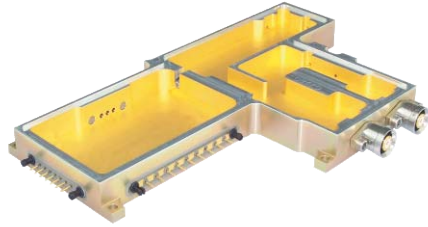


# Hermetics For Extreme Environments

## Integrated Packaging



Using technologies such as Kryoflex® and explosively bonded metals, SOURIAU PA&E designs and manufactures hermetic packaging for extreme environments — whether it's integrating components that protect satellites deep in space or connectors for oil-drilling tools that bore deep below the earth's surface. By pairing our Kryoflex and explosively bonded metal technologies, we can build hermetic packages using precision laser welding rather than solder joints, thus eliminating the two most common causes for hermetic package failure: solder joint fatigue and cracked glass.

## Rectangular DC Connectors



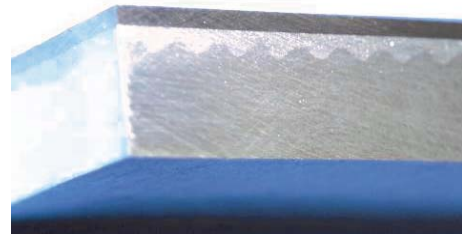
SOURIAU PA&E's hermetically-sealed rectangular DC connectors exceed most mil-spec requirements and are designed for use in military and commercial applications, where environmental conditions require an extremely rugged and reliable hermetic seal. The uniquely-controlled CTE characteristics, chemical bonding properties and polycrystalline structure of Kryoflex allows SOURIAU PA&E to manufacture these hermetic connectors with 304L stainless steel shells and gold-plated beryllium-copper contacts to maintain excellent electrical performance and environmental characteristics.

## RF/Microwave Connectors



SOURIAU PA&E's 50 Ohm hermetic RF/Microwave connectors are designed for use in military and commercial applications where environmental conditions require an extremely rugged and reliable hermetic seal. Low-loss Corning 7070 glass is used for dependable electrical performance. SOURIAU PA&E manufactures these hermetic RF connectors from a variety of compatible shell and contact materials, in both laser weld and solder-in styles, which provide excellent electrical and environmental performance characteristics.

## Bonded Metals



SOURIAU PA&E has been the innovative leader in the explosive metal working field for over 30 years. Our customers have access to some of the world's most exciting metal working technologies, such as: Explosive Metal Bonding, Explosive Metal Forming, Explosive Shock Hardening and Dynamic Powder Metal Compaction. These high-strain rate technologies offer unique metal working advantages that can help our customers achieve the "impossible."

## SOURIAU PA&E

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ISO 9001:2008/  
AS9100

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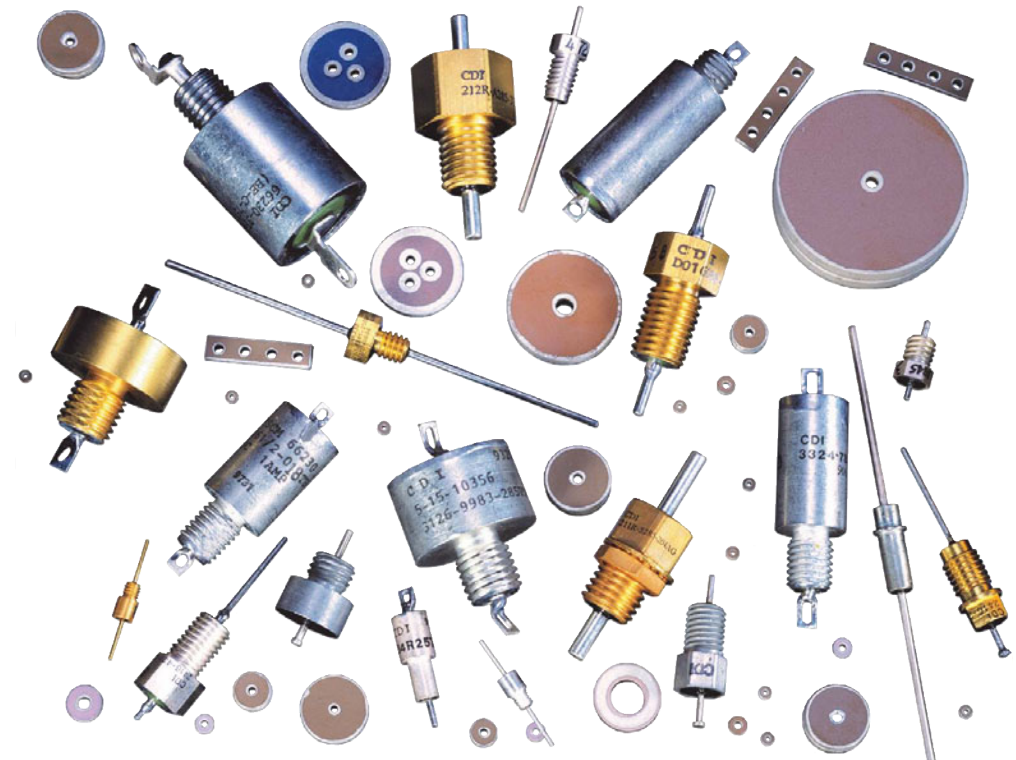


## CERAMIC EMI FILTERS

# SOURIAU PA&E

## Ceramic EMI Filter Solutions

- ✓ Eyelet
- ✓ Broadband
- ✓ Bolt style
- ✓ Filter pins
- ✓ Custom assemblies



SOURIAU PA&E's advanced electromagnetic interference (EMI) solutions use capacitors and inductors to produce the highest quality "pure signal" filter products.



## Selecting the right solution

Selecting an appropriate filter style and type can be difficult. Some of the factors a designer must consider are:

1. Real estate limitations (size, weight, mounting type).
2. Environmental conditions (moisture resistance, shock, vibration).
3. Electrical characteristics (voltage, current, capacitance, insertion loss).

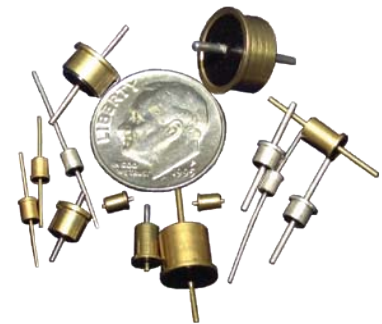


## Discoidal Capacitors

SOURIAU PA&E's discoidal feed-thru capacitors are the basic element in ceramic EMI-RFI filters. They are available in NPO and X7R temperature coefficients. Sizes range from .040" to 1.100" OD with capacitance values of 5pF to 5μF, and voltage ratings of 0 to 500 VDC. SOURIAU PA&E's cap-arrays are a custom-designed line of multiple element feed-thru capacitors available in virtually any physical configuration to satisfy your packaging requirements.

## Eyelet Style Filters

SOURIAU PA&E's eyelet style filters are small and efficient, ranging in size from .086" to .400" in diameter with capacitance values of 5 pF to 1.2 microfarad. Designed for solder mount, these hermetically sealed filters come in silver and gold finishes for easy installation. Available in C or L section filters with voltage ratings of 50 to 400 VDC (as well as 125 VAC), and current capacity of 5 to 15 amps.



INSTALLATION METHOD	BODY OUTSIDE DIAMETER	THREAD SIZE	TYPICAL LENGTH	TYPE OF SEAL	SECTIONS
Solder-In	.086	N/A	.500	Epoxy	C-L
Solder-In	.128	N/A	.625	Epoxy	C-L
Solder-In	.168	N/A	.650	Epoxy	C-L
Solder-In	.250	N/A	.650	Epoxy	C-L
Solder-In	.400	N/A	.700	Epoxy	C-L

## Filter Pins

SOURIAU PA&E's filter pins are solder-mount, environmentally-sealed PI type filters with voltage ratings of 50 to 300 VDC, capacitance values of 5000 pF to .5 microfarad, and a current capacity of 10 amps.. Capacitor usage is the fundamental difference between our filter pins and traditionally constructed units. The more rugged discoidal capacitors are far less susceptible to thermal and mechanical stress and used exclusively at SOURIAU PA&E.



INSTALLATION METHOD	BODY OUTSIDE DIAMETER	THREAD SIZE	TYPICAL LENGTH	TYPE OF SEAL	SECTIONS
Solder-In	.122	N/A	1.350	Epoxy	TT
Solder-In	.138	N/A	1.360	Epoxy	TT
Solder-In	.187	N/A	1.480	Epoxy	TT
Solder-In	.240	N/A	1.500	Epoxy	TT



## Bolt Style Filters

SOURIAU PA&E's bolt style filters are hermetically or environmentally sealed and come in C, L or PI configurations. Voltage ratings range from 50 to 500 VDC. DC or low-frequency current capacity is typically .5 to 200 amps. Available in gold, silver or tin-plated, bolt style cases in #0-80 through 3/4-16 thread sizes. Custom configurations are also available.

INSTALLATION METHOD	BODY OUTSIDE DIAMETER	THREAD SIZE	TYPICAL LENGTH	TYPE OF SEAL	SECTIONS
Screw-In	.070—.072	#0-80 UNF	.250	Epoxy	C
Screw-In	.095—.105	#2-56 UNC	.500	Epoxy	C-L-TT
Screw-In	N/A	#4-40 UNC	.600	Epoxy	C-L
Screw-In	N/A	#8-32 UNC	1.200	Epoxy or Hermetic	C-L-TT
Screw-In	N/A	#12-32 UNEF	1.260	Epoxy or Hermetic	C-L-TT
Screw-In	N/A	5/16-24 UNF	1.310	Epoxy or Hermetic	C-L-TT

## Broadband Filters

SOURIAU PA&E's broadband filters are low-pass filters available as single element capacitors with insertion loss performance of 20db/decade, L section filters at 40db/decade or PI and T section filters at 60 db/decade. Voltage ratings range from 50 VDC to 240 VAC, and current capacity is .10 to 50 amps. Custom L, PI and T sections are also available.



INSTALLATION METHOD	BODY OUTSIDE DIAMETER	THREAD SIZE	TYPICAL LENGTH	TYPE OF SEAL	SECTIONS
Bolt-On	.240	#8-32 UNC	.840	Hermetic	C-L
Bolt-On	.375	1/4-28 UNF	1.080	Hermetic	C-L-TT-T
Bolt-On	.400	1/4-28 UNF	1.130	Hermetic	C-L-TT
Bolt-On	.680	5/16-24 UNF	1.600	Hermetic	C-L-TT-T

## Custom Assemblies

SOURIAU PA&E designs custom filter assemblies to fulfill a wide range of high-reliability, high-density packaging requirements. Integrated, end-to-end capabilities support all phases of electrical and mechanical design, fabrication and testing. Contact our applications engineering department for more information.

