

FILTER

FILTER CONNECTOR TECHNOLOGY

Working or Operational Voltage is the maximum voltage that can be continuously sustained. The dielectric utilized to manufacture the capacitor sets this value, which is directly proportional to the distance between ground planes and electrodes, whether a tubular capacitor or a planar array.

Insulation resistance (IR) is generally measured at the capacitor or connectors working voltage. This ensures that when utilized at these voltages, there is sufficient resistance between contacts and from a contact to ground, so as not to cause electrical shorts. Typical values are approximately 5000 mega-ohms. Lower values may be required for high capacitance values.

Capacitance is a product of the overlap between ground planes and electrodes, and the dielectric utilized (The dielectric constant of the ceramic k). Capacitance plays a key role in the filter performance. Capacitors impedance lowers as frequency increases. The greater the frequency, the greater the effect of filtering or attenuation for a low-pass filter.

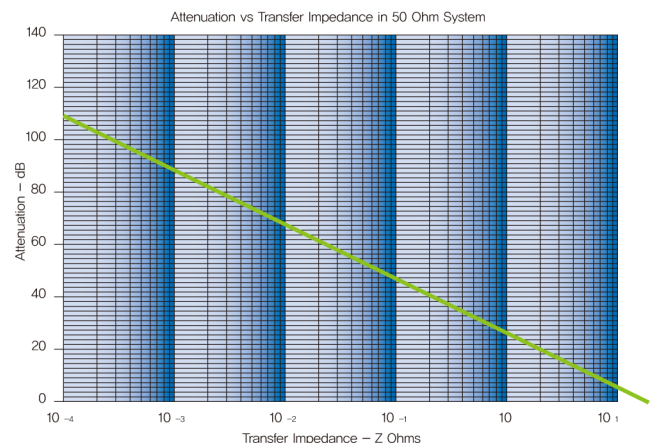
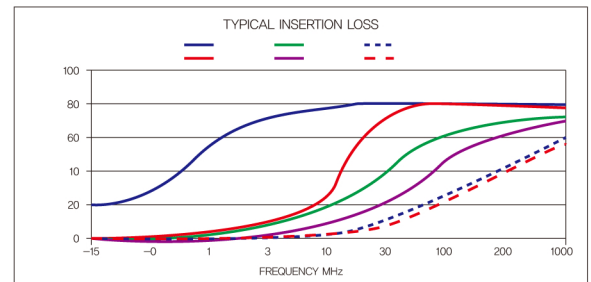
Noise Floor is the value at which the connector will not exceed. Typically 75–85dB. This is limited by capacitor performance, source and load impedance and ground resistance. The graph on the right shows attenuation still increasing at 80db.

Cross talk is a disturbance, caused by electromagnetic interference, along a circuit or a cable pair. A telecommunication signal disrupts a signal in an adjacent circuit and can cause the signals to become confused and cross over each other.

Dielectric Withstanding Voltage (DWV) is the connectors upper voltage capability, for short non sustainable periods only. This can be specified as duration. The capacitor array will be weakened by multiple and sustained applied voltages at DWV levels.

Planar Array is the most common form of filter components utilized in connectors within our market areas. They provide high performance filters, are rugged enough to withstand high environmental vibration levels and can be manufactured with working voltages up to 1000 VDC with relative ease.

Dissipation Factor (DF) is the ratio of the energy dissipated to the energy stored in a dielectric per hertz, also equal to the tangent of the loss angle. It is also defined as the reciprocal of the ratio between the insulating materials capacitive reactance to its resistance at a specified frequency. It measures the inefficiency of an insulating material. If a material were to be used for strictly insulating purposes, it would be better to have a lower dielectric constant.

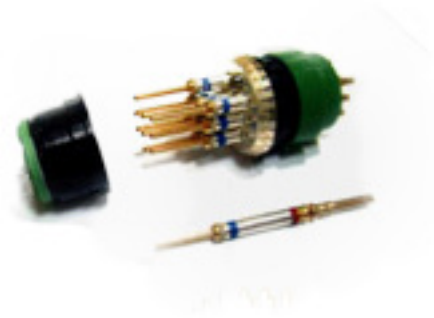


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FILTER

MIL-C-26482 SERIES II FILTER CONNECTORS

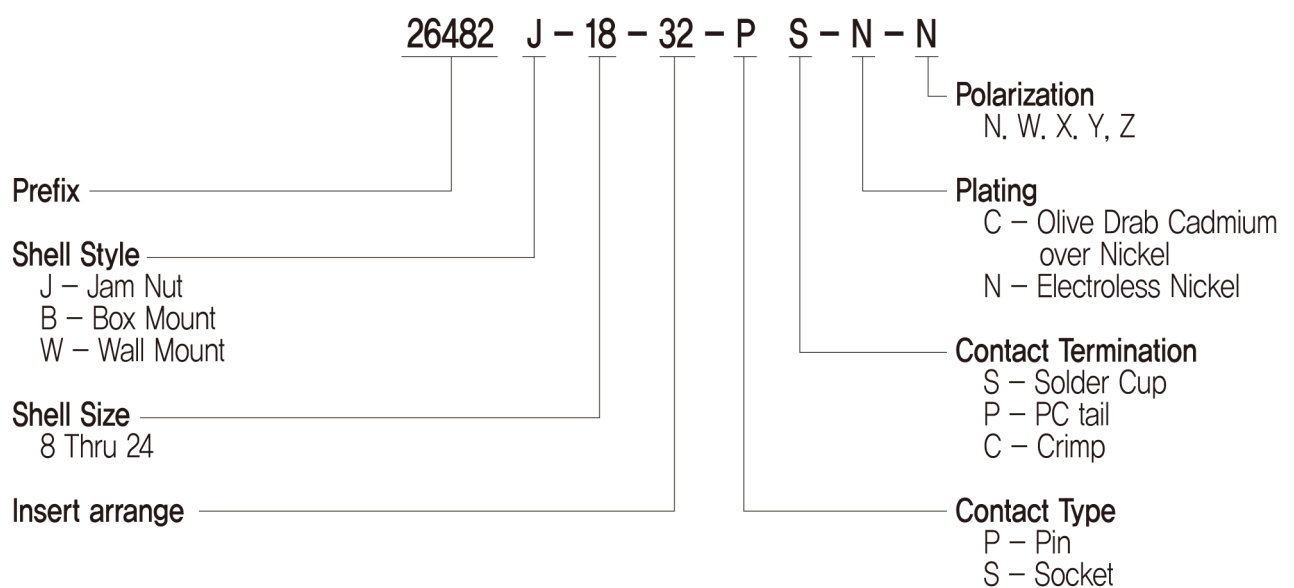


MIL-C-26482 Series II / MIL-DTL-83723 Series I filter connectors are designed to meet or exceed all applicable requirements of the military specifications. The filter connectors are intermateable and interchangeable with the standard non-filtered connectors.

Materials and Finishes

Shell	Aluminum alloy
Insulator	High grade plastic / epoxy
Contacts	Copper alloy / Gold plate
Grommet and Seal	Silicon base elastomer
Jam nut	Aluminum alloy
Ground Plane	Brass / silver plate
Capacitor	Barium titanate
Inductor	Ferrite bead

● Ordering Information

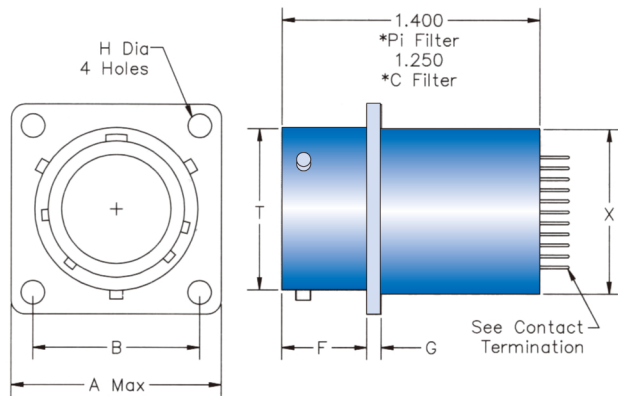


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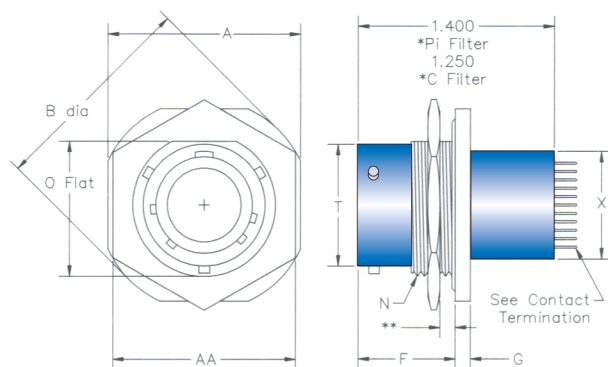
● MS3470 Style Box Mount Receptacle



DIMENSIONS

Shell Size	A Max.	B Dia.	F	G Dia.	H Dia.	T Dia.	X Max. Dia.
8	.828	.654	.462 .431	.078 .046	.120	.474 .468	.500
10	.954	.719	.462 .431	.078 .046	.120	.591 .585	.620
12	1.047	.812	.462 .431	.078 .046	.120	.751 .745	.740
14	1.141	.906	.462 .431	.078 .046	.120	.876 .870	.890
16	1.231	.969	.462 .431	.078 .046	.120	1.001 .995	1.000
18	1.328	1.062	.462 .431	.078 .046	.120	1.126 1.120	1.120
20	1.458	1.156	.587	.110	.120	1.251 1.245	1.250
22	1.578	1.250	.565	.110	.120	1.376 1.370	1.390
24	1.703	1.375	.620 .589	.078	.147	1.501 1.495	1.500

● MS3470 Style Jam Nut Receptacle



** .187 Max Shell Size 8-18
.250 Max Shell Size 20-24

DIMENSIONS

Shell Size	A Max.	B Dia.	F	G Dia.	N	O Flat	T Dia.	X Max. Dia.	AA Max. Dia.
8	.954 .923	1.078 1.047							
10	1.078 1.047	1.203 1.172							
12	1.266 1.235	1.391 1.360							
14	1.391 1.360	1.516 1.485			1.000-20				
16	1.516 1.485	1.641 1.610							
18	1.641 1.610	1.828 1.797							
20	1.828 1.797	1.954 1.923							
22	1.954 1.923	2.078 2.047							
24	2.078 2.047	2.203 2.172							



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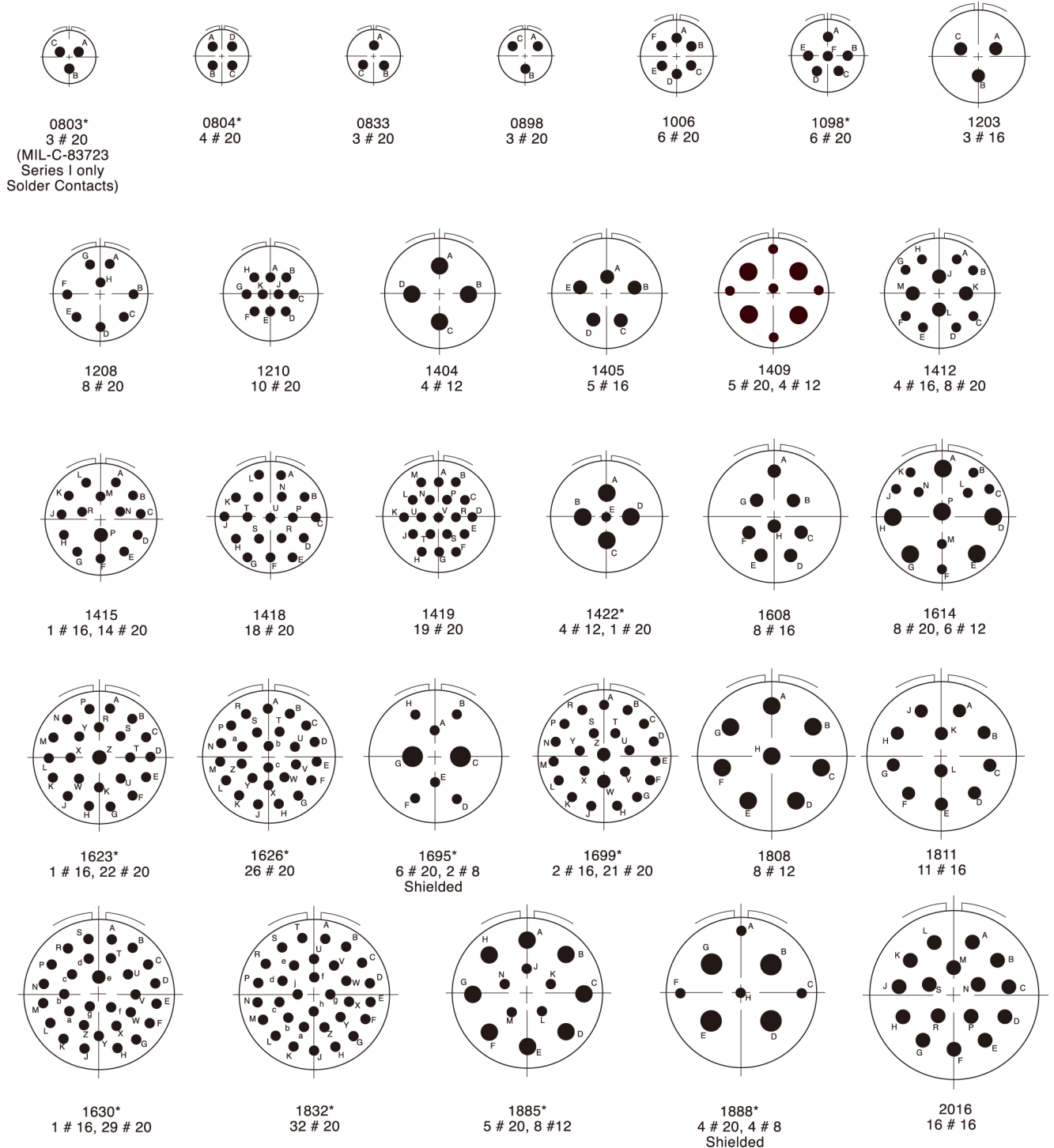
FILTER

● INSERT ARRANGEMENT

Insert Arrangements(per MIL-STD-1669)

Number identification example : 0833(Insert arrangement No.)

3#20(Contact quantity and size)

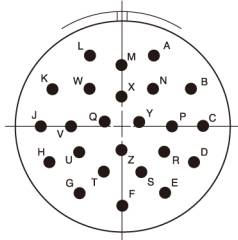


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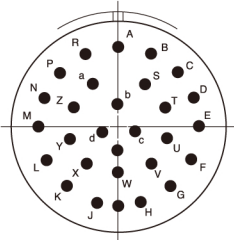
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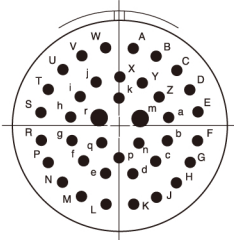
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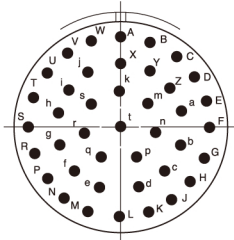
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24 # 20



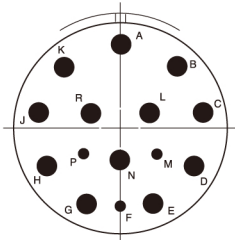
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27 # 20



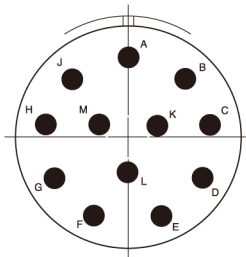
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2 # 16, 37 # 20



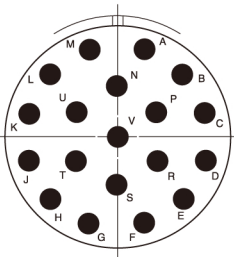
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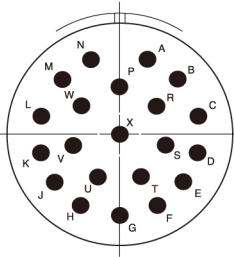
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3 # 20, 12 # 12



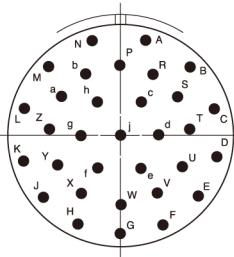
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12 # 12



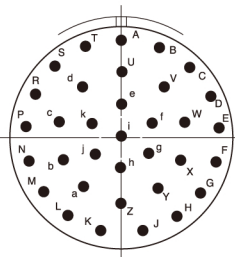
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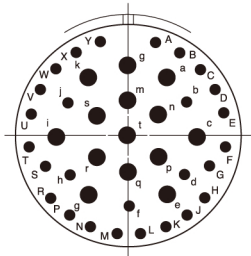
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21 # 16



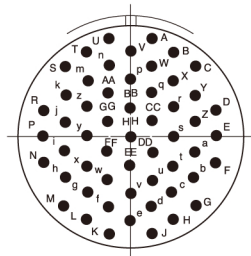
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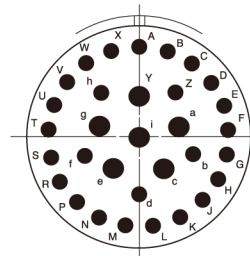
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34 # 20



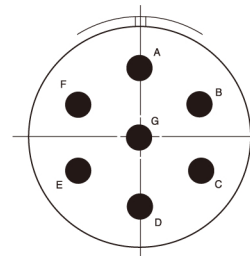
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14 # 16, 27 # 20



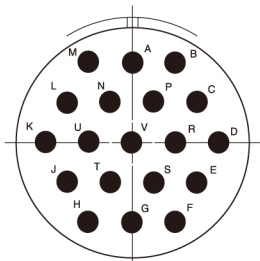
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55 # 20



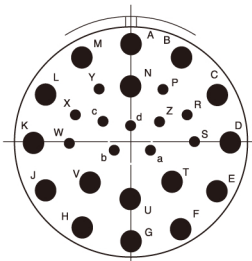
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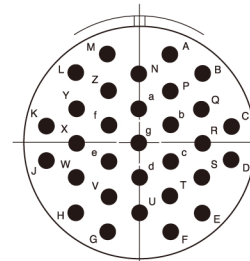
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7 # 8 Shielded



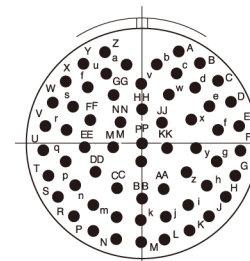
2419
19 # 12



2427*
11 # 20, 16 # 12



2431
31 # 16



2461
61 # 20



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FILTER

MIL-DTL-38999 STYLE FILTER CONNECTORS

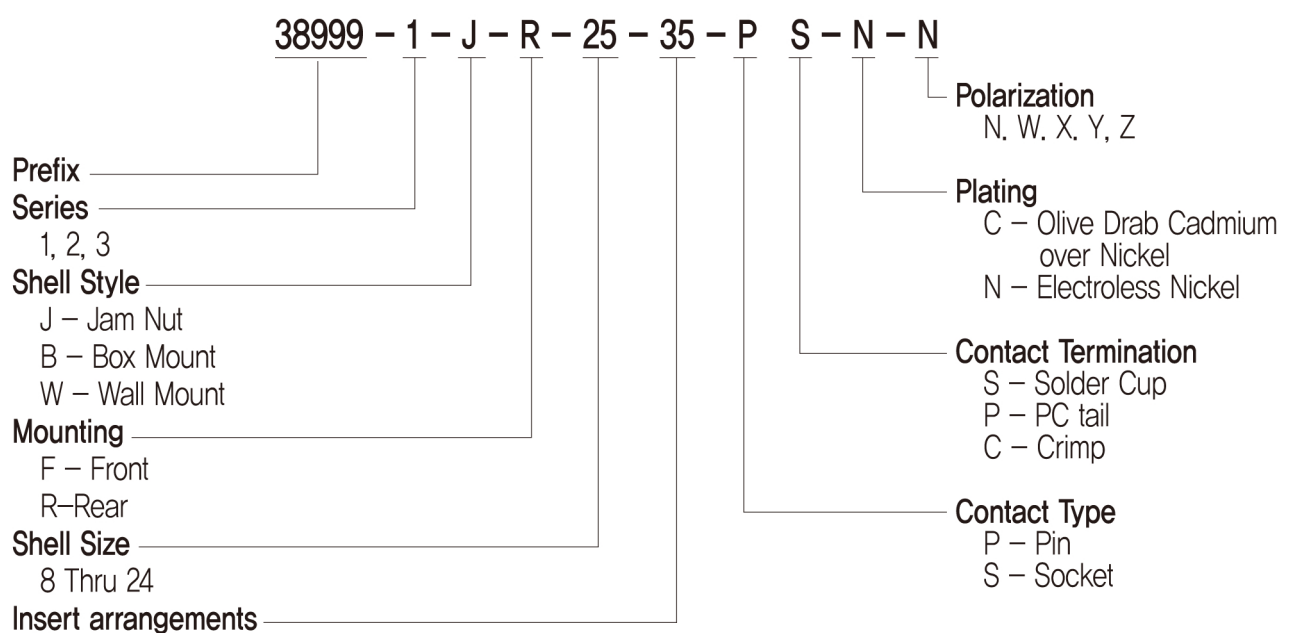
MIL-DTL-38999 filter connectors are designed to meet or exceed all applicable requirements of the military specifications. The filter connectors are intermateable and interchangeable with the standard non-filtered connectors.



Materials and Finishes

Shell	Aluminum alloy
Insulator	High grade plastic / epoxy
Contacts	Copper alloy / Gold plate
Grommet and Seal	Silicon base elastomer
Jam nut	Aluminum alloy
Ground Plane	Brass / silver plate
Capacitor	Barium titanate
Inductor	Ferrite bead

● Ordering Information



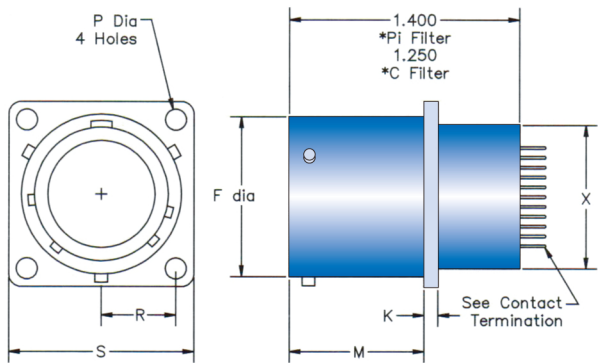
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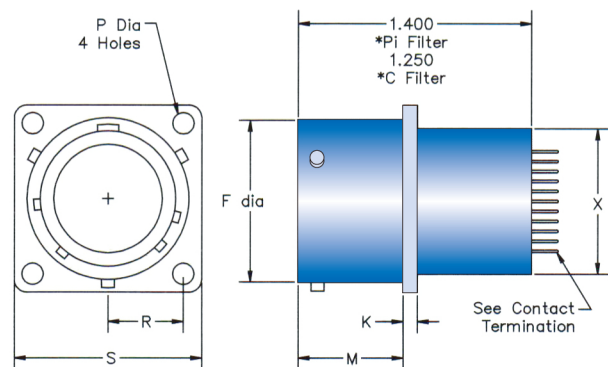
● MIL-C-DTL-38999 SERIES I STYLE

MS27505 Square Flange Receptacle Rear Mount



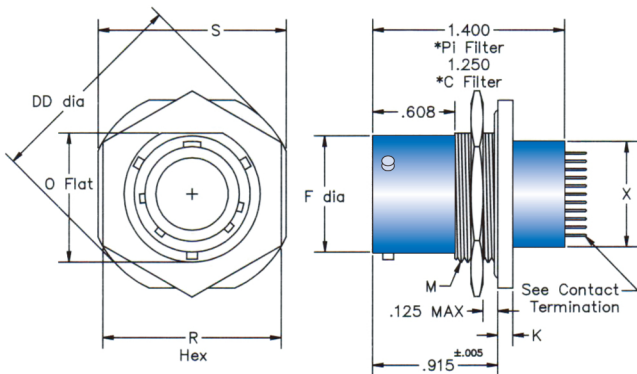
DIMENSIONS							
Shell Size	A +.001 -.005	K +.015 -.000	M +.000 -.005	P Dia +.001 -.005	R BSC	S +.020	X Max. Dia.
9	.572	.085	.632	.128	.3595	.938	.500
11	.700	.085	.632	.128	.4060	1.031	.620
13	.850	.085	.632	.128	.4530	1.125	.740
15	.975	.085	.632	.128	.4845	1.219	.890
17	1.100	.085	.632	.128	.5310	1.312	1.000
19	1.207	.115	.632	.128	.5780	1.438	1.120
21	1.332	.115	.602	.128	.6250	1.562	1.250
23	1.457	.115	.602	.147	.6875	1.688	1.390
25	1.582	.115	.602	.147	.7500	1.812	1.500

MS27466 Square Flange Receptacle Front Mount



DIMENSIONS							
Shell Size	A +.001 -.005	K +.015 -.000	M +.000 -.005	P Dia +.001 -.005	R BSC	S +.020	X Max. Dia.
9	.572	.085	.632	.128	.3595	.938	.500
11	.700	.085	.632	.128	.4060	1.031	.620
13	.850	.085	.632	.128	.4530	1.125	.740
15	.975	.085	.632	.128	.4845	1.219	.890
17	1.100	.085	.632	.128	.5310	1.312	1.000
19	1.207	.115	.632	.128	.5780	1.438	1.120
21	1.332	.115	.602	.128	.6250	1.562	1.250
23	1.457	.115	.602	.147	.6875	1.688	1.390
25	1.582	.115	.602	.147	.7500	1.812	1.500

MS27468 Jam Nut Receptacle



Shell Size	DIMENSIONS							
	F	K	M	O Flat	R Hex	S	X	DD
	+ - +.001 -.005	+ - +.015 -.000	Thread	+ - +.000 -.010	+ - +.017 -.016	±.016	Max. Dia.	±.016
9	.572	.085	.6875-24	.655	.875	1.062	.500	1.188
11	.700	.085	.8125-20	.755	1.000	1.250	.620	1.375
13	.850	.085	1.000-20	.942	1.188	1.375	.740	1.500
15	.975	.085	1.125-18	1.066	1.312	1.500	.890	1.625
17	1.100	.085	1.250-18	1.191	1.438	1.625	1.000	1.750
19	1.207	.115	1.375-18	1.316	1.562	1.812	1.120	1.938
21	1.332	.115	1.500-18	1.441	1.688	1.938	1.250	2.062
23	1.457	.115	1.625-18	1.566	1.812	2.062	1.390	2.188
25	1.582	.115	1.750-18	1.691	2.000	2.188	1.500	2.312



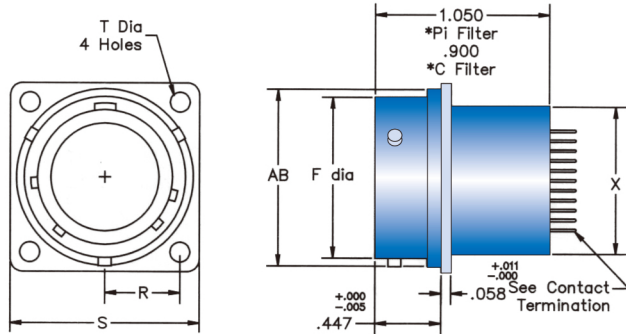
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FILTER

● MIL-C-DTL-38999 SERIES II STYLE

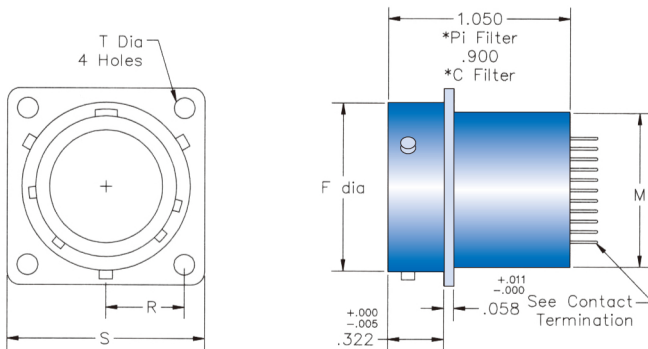
MS27508 Square Flange Receptacle Rear Mount



DIMENSIONS

Shell Size	A +.001 -.005	K +.010 -.005	R BSC	S Max.	X Max.
8	.473	.120	.297	.828	.500
10	.590	.120	.360	.954	.620
12	.750	.120	.406	1.047	.740
14	.875	.120	.453	1.141	.890
16	1.000	.120	.485	1.234	1.000
18	1.125	.120	.531	1.328	1.120
20	1.250	.120	.578	1.453	1.250
22	1.375	.120	.625	1.578	1.390
24	1.500	.147	.688	1.703	1.500

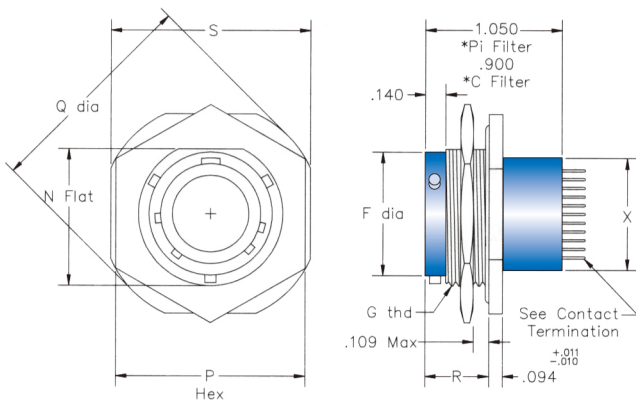
MS27499 Square Flange Receptacle Front Mount



DIMENSIONS

Shell Size	A +.001 -.005	K +.010 -.005	R BSC	S Max.	X Max.	AB Max.
8	.473	.120	.297	.828	.500	.547
10	.590	.120	.360	.954	.620	.672
12	.750	.120	.406	1.047	.740	.844
14	.875	.120	.453	1.141	.890	.969
16	1.000	.120	.485	1.234	1.000	1.094
18	1.125	.120	.531	1.328	1.120	1.219
20	1.250	.120	.578	1.453	1.250	1.344
22	1.375	.120	.625	1.578	1.390	1.469
24	1.500	.147	.688	1.703	1.500	1.594

MS27474 Jam Nut Receptacle



DIMENSIONS

Shell Size	F +.001 -.005	N +.001 -.006	G Thread	P Hax. +.000 -.010	Q +.016	S .016	X Max. Dia.	R ±.005
8	.473	.817	.875-20	1.062	1.375	1.250	.500	.438
10	.590	.941	1.000-18	1.188	1.500	1.375	.620	.438
12	.750	1.065	1.125-18	1.312	1.625	1.500	.740	.438
14	.875	1.190	1.250-18	1.438	1.750	1.625	.890	.438
16	1.000	1.320	1.375-18	1.562	1.938	1.781	1.000	.438
18	1.125	1.440	1.500-18	1.688	2.016	1.890	1.120	.464
20	1.250	1.565	1.625-18	1.812	2.140	2.016	1.250	.464
22	1.375	1.690	1.750-18	2.000	2.265	2.140	1.390	.464
24	1.500	1.815	1.875-16	2.125	2.390	2.265	1.500	.464



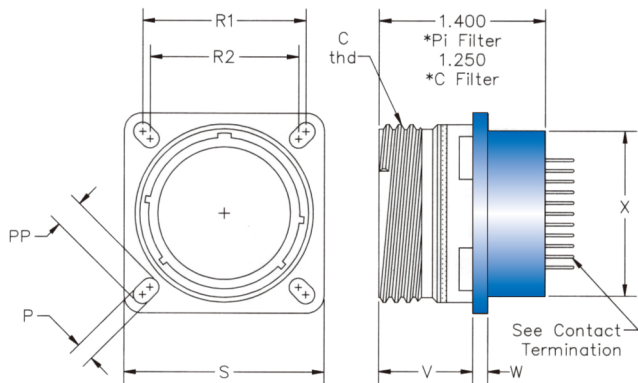
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● MIL-C-DTL-38999 SERIES III STYLE

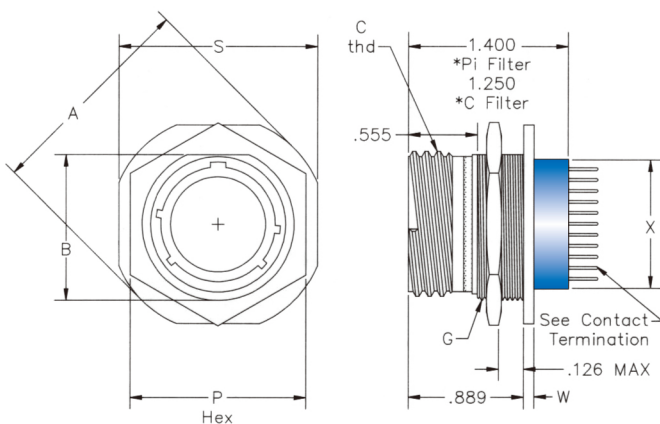
D38999/20 Box Mount Receptacle



DIMENSIONS

Shell Size	C Thread .1 Pitch .2 Lead	P ±.008	R1 BSC	R2 BSC	V Max.	W Max.	X Max.	A Max. ±.008	S +.012
9	.625	.128	.719	.564	.820	.098	.500	.194	.937
11	.750	.128	.812	.719	.820	.098	.620	.194	1.031
13	.875	.128	.906	.812	.820	.098	.740	.194	1.126
15	1.000	.128	.969	.906	.820	.098	.890	.194	1.220
17	1.188	.128	1.062	.969	.820	.098	1.000	.194	1.311
19	1.250	.128	1.156	1.062	.820	.098	1.120	.194	1.437
21	1.375	.154	1.250	1.156	.790	.126	1.250	.194	1.563
23	1.500	.154	1.375	1.250	.790	.126	1.390	.242	1.689
25	1.625	.154	1.500	1.375	.790	.126	1.500	.242	1.811

D38999/20 Jam Nut Receptacle



DIMENSIONS

Shell Size	A ±.012	B +.004 -.006	C Thread .1 Pitch .2 Lead	G Thread 6g,10R	P Hex.	S ±.015	W +.028 -.004	X Max.
9	1.189	.651	.625	M17x1	.945 .912	1.063	.087	.500
11	1.374	.751	.750	M20x1	1.062 .983	1.252	.087	.620
13	1.500	.938	.875	M25x1	1.260 1.234	1.374	.087	.740
15	1.625	1.062	1.000	M28x1	1.456 1.424	1.500	.087	.890
17	1.812	1.187	1.188	M32x1	1.614 1.581	1.626	—	1.000
19	1.938	1.312	1.250	M35x1	1.811 1.781	1.811	.118	1.120
21	2.062	1.437	1.375	M38x1	1.968 1.938	1.937	.118	1.250
23	2.188	1.562	1.500	M41x1	1.968 1.938	2.063	.118	1.390
25	2.312	1.687	1.625	M44x1	1.968 1.938	2.189	.118	1.500

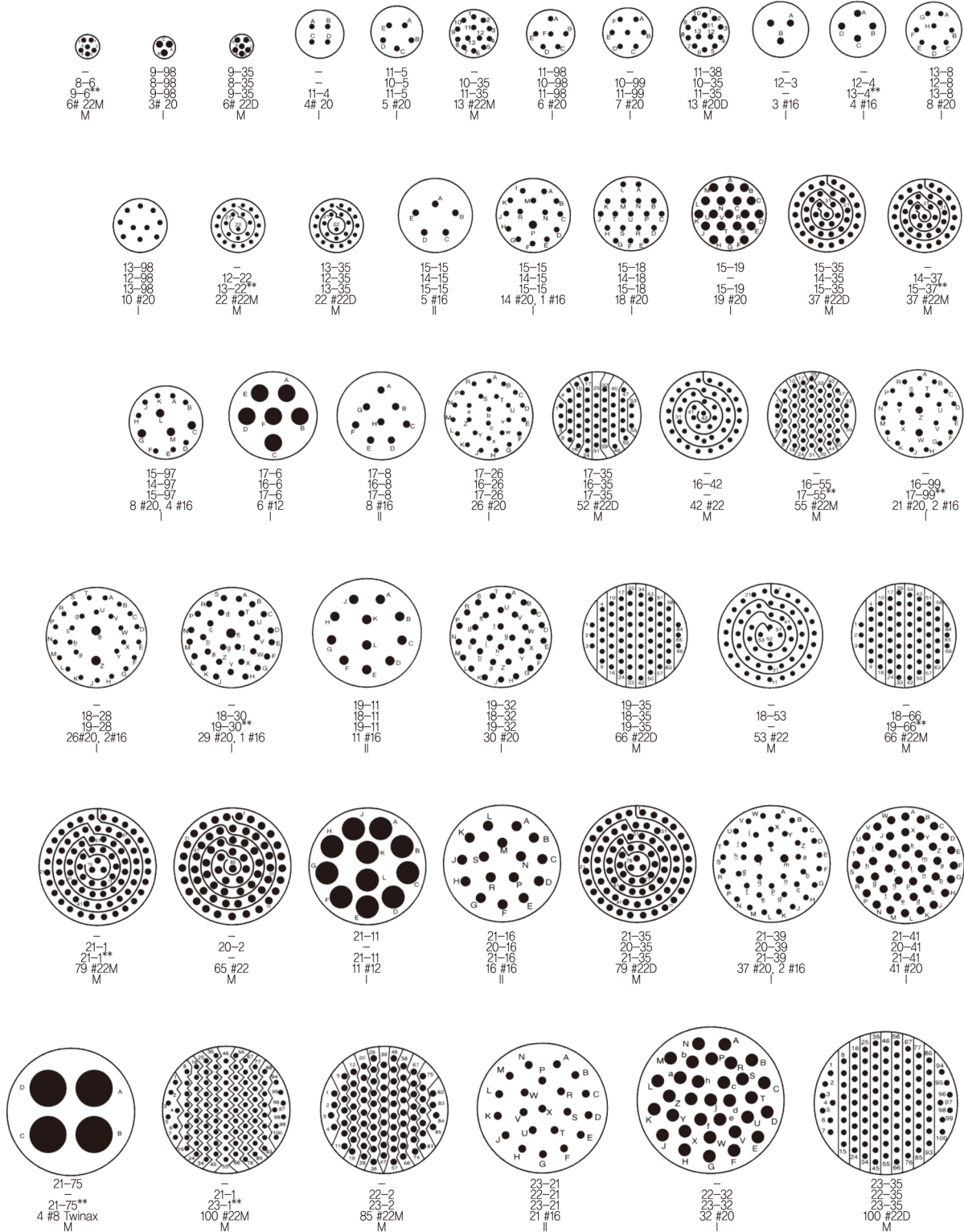


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FILTER

● INSERT ARRANGEMENT

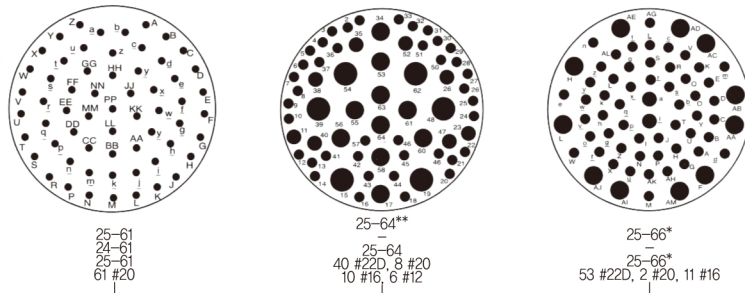
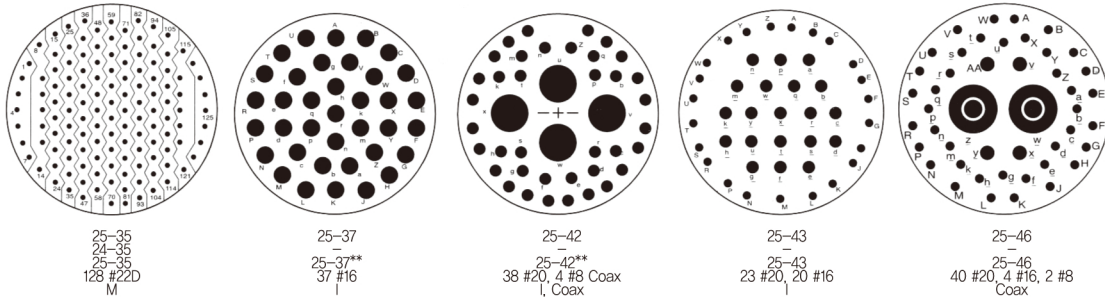
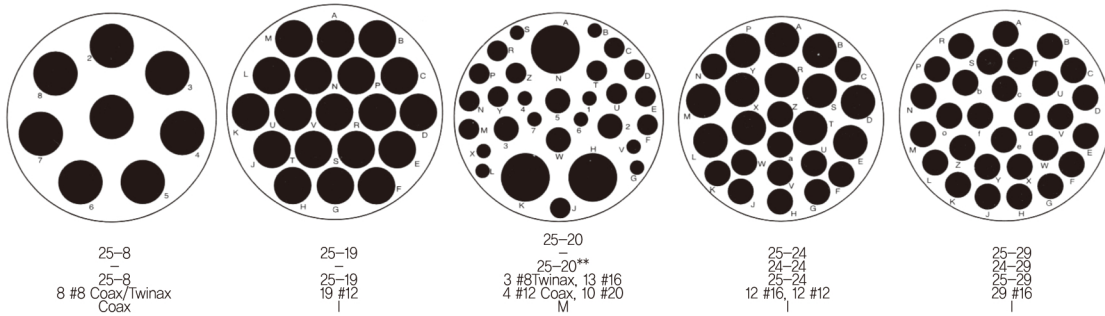
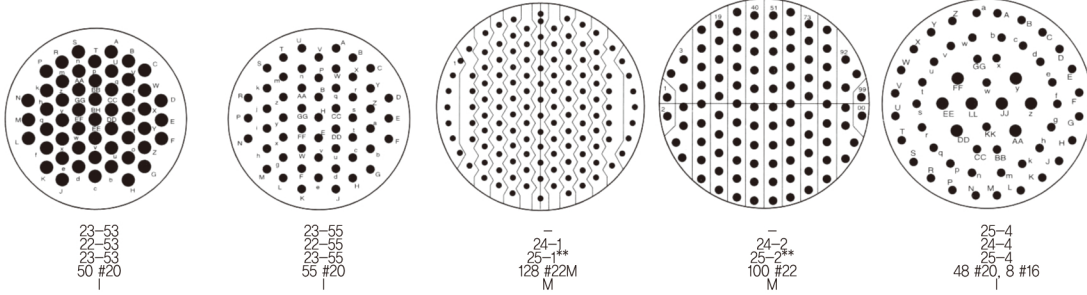


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FILTER

● INSERT ARRANGEMENT

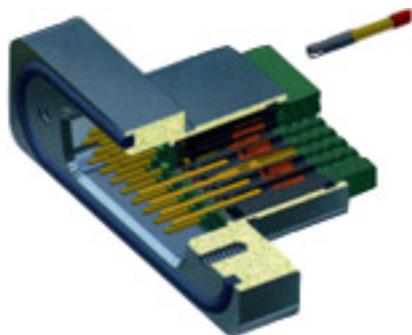


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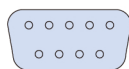
FILTER

MIL-DTL-24308 FILTER CONNECTORS

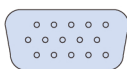


MIL-DTL-24308 D-Subminiature filter connectors are designed to meet or exceed all applicable requirements of the military specifications. The filter connectors are intermateable and interchangeable with the standard non-filtered connectors.

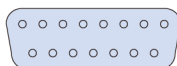
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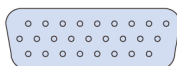
9 #20



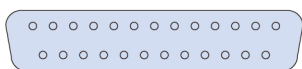
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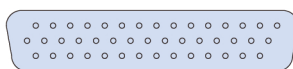
15 #20



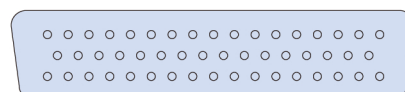
26 #22



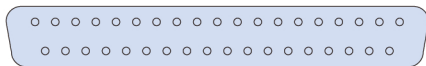
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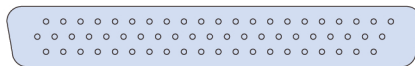
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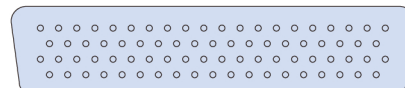
50 #20



37 #20



62 #22

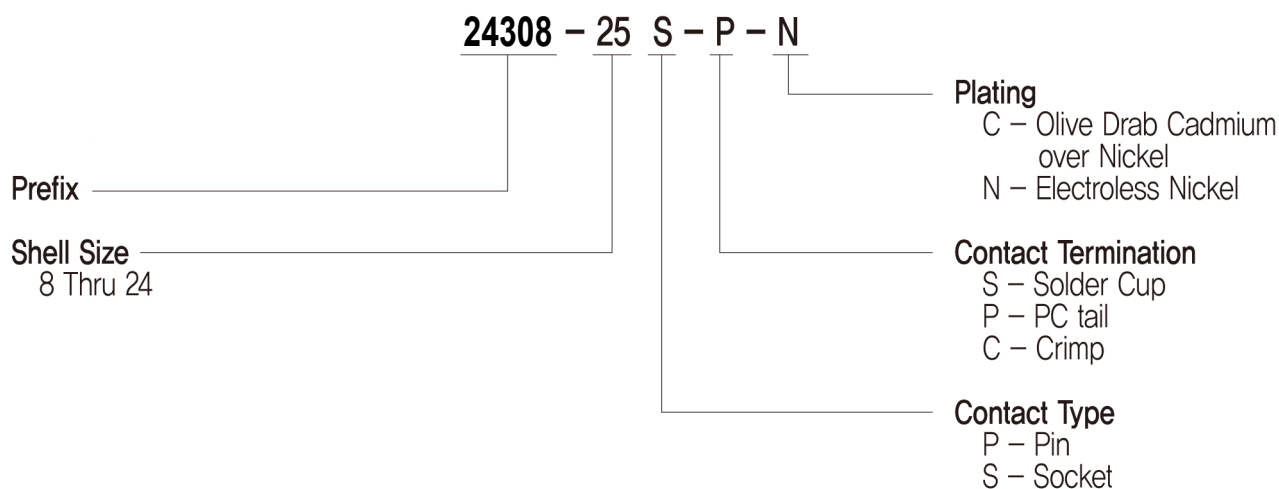


78 #22

Materials and Finishes

Shell	Aluminum alloy
Insulator	High grade plastic / epoxy
Contacts	Copper alloy / Gold plate
Grommet and Seal	Silicon base elastomer
Jam nut	Aluminum alloy
Ground Plane	Brass / silver plate
Capacitor	Barium titanate
Inductor	Ferrite bead

● Ordering Information



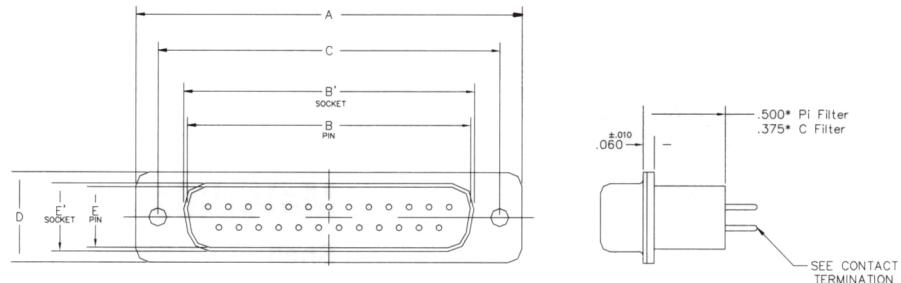
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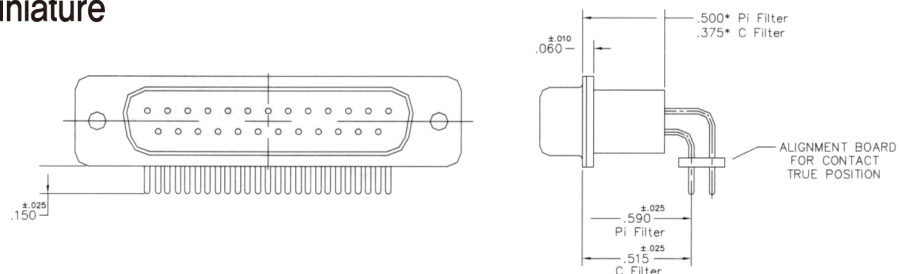
FILTER

● MIL-DTL-24308 FILTER CONNECTORS

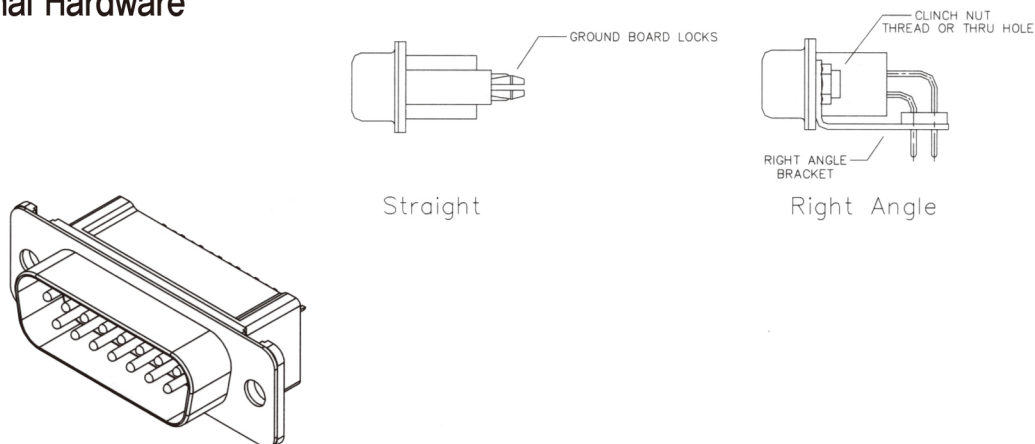
Straight D-Subminiature



Right Angle D-Subminiature



Optional Hardware



DIMENSIONS

Shell Size	STANDARD LAYOUT SIZE 20	HIGH DENSITY LAYOUT SIZE 22	A ±.015	B(Pin) ±.005	B'(Socket) ±.005	C Basic	D ±.010	B(Pin) ±.005	B'(Socket) ±.005
E	9 CONTACT	15 CONTACT	1.213	.667	.642	.984	.494	.330	.310
A	15 CONTACT	26 CONTACT	1.541	.995	.907	1.312	.494	.330	.310
B	25 CONTACT	44 CONTACT	2.088	1.535	1.510	1.852	.494	.330	.310
C	37 CONTACT	62 CONTACT	2.729	2.183	2.158	2.500	.494	.330	.310
D	50 CONTACT	78 CONTACT	2.635	2.081	2.063	2.406	.605	.437	.422



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FILTER

MIL-C-55116 FILTER CONNECTORS



Integrally filtered connectors for controlling electromagnetic interference (EMI) are available in various connectors such as the 5- and 6- contact audio receptacles, U-183/U and U-283/U, per MIL-C-55116.

The filters used are low-pass, pi-network, ferrite-ceramic capacitors.

Each filter surrounds the pin to be filtered and is connected to a ground-plane built into the connector.

Materials and Finishes

Shells & Nuts : Stainless steel, passivated, sand blasted,

Insulators : Diallyl phthalate per MIL-M-14F, Type MDG.

Contacts : Copper alloy, 50micron inch gold per MIL-G-45204, Type II, Class 1 over 10micron inch nickel

Electrical

Dielectric Strength : 300 VDC

Working Voltage : 100VDC.

Insulation Resistance : 10,000 Meg ohms, Min.

Contact Resistance (Mated) : 0.050 Ohms, Max.

Insertion Loss(Typical) per MIL-STD-220,(25°C no load) : 50dB Min.(100MHz to 10GHz)

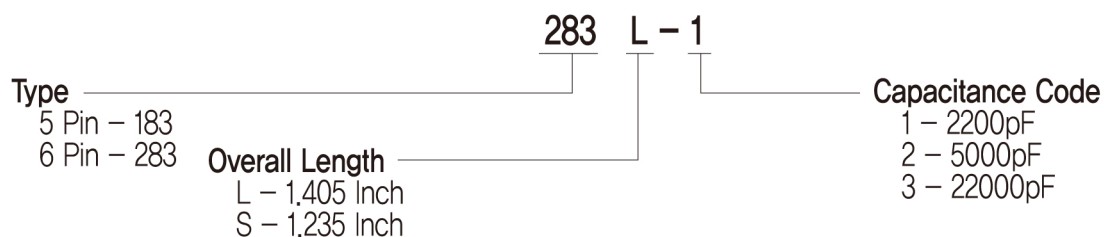
Operating Temperature Range : -55°C to 185°C

Mechanical

Air Pressure : 2.5 psi.

Durability : 1500 cycles, mate and unmate.

● Ordering Information

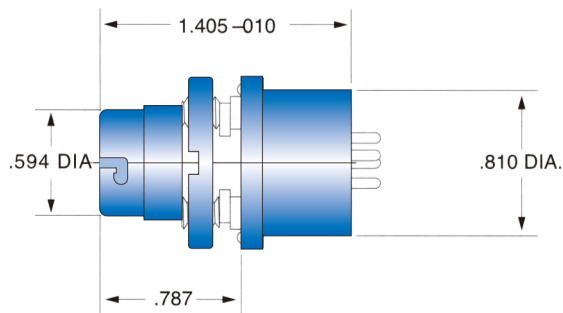


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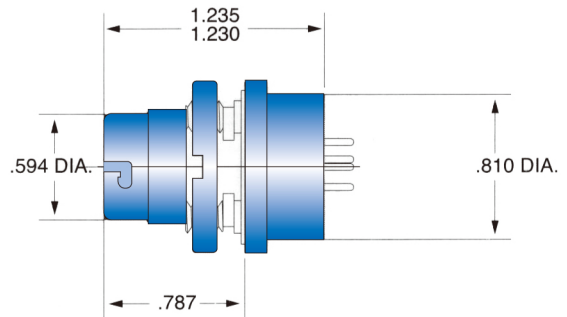
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• <http://www.nearson.com.tw>

FILTER

MIL-C-55116 FILTER CONNECTORS

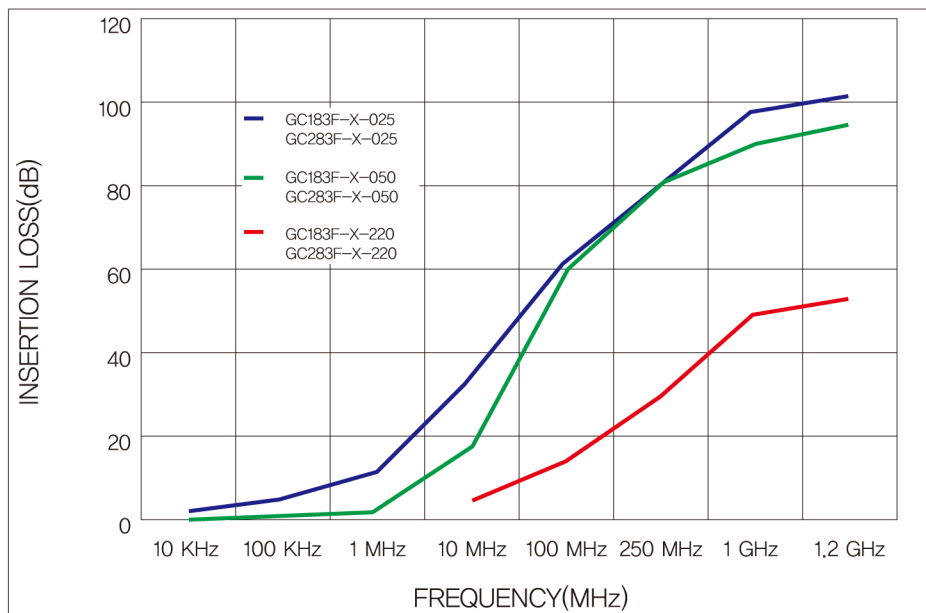


SJF 183L
SJF 283L



SJF 183S
SJF 183S

● Insertion Loss(Typical) per MIL-STD-220(25°C, No Load)



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FILTER

PUSH-PULL FILTER CONNECTORS

Effective Mating with One-touch system—Push, Full system.
Stability from outside vibration, impact, Self Latch System prevents disengaging.
Smaller size of applicable equipment & working space—smaller size, high density contacts.
Stability of assembling & prevents cross mating—multi, key alignment.
Suitable for EMI/EMC—High Screen Efficiency of Shell.
Connectors for special use such as dustproof, waterproof, vacuum, high voltage.
Adds reliability and improves performance to system design.

Materials and Finishes

Shells & Nuts : Brass, Chrome Plating

Insulators : LCD

Contacts : Copper alloy, 50micron inch gold per MIL-G-45204,
Type II, Class 1 over 10micron inch nickel

Electrical

Dielectric Strength : 100 VDC.

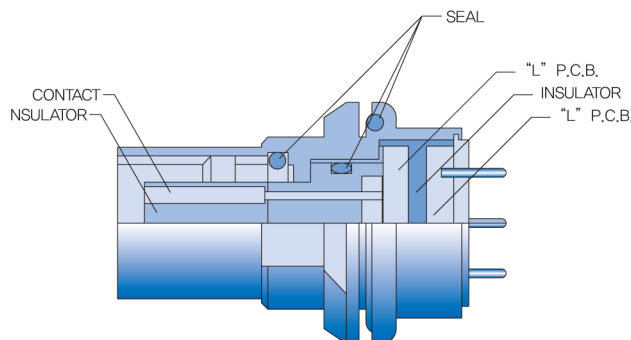
Working Voltage : 24VDC.

Insulation Resistance : 10,000 Meg ohms, Min.

Contact Resistance (Mated) : 0.050 Ohms, Max.

Insertion Loss(Typical) per MIL-STD-220.(25°C no load) : 50dB Min.(100MHz to 10GHz)

Operating Temperature Range : -55°C to +85°C

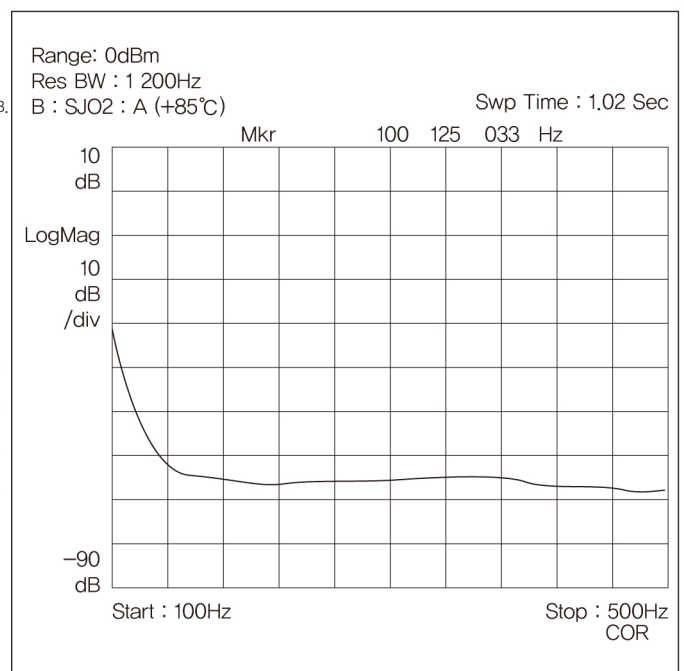


TYPE	C	L	Voltage	Current
A	15,000 pF	1.2 μ H	<24VDC	<2.0A
B	20,000 pF	1.8 μ H	<24VDC	<2.0A

Mechanical

Air Pressure : 2.5 psi.

Durability : 1500 cycles, mate and unmate.

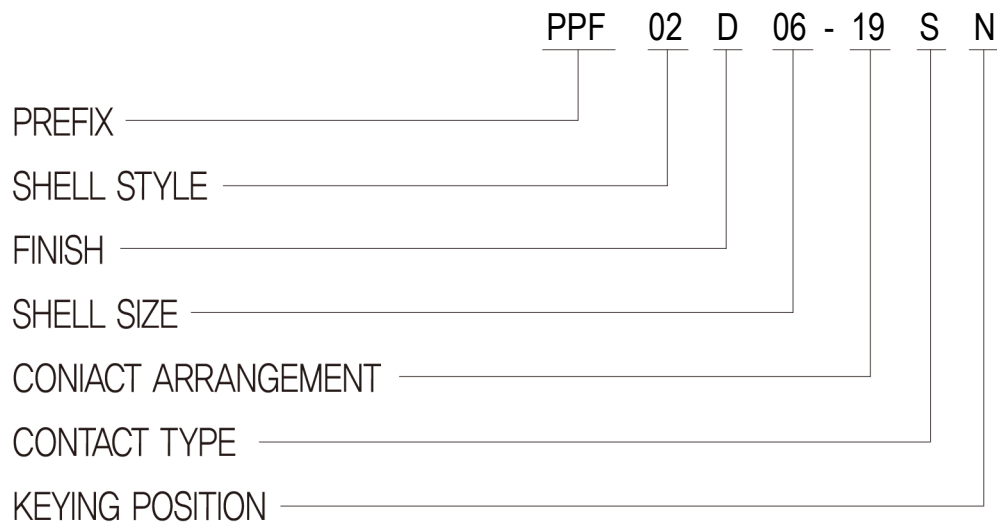


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FILTER

PUSH-PULL FILTER CONNECTORS



SHELL STYLE

02 : EMI, RFI FILTERED RECEPTACLE
06 : PLUG, PUSH-PULL SELF-LATCHING

CONTACT TYPE

P – PIN
S – SOCKET

FINISH

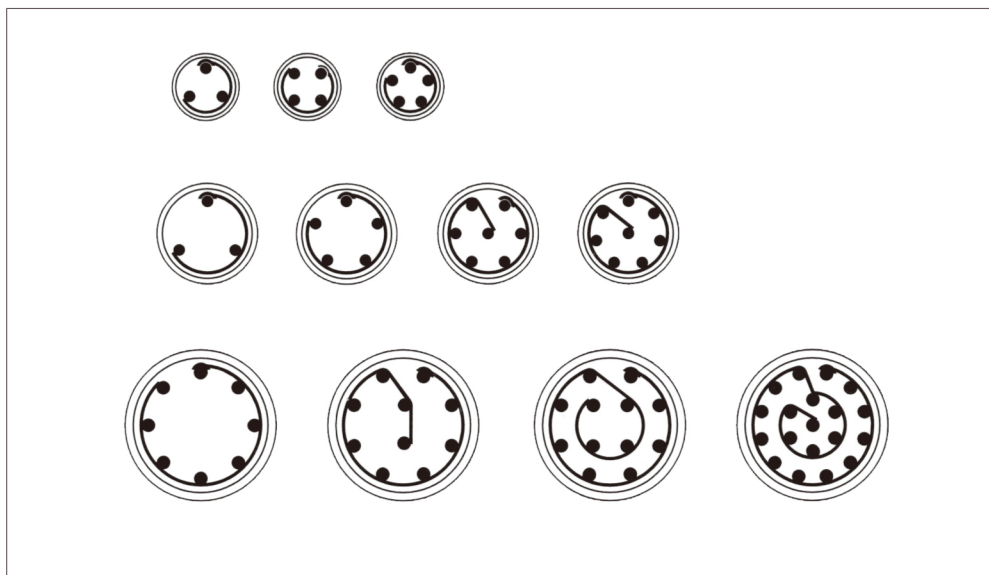
D : NICKEL PLATE(BLACK)
E : TIN PLATE
N : STAINLESS, NICKEL PLATE

KEYING POSITIONS N, A

DEGREES	A °
A	135 °
B	180 °

SHELL SIZE

02, 04, 06



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