

EMI Filter Inserts

Make Your Standard Connector into an EMI Filtered Connector in Seconds

Cinch Connectivity, in conjunction with Quell Technologies, EESeal®, now offers Quick-Turn, EMI Filter Inserts for connector EMI issues found in everyday applications. The filter inserts are made of a silicone rubber and of the same resilient material used in interfacial seals in harsh environment/ ruggedized military connectors.

These custom filter solutions can be developed and shipped within a matter of weeks and are drop in solutions for your current applications. The filters can also be used with standard QPL Cinch connectors to reduce lead times that come with designing a fully custom planar filtered connector.

Features

- Meets Several Harsh Environment Specifications based on application (See specifications on page 3)
- Custom designs with 1-2 week turnarounds.
- Can be used with current Cinch QPL connectors, reducing lead times that come with a full custom solution.
- No special tools necessary for insertion. Easy to use drop in filters

Benefits

- Quick and easily to retrofit to any connector with EMI and transient protection
- Easy to install and remove in field by non expert personnel with no special tools
- Virtually “invisible” once installed - they look like a normal part of a connector
- Maintains environmental seal of host connector
- Adapts to real world variations and stress commonly associated with connectors and connector pins (bent pins, severe shock & vibration, rough handling, etc.)
- Rugged design proven via Mil-Std and FAA/DO-160C environmental stress testing
- Extremely low weight
- Filter can be designed/modified very late in design process

Applications

- Military
- Aerospace
- Space
- Medical
- Transportation



How EESeal® Filters Work



Advantage Over Existing EMI Filters

Install an EESeal® FAST At The Test Site - Test It, Remove It, Re-Test to Confirm Baseline and Reinstall!

No circuit-board, substrate or brittle materials of any kind. EESeal® is made with a silicone elastomer material, like the interfacial seal in most circular connectors so it doesn't create air pockets or defeat the existing environmental seal.

Components and wiring are fully embedded in protective silicone material (components cannot "pop off" and won't be damaged or cracked during installation or use) all external and internal wiring is gold plated (50-70µin Au over Ni flash per MIL-G-45204); withstands severe temperature ranges and exposure to many deteriorating influences such as ozone, chemicals, aging and UV.

How It Works

EESeal® EMI Filter inserts (and Transient Suppressors) for connectors are an easy retrofit compared to bulky adapters, filtered connectors, and other traditional devices. Our EESeals® are made of resilient silicone rubber that is quick and easy to install, even in the field. Their patented construction allows them to survive even extreme environmental abuse.

By using just your finger tip, you can easily retrofit and install an EESeal® insert in your connector in just seconds.

Design Flexibility

EESeals® offer you the flexibility to have your insert your way. A wide variety of SMD components, typically 0402 or 0603 devices, can be selected to meet your application's exact requirements.

Your EESeal® can have components (capacitors, resistors, MOV's, TVS's and more) connected Pin to Pin, Pin to shell, shorts, opens, etc. and every pin can have a different individual treatment.

Typical Capacitor Ranges

Connector Insert Density	WVDC (Working Voltage DC)	Max Capacitance Values(min 1pf)
Very High	50VDC	1µF
	1000VDC	8.2nf
Medium to Low	50VDC	4.7µF
	2000VDC	4.7nf

* Other values may be available

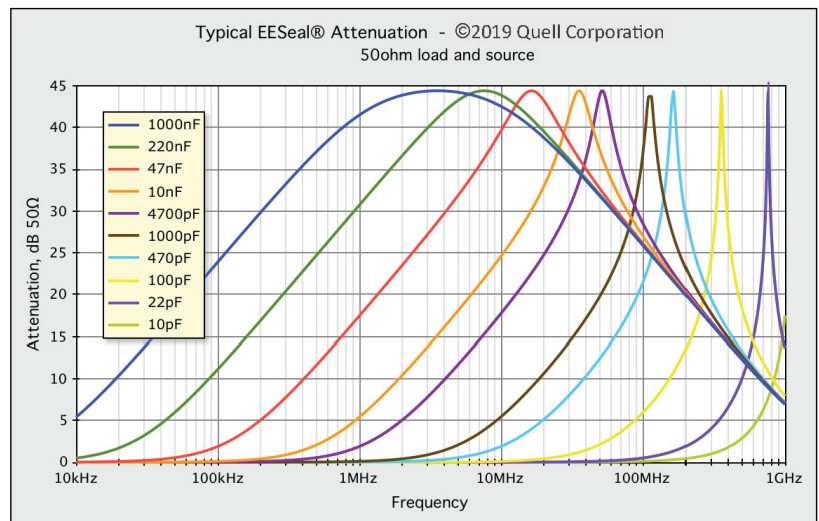
Silicone Rubber Packaging Technology

Virtually "invisible" once installed, EESeal® inserts for connectors are made of the same super-resilient material used in the interfacial seals of high-reliability, ruggedized military connectors.

The secret behind EESeal® is Quell's innovative electronic packaging technology. Our patented Elastomeric Body and Adaptive Interconnect System suspends, isolates and protects discrete electrical components.

EESeals® adapt to the mating forces within a connector and the surfaces of the EESeal® morph into a shape that mimics the cork and bottle structure of the connector interface.

Typical Capacitor Attenuation Curve - MIL-C-38999 Connector



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The EESeal® EMI Filter insert can withstand extreme mechanical & environmental abuse. Environmental and mechanical tests conducted by independent laboratories show that even severe environments do not affect the integrity of EESeal® FilterSeal EMI filter inserts or the host connectors.

Specifications

Shock	MIL-STD-1344A Method 2004.1, Test Condition C (except 150g instead of 100g): 1/2 sine, 6 ms, 6 shocks/axis, total 3 axes
Vibration	MIL-STD-1344A Method 2005.1, Test Condition IV: 10-2000Hz, 20g, 4 hours/axis, total 3 axes MIL-STD-810E paragraph 514.4: 3.75Hz @ 0.07g to 33.75Hz @ 2.5g to 500Hz @ 0.002g2/Hz, 4 hours/axis, total 3 axes
Salt Spray	Method 1001.1: 48 hr exposure at 95°F
Thermal Cycling	RTCA/DO160C: -55C to +125C, 20 cycles
Humidity Exposure	RTCA/DO160C Category A: 95%RH @ 50C for 24hr, @ 30C for 24hr
Temperature-Altitude	MIL-STD-5400 4.6.2.3 Class 1A: -55C to 125C, 30,000 ft
Durability	MIL-STD-1344A Method 2016: 250, 375 & 500 mate/demate cycles
Fluid Immersion	MIL-STD-1344A Method 1016, Fluids a, c, d & e, with connectors mated: 5 minute immersion @ 85C in each of Hydraulic Fluid, 2 Lubricating Oils & JP-5
Removal Re-Use Assessment	28pin EESeal® completely removed from connector and re-inserted 12 times
Porosity	MIL-STD-1344A Method 1017: Contacts exposed to 70% HNO3 (concentrated reagent grade nitric acid) for 75 minutes at 23C, 10 minutes in air @ 125C, no corrosion observed
Fungus	MIL-STD-810F Method 508.5 modified to 84 days
Out-gassing	ASTM E-595-07, TML <1%; CVCM <0.1%, Post bake required, 24 hours @300F

