Qnnect

qnnectnow.com

Hermetic RF / Microwave Connectors

Overview

Designed for military and commercial use where upper frequency, microwave applications are necessary, Qnnect's hermetic 50 Ohm RF/Microwave connectors provide excellent electrical and environmental performance characteristics.

Technical Advantages

Aluminum or Titanium Compatible

Qnnect's RF connector line uses our explosive metal welding technology to create bi-metal connector bodies. Kovar pins are sealed with glass into the lower, Kovar portion of the body while the upper portion of the connector body can be aluminum or titanium for weld transitions into lightweight aluminum or titanium hermetic electronic housings.

Laser Weld Integration

These interconnect components are designed to be integrated via state-of-the-art laser welding processes. This process eliminates solder and, as a result, a key point of potential hermetic failure: solder fatigue. Laser weld integration also means connectors can easily and safely be replaced, even when a package is fully populated - no need for high heat to re-flow solder prior to extraction.

Reliable, High Performance

Our connectors operate up to 100GHz and deliver a hermetic leak rate of <1x10-9 He at 1 ATM reliably from -65°C to 200°C. High performance variants operate in the 20GHz range.

Format Options

RF/Microwave connectors from Qnnect are available in a variety of configurations including: flange mount; push-on (GPO, GPPO), and thread-in (SMA, SSMA) form factors. Qnnect also manufactures a hermetic BMA (Blind Mate Attach) connector uses our industry-proven hermetic RF connector technology with industry-standard MIL-DTL 38999/23 Series III shell interfaces. The atmospheric side of the connector contains #8 BMA coaxial contacts per MIL-STD-348. The hermetic side contains SMA contacts per the same MIL-STD.

RF/Microwave Flange Mount Connectors

Qnnect's 50 Ohm flange mount connectors are compatible with lightweight materials such as aluminum and titanium, as well as conventional iron/nickel alloys. These connectors are available for both laser-weld and solder-in applications.

RF Series	Description
100	RF Connector, 50 Ohm Flange Mount
150	RF Connector, 50 Ohm Flange Mount, High Performance (over 26 GHz)

RF/Microwave Push-On Connectors

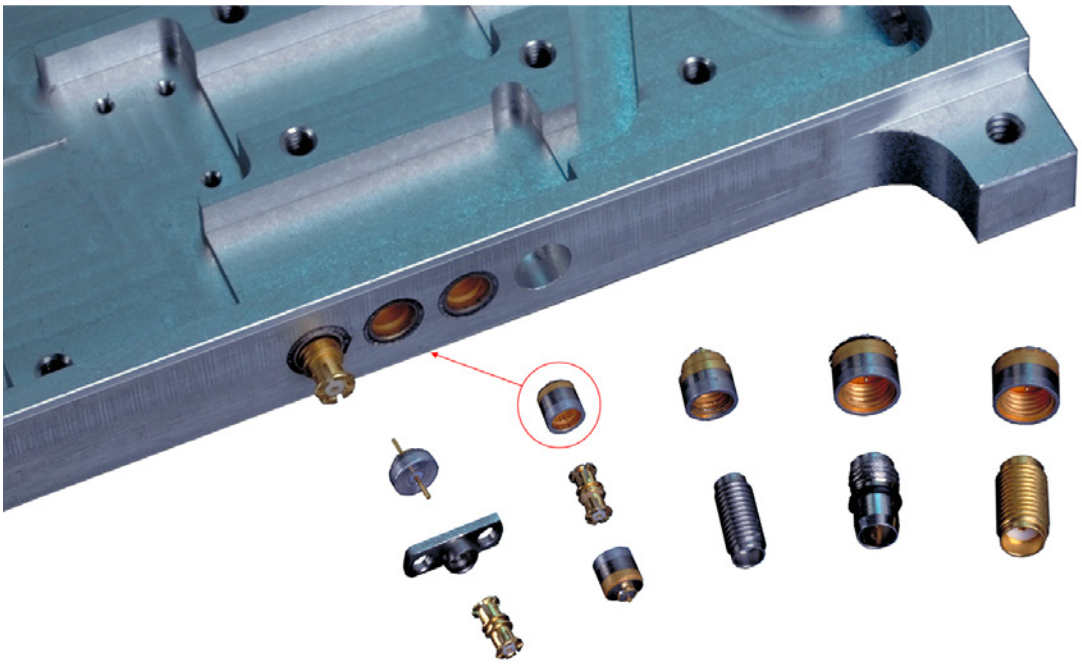
Qnnect's 50 Ohm push-on connectors are compatible with lightweight materials such as aluminum and titanium, as well as conventional iron/nickel alloys. These connectors are available for both laser-weld and solder-in applications. We offer a standard laser-weld option (LWP®), a miniature version (LLWP®), a standard solder mount option (SMP) and a miniature version (SSMP). Our push-on connectors are manufactured in accordance with MIL-STD-348. Connector interfaces are equivalent to GPO/GPPO.

RF Series	Description
200	RF Connector, 50 Ohm LWP (Laser Weld Push-On)
250	RF Connector, 50 Ohm LWP, High Performance (over 26 GHz)
300	RF Connector, 50 Ohm LLWP, (Little Laser Weld Push-On)
350	RF Connector, 50 Ohm LLWP, High Performance (over 26 GHz)
400	RF Connector, 50 Ohm SMP (Solder Mount Push-On)
450	RF Connector, 50 Ohm SMP, High Performance (over 26 GHz)
500	RF Connector, 50 Ohm SSMP (Small Solder Mount Push-On)
550	RF Connector, 50 Ohm SSMP, High Performance (over 26 GHz)

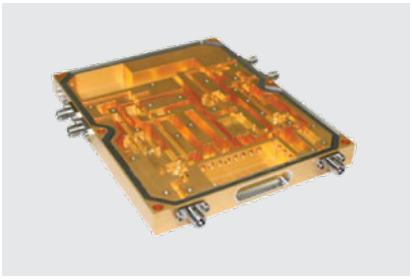
RF/Microwave Thread-In Connectors

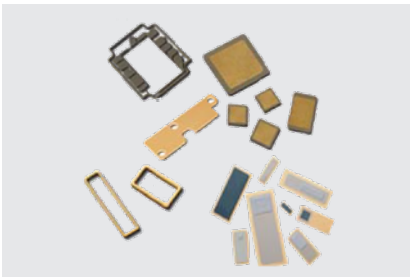
Qnnect's 50 Ohm thread-in connectors are compatible with lightweight materials such as aluminum and titanium, as well as conventional iron/nickel alloys. These connectors are available for both laser-weld and solder-in applications. We offer a standard option (SMA) and a miniature version (SSMA) with a thread size of 1/4-36 UNS-2B. Our thread-in connectors are manufactured in accordance with MIL-STD-348.

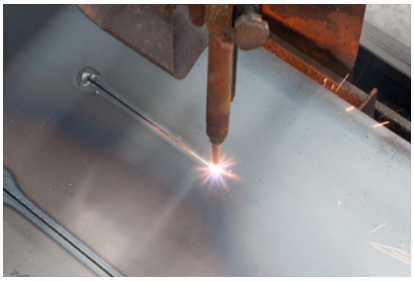
RF Series	Description
600	RF Connector, 50 Ohm SMA (Thread-In)
650	RF Connector, 50 Ohm SMA, High Performance (over 26 GHz)
700	RF Connector, 50 Ohm SSMA (Small Thread-In)
750	RF Connector, 50 Ohm SSMA, High Performance (over 26 GHz)



Material Compatibility	Designed For Aluminum, Titanium Or Iron/Nickel Alloy Applications
Contact Material	Iron/Nickel Alloys
Shell Finish Options	Passivated, Nickel/Gold Plated Or Chromate Conversion Coated As Applicable
Contact Finish	Nickel/Gold Plating
Pin Diameter	012", .015", .018", .020" And Custom
Interface	Per Mil-Std-348
Nominal Impedance	50 Ohms
Leak Rate	Less Than 1x10-9 Cc/Sec Helium At 1 Atmospheric Differential Pressure
Thermal Cycling	Tested To 500 (Minimum) Thermal Cycles Without Hermetic Performance Loss
Insulation Resistance	Connectors Provide Greater Than 5,000 Megohms At 500 Vdc When Tested In law Mil-Std-1344, Method 3003
Dielectric Withstanding Voltage	Connectors Exhibit No Evidence Of Breakdown Or Flashover When Tested In law Mil-Std-1344, Method 3003
Corrosion	Connectors Meet Salt Spray Test In law Mil-Std-1344, Method 3003
Operating Temp.	-65°C To 200°C







Other Products & Services:

Hermetic Electronic Packaging

We bring customers' hermetic electronic package designs to life and use unique materials and manufacturing processes to help optimize for weight savings, footprint reduction, thermal transfer and more. Our precision machining capabilities allow us to meet very tight tolerances for Kovar, aluminum and titanium housings. We deliver the custom packaging solutions that ensure the electronics within those devices are unaffected by whatever extreme environmental condition they operate in.

Enabling Components

There's more to a reliable hermetic package solution than a box and connectors and we manufacture components to ensure a module's long term viability. We produce: getters to prevent build-up of contaminants; solder preforms that aid in attaching electronic circuitry; ring frames that become integral side walls of a hermetic package; and custom thermal spreaders that ensure heat from a chip or substrate is efficiently dissipated. To top things off, we also manufacture package lids.

Laser and Integration Services

We provide high-speed laser welding, sealing and marking with consistent accuracy. Our laser welding expertise also extends to the manufacture of custom designed/build laser welding, cutting & sealing systems for customers who wish to bring those capabilities in house.

Qnnect

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