ITT

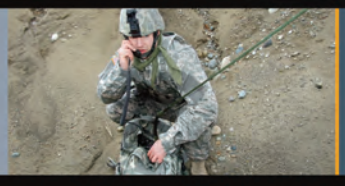
Interconnect Solutions
Cannon, VEAM, BIW

Enabling innovative "Chip on Flex"

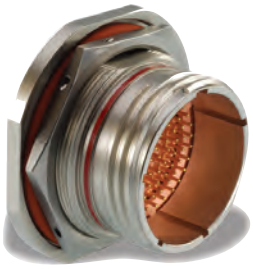
filter technology providing over

1000 cycles

of extreme thermal shock



Engineered for life



ITT's new light weight, state of the art Cannon Chip-on-Flex filter connector technology provides filtering and Transient Voltage Suppression (TVS) with a significant improvement in thermal shock and vibration. In the new Cannon Chip-on-Flex design, the internal thermal shock stresses have been virtually eliminated. The ceramic planar array capacitor block has been replaced by a flex circuit where individual chip capacitors are surface mounted on a pad adjacent to the feed thru contact. The result is a very robust filter connector with superior mechanical performance and improved reliability. We can add surface mounted TVS devices to protect individual circuits from EMI Lightning / ESD voltage surge.

- up to 15% reduction in weight
- meets 1000 cycles of thermal shock

Performance and Material Specifications

MATERIALS AND FINISHES

Shell	Aluminum alloy*
Insulator	High grade plastic/epoxy
Contacts	Copper alloy, gold plate
Grommet and Seal	Silicone base elastomer
Jam Nut	Aluminum alloy*
Grounding Spring	Beryllium copper, gold plate

*Finish as noted in How to Order section.

PERFORMANCE

Vibration; Series III

a). MIL-STD-1344, Method 2005, Condition VI, Letter J (Random, 8 hrs in 2 axis at high temp)

b.) MIL-STD-1344, Method 2005, MIL-DTL-38999 Figure 25 (Random, 8 hrs in 2 axis, no weights)

Mechanical Shock

MIL-STD-1344, Method 2004, 300g half sinusoidal shocks

Thermal Shock

MIL-STD-1344, Method 2003, 25 cycles of temperature cycling

ELECTRICAL (Size #16, #20 and #22)

Filter Description		Low Freq.	Mid Freq.	Std. Freq.	High Freq.
Catalog Indicator		L	M	T	H
Voltage Rating		200 VDC - 120 VAC rms 400 Hz			
Current Rating (amp DC)		15 amp - size 16/7.5 amp - size 20/5.0 amp, size 22			
Insulation Resistance, 2 min. electrification time max. at 25˚C		5,000 megohms min. @ 100 VDC			
DWV, sea level, with 500 microamps max. charge/discharge		300 VDC size 22 500 VDC size 16 & 20		500 VDC	
Capacitance at 1 KHz, 0.1 V rms Picofarads		32,000 45,000	8,000 12,000	3300 5000	850 1,300
Attenuation per MIL-STD-220 at 25˚C with no applied voltage or current.	Freq. MHz				
	0.1	2 min.	-	-	-
	1	10 min.	2 min.	-	-
	2	16 min.	7 min.	2 min.	-
	10	40 min.	18 min.	8 min.	2 min.
	100	60 min.	55 min.	45 min.	30 min.
	500 to 1000	60 min.	60 min.	55 min.	50 min.
Filter Type/Construction		Pi	Pi	Pi	Pi

Consult factory for higher or mixed attenuation values and higher voltage ratings.

How to Order - CFKJL/CFKJ/CFKJA/CFKJB

C	F	K	J	A	0	E	*	N	*	L	P	N	P	B1

CoF Type
CF - Filter
CFSS - Surge Suppression

Product Prefix
(MIL-DTL-38999)

MIL-DTL-38999 Series
I - L
II - blank
III - A
IV - B (receptacles only)

Shell Style
0 - Front Wall Mount Receptacle
2 - Front Box Mount Receptacle
3 - Rear Wall Mount Receptacle
5 - Rear Box Mount Receptacle
7 - Jam Nut Mount Receptacle
6 - Plug - EMI Grounded
8 - In-line Adapter

(Note - styles 2, 3 and 5 for Series I & II only)

* Shell size and Insert Arrangements per MIL-DTL-38999.

Termination
E - pc tail, .250 extension, .020ø size 22, .035Ø size 20, .060ø size 16
C - solder pot, .250 extension
S - crimp piggy-back
W - wire wrap, .400 extension, .025 square size 22

Shell Size

Insert Arrangement

Finish
N - Electroless Nickel (prefered)
B - Olive Drab Chromate over Cadmium over Nickel
R - Zinc alloy over Ni (RoHS compliant)

Standard Capacitance Range
H - 1100pF ±20%
T - 4200pF ±20%
M - 10,100pF ±20%
L - 38,000pF ±20%
N - No filter

Contact Type
P - pin
S - socket
PS - adapter pin side @ receptacle end
SP - adapter socket side @ receptacle end

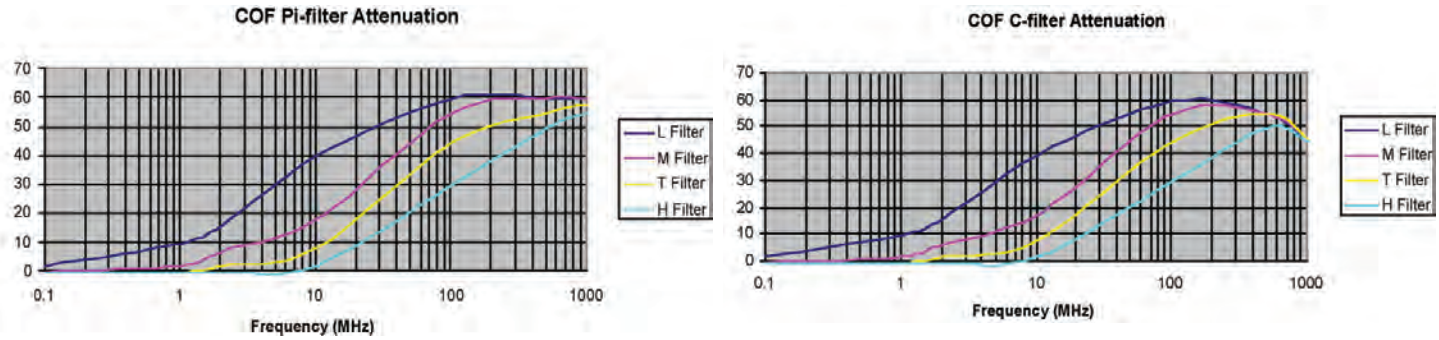
Polarization
N, A, B, C, D, E
per MIL-DTL-38999

Filter Type
C - C filter
P - Pi filter
F - L filter
N - No filter

TVS Type (See page E-18)

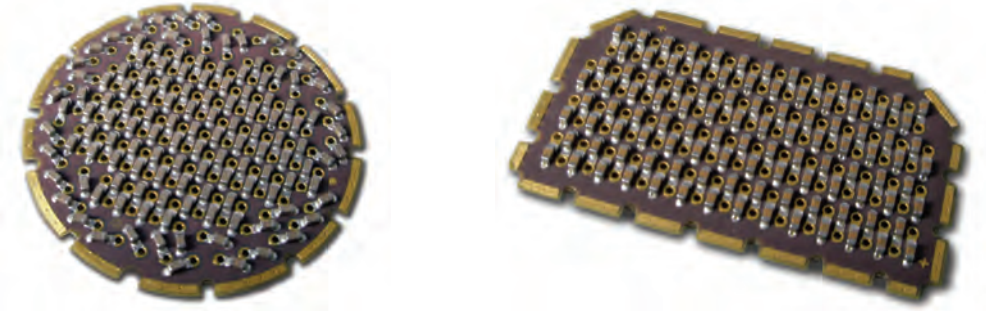
Dimensions shown in inches (mm)
Specifications and dimensions subject to change

Typical Filter Performance



Preferred CoF TVS Device Values

BIPOLAR				
Type	**Breakdown Voltage (V_{BR})**	**V_{RM} Test Current**	**Working Voltage (V_{RM})**	**Leakage Current at V_{RM}**
B1	7.1 to 9.3	10mA	5.5	20?A
B2	11 to 16	1mA	9	20?A
B3	15.9 to 21.5	1mA	14	20?A
B4	22 to 28	1mA	18	20?A
B5	37 to 46	1mA	30	20?A



UNIPOLAR				
Type	**Breakdown Voltage (V_{BR})**	**V_{RM} Test Current**	**Working Voltage (V_{RM})**	**Leakage Current at V_{RM}**
U1	11.4 to 12.7	5mA	8	0.1?A
U2	14.3 to 15.8	5mA	10.5	0.05?A
U3	16.8 to 19.1	5mA	12.6	0.05?A
U4	18.8 to 21.2	5mA	14	0.05?A
U5	20.8 to 23.3	5mA	15.4	0.05?A
U6	64.6 to 71.4	2mA	47.6	0.05?A

Note: Surge suppression also available in ARINC 600 and 404 connector families; consult factory.
Other TVS values are available. Consult factory for more information.

Table of Contents

Engaging view, pin insert

Series I, III & IV	9-35	11-5	11-98	11-35	13-8	13-98	13-35
Series II	8-35	10-5	10-98	10-35	12-8	12-98	12-35
No. of Contacs	6 #22D	5 #20	6 #20	13 #22D	8 #20	10 #20	22 #22D
Service Ratings	M	I	I	M	I	I	M

Series I, III & IV	15-5	15-18	15-19	15-35	-	17-8	17-26	17-35
Series II	14-5	14-18	14-19	14-35	16-99	16-8	16-26	16-35
No. of Contacs	5 #16	18 #20	19 #20	37 #22D	21 #20,2 #16	8 #16	26 #20	55 #22D
Service Ratings	II	I	I	M	I	II	I	M

Series I, III & IV	19-32	19-35	21-16	21-35	21-41
Series II	18-32	18-35	20-16	20-35	20-41
No. of Contacs	32 #20	66 #22D	16 #16	79 #22D	41- #20
Service Ratings	I	M	II	M	I

Series I, III & IV	23-21	23-35	23-53	23-55
Series II	22-21	22-35	22-53	22-55
No. of Contacs	21 #16	100 #22D	53 #20	55 #20
Service Ratings	II	M	I	I

Series I, III & IV	25-29	25-35	25-61
Series II	24-29	24-35	24-61
No. of Contacs	29 #16	128 #22D	61 #20
Service Ratings	I	M	I

Filter

F

Dimensions shown in inches (mm)
Specifications and dimensions subject to change