MC183/283 MC228/328	Aluminum/Olive Drab Chromate	Nylon/Olive Drab	Cord Loop	Dust Protection
MC810	MC183/283 MC228/328	Stainless Steel/Sand Blasted, Passivated	Stainless Steel	Stainless Steel Lug To Stainless Steel Ring	Dust Protection
MC811	MC183/283 MC228/328	Aluminum/Black Anodized	Stainless Steel	Stainless Steel Lug	Dust/EMI Protection
MC852	MC229/329 MC429/529 MC629/729	Stainless Steel/Sand Blasted, Passivated	Stainless Steel/Nylon Coated	Cord Loop	Dust Protection

Mating Chart

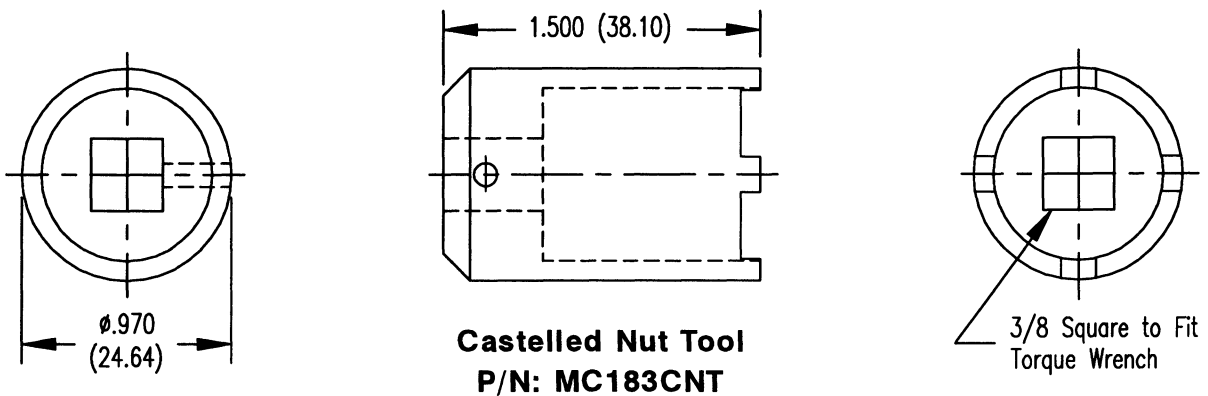
	MC 183S	MC 217-1/4	MC 217-3/16	MC 217A-1/4	MC 217A-3/16	MC 283	MC 283F*	MC 328	MC 329	MC 429	MC 529	MC 617-1/4	MC 617-3/16	MC 617A-1/4	MC 617A-3/16	MC 629	MC 682B	MC 683S	MC 729	MC 182	MC 183	MC 183F*	MC 228	MC 229	
MC183S		X	X	X	X					X						X				X					X
MC217-1/4	X																				X	X	X		
MC217-3/16	X																				X	X	X		
MC217A-1/4	X																				X	X	X		
MC217A-3/16	X																				X	X	X		
MC283										X	X	X	X	X	X	X	X	X							
MC283F*										X	X	X	X	X	X	X	X	X							
MC328										X	X	X	X	X	X	X	X	X							
MC329							X	X	X									X							
MC429	X																				X	X	X		
MC529							X	X	X									X							
MC617-1/4							X	X	X									X							
MC617-3/16							X	X	X									X							
MC617A-1/4							X	X	X									X							
MC617A-3/16							X	X	X									X							
MC629	X																				X	X	X		
MC682B							X	X	X									X							
MC683S										X	X	X	X	X	X	X	X	X	X						
MC729							X	X	X									X							
MC182	X																				X	X	X		
MC183		X	X	X	X					X							X				X				X
MC183F*		X	X	X	X					X							X				X				X
MC228		X	X	X	X					X							X				X				X
MC229	X																				X	X	X		

\*See Filtered Audio Selection Page



PC Terminal Diameter	Recommended Hole Size
.028 (0.71)	.035 ± .002 (.89 ± .05)
.030 (0.76)	.037 ± .002 (.94 ± .05)
.040 (1.02)	.047 ± .002 (1.19 ± .05)

Recommended PCB Hole Pattern



Castled Nut Tool  
P/N: MC183CNT