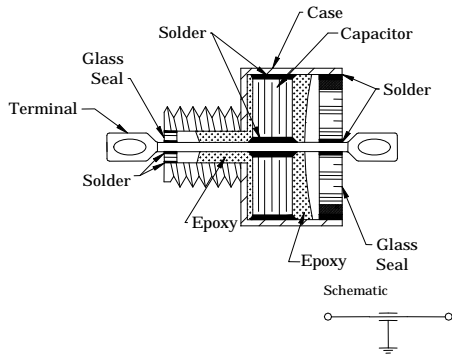


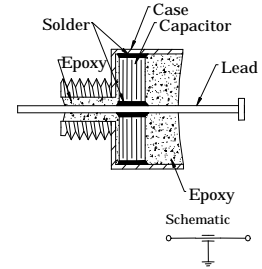
EMI FILTERS "C" TYPE

BROADBAND

Hermetic C-Section Broadband Filter



Potted C-Section Broadband

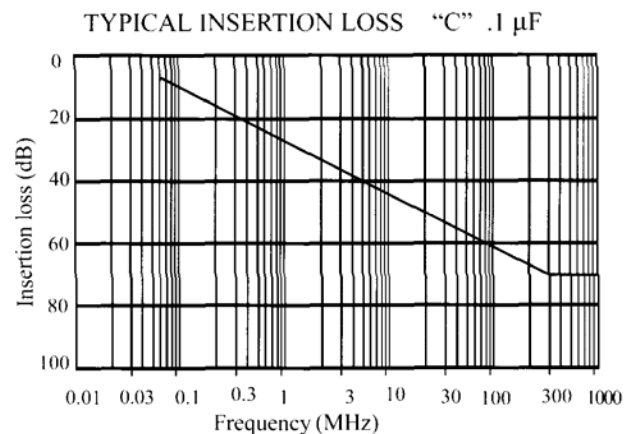
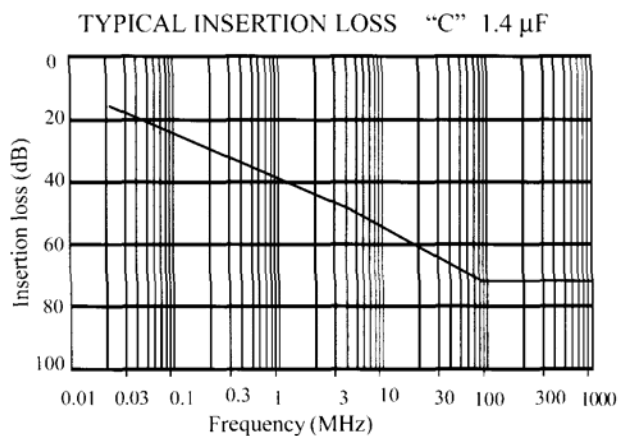


FEATURES:

- QPL to MIL-F-28861/1.
- Fully environmentally protected.
- Thread bushing intended for bulkhead mounting.
- Solder coated terminals.
- High capacitance values for excellent insertion loss.
- Tin-lead, silver, or gold plating.

APPLICATIONS:

Lower cut-off frequency requirements along with higher voltage ratings dictate the use of relatively larger size broadband style filters. The high density monolithic multilayer discoidal capacitor is the basic element in PA&E's broadband "C" type feed-thru's. All parts listed throughout this section of the catalog utilize exclusively, ceramic material with dielectric constant (K) of 1700 and temperature characteristic of X7R or BX. A "C" section is the simple single element feed-thru filter suitable for applications in which source and load impedances are relatively high and moderate insertion loss curve slope of 20 dB / decade is satisfactory. Although the series inductance of this three terminal device is minimized due to its mechanical configuration, resonant dips are to be expected between 10-50 MHz, depending on the size and capacitance values. It should be noted that at increasing capacitance the cut-off frequency (3dB point) decreases and insertion loss gradient is not affected.



BROADBAND

EMI FILTERS "C" TYPE

GENERAL SPECIFICATIONS

Capacitance / Tolerance:	Measured @ 1 KHz and .1-1 Vrms, 25°C / -0% +100%
Dissipation Factor:	2.5% max @ 1 KHz and .1-1 Vrms, 25°C
Insulation Resistance:	100 GΩ or 1000 MΩ -mF, whichever is less @ 25°C, WVDC
Working Voltage:	50 VDC to 400 VDC and 125 to 240 VAC, 400Hz
Dielectric Withstanding Voltage:	250 % of WVDC min. @ 25°C for 5±1 sec, 50 mA max chg. Current
Volt-Temperature Limit:	+10% -30% @ WVDC and -55°C to +125°C
Current Rating:	10 Amp and 15 Amp
DC Resistance:	.005Ω max.
Insertion Loss:	Measured per Mil-STD-220, IL between any two adjacent specified frequencies shall be that of the lower of the two frequencies in order to accommodate resonant dips.
Operating Temperature:	-55°C to +125°C
Storage Temperature:	-65°C to +150°C
Materials: Case	Brass, ½ hard per QQ-B-626 (composition #22) or CRS Iron-nickel alloy (alloy 52) per ASTM F-30
Terminals	
Finish: Case	Silver per QQ-S-365 / Gold or Tin-Lead Optional
Terminals	Silver per QQ-S-365 / Gold or Tin-Lead Optional
Applicable MIL Specifications:	Mil-F-28861 / Mil-F-15733 / Mil-C-83439
Environmental Test Spec:	Mil-STD-202
Thermal Shock:	Method 107, Condition A except step 3 @ 125°C
Immersion:	Method 104, Condition A (Hermetic devices only)
Salt Spray:	Method 101, Condition B
Moisture Resistance:	Method 106 (Hermetic devices only)
Barometric Pressure:	Method 105, Condition B
Resistance to Soldering Heat:	Method 210, Condition B
Seal:	Method 112, Condition A / Hermetically sealed parts only
Vibration:	Method 204, Condition D
Shock:	Method 213, Condition I
Terminal Strength:	Method 211, Condition A
Solderability:	Method 208
Life:	Method 108, Condition D

Marking per Mil-STD-130

Filter body size permitting:

PA&E logo

PA&E part number

Date code

INSTALLATION GUIDE

Although PA&E filters are rugged with excellent resistance to physical damage, good working practices should be utilized in the installation process to avoid possible post-installation problems.

1) Maximum recommended mounting torque should be applied to the nut only and observed as follows:

Thread size	0-80	2-56	4-40 UNC	8-32 UNC	12-32 UNC	1/4-28 UNF	5/16-24 UNF
Mount torque	10 in. oz.	18 in. oz.	3 in. lbs.	3-5 in. lbs.	6-8 in. lbs.	7-9 in. lbs.	7-9 in. lbs.

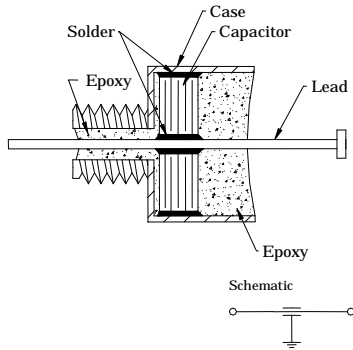
2) Avoid bending or flexing terminals at the point of exit from the glass or epoxy seal to preserve the integrity of the seal and/or ceramic capacitor.

3) Solder connections to the terminals should be performed with temperatures not exceeding 230°C, placing a heat sink between soldering point and filter body whenever possible.

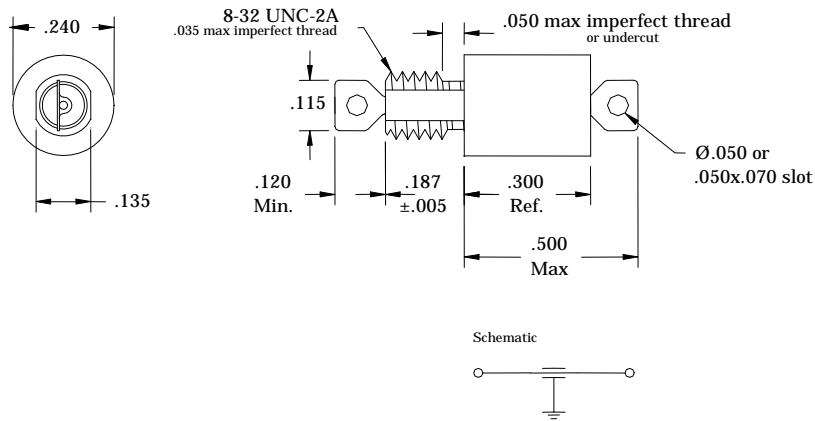
EMI FILTERS "C" TYPE

BROADBAND

Potted C-Section Broadband Filter



Hermetic C-Section Broadband Filter



TOLERANCES: ± .010 AND AS NOTED.

PA&E FILTERS PART NUMBER	WORKING VOLTAGE (VDC)	I _{dc} (A)	MIN CAP (μF)	MIN IR (MΩ)	MAX R _{dc} (MΩ)	MINIMUM INSERTION LOSS (dB) Per Mil-STD-220							
						30 KHz	100 KHz	150 KHz	300 KHz	1 MHz	10 MHz	100 MHz	1 GHz
3116-6643-394**	50	10	.39	2000	.005	3	12	15	21	32	40	58	70
3126-6643-254**	100	10	.25	3000	.005	-	10	13	19	30	40	56	70
3136-6643-104**	200	10	.1	5000	.005	-	5	8	13	22	38	50	70
3136-6643-753**	200	10	.075	10000	.005	-	-	-	8	18	37	46	65
3136-6643-503**	200	10	.05	10000	.005	-	-	-	3	15	34	45	60
3136-6643-253**	200	10	.025	10000	.005	-	-	-	-	10	30	40	55
3166-6643-103**	300	10	.01	10000	.005	-	-	-	-	4	20	35	50

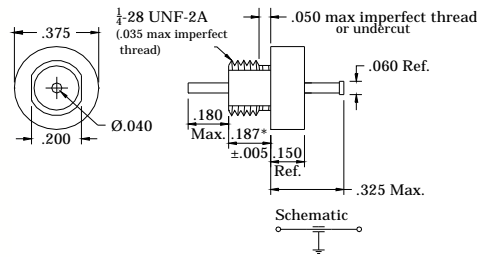
Details subject to change without notice.

** PART NUMBERS ARE INCOMPLETE. PLEASE SEE PAGE 49 TO COMPLETE THE NUMBERS.

BROADBAND

EMI FILTERS "C" TYPE

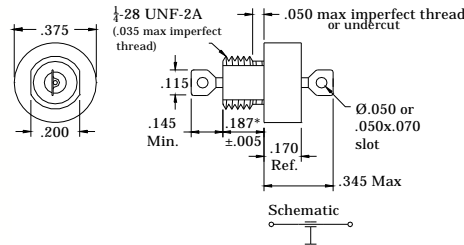
Epoxy Seal C-Section Broadband Filter



FOR .312 THREAD LENGTH, SUBSTITUTE 7 FOR 6 IN THE SEVENTH DIGIT OF THE PART NUMBER
TOLERANCES: ± .010 AND AS NOTED

PA&E FILTERS PART NUMBER	WORKING VOLTAGE (VDC)	I _{dc} (A)	MIN CAP (μF)	MIN IR (MΩ)	MAX Rdc (MΩ)	MINIMUM INSERTION LOSS (dB) Per Mil-STD-220							
						30 KHz	100 KHz	150 KHz	300 KHz	1 MHz	10 MHz	100 MHz	1 GHz
3118-7466-145**	50	15	1.4	500	.005	15	25	28	34	42	44	70	70
3118-7466-125**	50	15	1.2	500	.005	13	23	26	31	40	42	70	70
3128-7466-754**	70	15	.75	1000	.005	8	19	22	28	38	40	64	70
3128-7466-504**	70	15	.5	2000	.005	4	14	17	23	34	40	60	70
3128-7466-304**	100	15	.3	3000	.005	-	12	15	20	30	40	56	70
3128-7466-154**	100	15	.15	5000	.005	-	6	9	14	25	38	52	70
3138-7466-104**	200	15	.1	10000	.005	-	5	8	13	22	38	50	70
3138-7466-503**	200	15	.05	10000	.005	-	-	-	3	15	34	45	60
3168-7466-253**	300	15	.025	10000	.005	-	-	-	-	10	30	40	55

Hermetic C-Section Broadband Filter



FOR .312 THREAD LENGTH, SUBSTITUTE 7 FOR 6 IN THE SEVENTH DIGIT OF THE PART NUMBER
TOLERANCES: ± .010 AND AS NOTED

PA&E FILTERS PART NUMBER	WORKING VOLTAGE (VDC)	I _{dc} (A)	MIN CAP (μF)	MIN IR (MΩ)	MAX Rdc (MΩ)	MINIMUM INSERTION LOSS (dB) Per Mil-STD-220							
						30 KHz	100 KHz	150 KHz	300 KHz	1 MHz	10 MHz	100 MHz	1 GHz
3118-7563-145**	50	15	1.4	500	.005	15	25	28	34	42	44	70	70
3118-7563-125**	50	15	1.2	500	.005	13	23	26	31	40	42	70	70
3128-7563-754**	70	15	.75	1000	.005	8	19	22	28	38	40	64	70
3128-7563-504**	70	15	.5	2000	.005	4	14	17	23	34	40	60	70
3128-7563-304**	100	15	.3	3000	.005	-	12	15	20	30	40	56	70
3128-7563-154**	100	15	.15	5000	.005	-	6	9	14	25	38	52	70
3138-7563-104**	200	15	.1	10000	.005	-	5	8	13	22	38	50	70
3138-7563-503**	200	15	.05	10000	.005	-	-	-	3	15	34	45	60
3168-7563-253**	300	15	.025	10000	.005	-	-	-	-	10	30	40	55

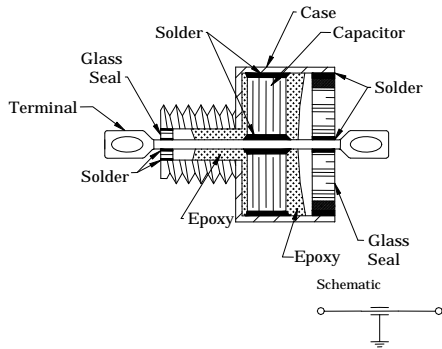
Details subject to change without notice.

** PART NUMBERS ARE INCOMPLETE. PLEASE SEE PAGE 49 TO COMPLETE THE NUMBERS.

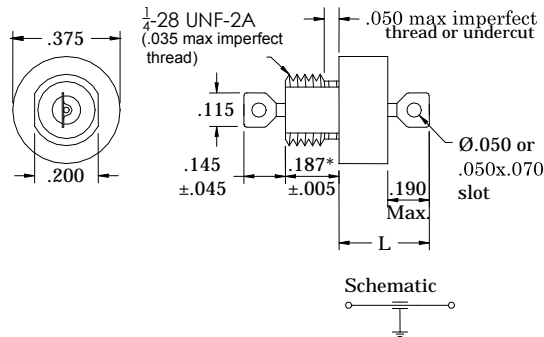
EMI FILTERS "C" TYPE

BROADBAND

Hermetic C-Section Broadband Filter



Hermetic C-Section Broadband Filter



FOR .312 THREAD LENGTH, SUBSTITUTE 7 FOR 6 IN THE SEVENTH DIGIT OF THE PART NUMBER
TOLERANCES: ± .010 AND AS NOTED.

PA&E FILTERS PART NUMBER	L MAX (in.)	WORKING VOLTAGE (VDC)	I _{dc} (A)	MIN CAP (μF)	MIN IR (MΩ)	MAX R _{dc} (MΩ)	MINIMUM INSERTION LOSS (dB) Per Mil-STD-220							
							30 KHz	100 KHz	150 KHz	300 KHz	1 MHz	10 MHz	100 MHz	1 GHz
3118-7863-405**	.730	50	15	4.0	100	.005	22	32	36	42	50	60	70	70
3118-7863-285**	.530	50	15	2.8	300	.005	20	30	34	40	45	54	70	70
3118-7863-215**	.530	50	15	2.1	300	.005	17	27	31	37	45	48	70	70
3118-7863-145**	.410	50	15	1.4	500	.005	15	25	28	34	42	44	70	70
3128-7863-125**	.410	100	15	1.2	500	.005	13	23	26	31	40	42	70	70
3128-7863-754**	.410	100	15	.75	1000	.005	8	19	22	28	38	40	64	70
3138-7863-504**	.410	200	15	.5	2000	.005	4	14	17	23	34	40	60	70
3138-7863-304**	.410	200	15	.3	3000	.005	-	12	15	20	30	40	56	70
3148-7863-154**	.410	115VAC	15	.15	5000	.005	-	6	9	14	25	38	52	70

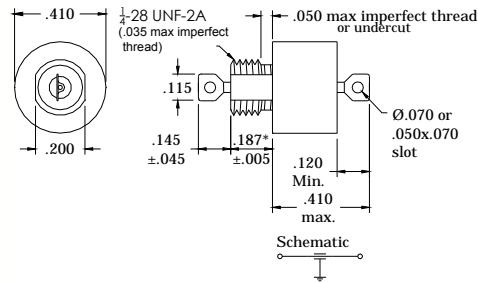
Details subject to change without notice.

** PART NUMBERS ARE INCOMPLETE. PLEASE SEE PAGE 49 TO COMPLETE THE NUMBERS.

BROADBAND

EMI FILTERS "C" TYPE

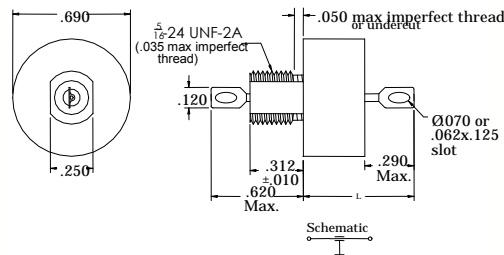
Hermetic C-Section Broadband Filter



FOR .312 THREAD LENGTH, SUBSTITUTE 7 FOR 6 IN THE SEVENTH DIGIT OF THE PART NUMBER
TOLERANCES: ± .010 AND AS NOTED

PA&E FILTERS PART NUMBER	L MAX (in.)	WORKING VOLTAGE (VDC)	I _{dc} (A)	MIN CAP (μF)	MIN IR (MΩ)	MAX R _{dc} (MΩ)	MINIMUM INSERTION LOSS (dB) Per Mil-STD-220							
							30 KHz	100 KHz	150 KHz	300 KHz	1 MHz	10 MHz	100 MHz	1 GHz
3118-8763-125**	.410	50	15	1.2	500	.005	13	23	26	31	40	50	70	70
3128-8763-704**	.410	70	15	.7	1000	.005	8	19	22	28	38	45	64	70
3128-8763-454**	.410	100	15	.45	2000	.005	4	14	17	23	34	42	60	70
3138-8763-254**	.410	150	15	.25	4000	.005	-	9	12	18	29	40	56	70
3148-8763-154**	.410	125VAC	15	.15	5000	.005	-	6	9	14	25	38	52	70
3168-8763-104**	.410	300	15	.1	7000	.005	-	5	8	13	22	38	50	70

Hermetic C-Section Broadband Filter



PA&E FILTERS PART NUMBER	L MAX (in.)	WORKING VOLTAGE (VDC)	I _{dc} (A)	MIN CAP (μF)	MIN IR (MΩ)	MAX R _{dc} (MΩ)	MINIMUM INSERTION LOSS (dB) Per Mil-STD-220							
							30 KHz	100 KHz	150 KHz	300 KHz	1 MHz	10 MHz	100 MHz	1 GHz
3118-9E83-955**	.750	50	15	9.5	100	.005	30	40	45	50	60	70	70	70
3118-9C83-475**	.650	50	15	4.7	100	.005	25	35	40	45	55	65	70	70
3128-9C83-285**	.650	100	15	2.8	600	.005	20	30	34	40	48	60	70	70
3138-9C83-145**	.650	200	15	1.4	500	.005	15	25	28	34	42	52	70	70
3168-9C83-125**	.650	300	15	1.2	500	.005	13	23	26	321	40	50	70	70
3168-9C83-904**	.650	300	15	.9	1000	.005	10	21	24	30	39	47	66	70
3168-9C83-754**	.650	300	15	.75	1000	.005	8	19	22	28	38	45	64	70
3108-9C83-454**	.650	400	15	.45	2000	.005	4	14	17	23	34	42	60	70
3148-9C83-304**	.650	115VAC	15	.3	3000	.005	-	12	15	20	30	40	56	70
3158-9C83-154**	.650	240VAC	15	.15	5000	.005	-	6	9	14	25	38	52	70

Details subject to change without notice.

** PART NUMBERS ARE INCOMPLETE. PLEASE SEE PAGE 49 TO COMPLETE THE NUMBERS.