Hermetic RF/Microwave Connectors

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

- **High Performance** ■ 20+ GHz
- **Reliable** ■ Laser weld installation
- **Hermetic** ■ $< 1 \times 10^{-9}$cc/sec Helium at 1 ATM
- **Flexible Solutions** ■ Variety of styles available
### RF/Microwave Connectors

#### RF/Microwave Flange Mount Connectors
PA&E’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.

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>PAE-RF Series 100</td>
<td>RF Connector, 50 Ohm Flange Mount</td>
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<tr>
<td>PAE-RF Series 150</td>
<td>RF Connector, 50 Ohm Flange Mount, High Performance (over 20 GHz)</td>
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</tbody>
</table>

#### RF/Microwave Push-On Connectors
PA&E’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.

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<tbody>
<tr>
<td>PAE-RF Series 200</td>
<td>RF Connector, 50 Ohm LWP (Laser Weld Push-On)</td>
</tr>
<tr>
<td>PAE-RF Series 250</td>
<td>RF Connector, 50 Ohm LWP, High Performance (over 20 GHz)</td>
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<tr>
<td>PAE-RF Series 300</td>
<td>RF Connector, 50 Ohm LLWP, (Little Laser Weld Push-On)</td>
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<tr>
<td>PAE-RF Series 350</td>
<td>RF Connector, 50 Ohm LLWP, High Performance (over 20 GHz)</td>
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<tr>
<td>PAE-RF Series 400</td>
<td>RF Connector, 50 Ohm SMP (Solder Mount Push-On)</td>
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<tr>
<td>PAE-RF Series 450</td>
<td>RF Connector, 50 Ohm SMP, High Performance (over 20 GHz)</td>
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<tr>
<td>PAE-RF Series 500</td>
<td>RF Connector, 50 Ohm SSMP (Small Solder Mount Push-On)</td>
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<tr>
<td>PAE-RF Series 550</td>
<td>RF Connector, 50 Ohm SSMP, High Performance (over 20 GHz)</td>
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#### RF/Microwave Thread-In Connectors
PAE’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.

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<tr>
<td>PAE-RF Series 600</td>
<td>RF Connector, 50 Ohm SMA (Thread-In)</td>
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<tr>
<td>PAE-RF Series 650</td>
<td>RF Connector, 50 Ohm SMA, High Performance (over 20 GHz)</td>
</tr>
<tr>
<td>PAE-RF Series 700</td>
<td>RF Connector, 50 Ohm SSMA (Small Thread-In)</td>
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<tr>
<td>PAE-RF Series 750</td>
<td>RF Connector, 50 Ohm SSMA, High Performance (over 20 GHz)</td>
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</table>
### RF/Microwave Connectors

#### 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
- 0.012”, 0.015”, 0.018”, 0.020” and Custom

#### INTERFACE
- Per MIL-STD-348

#### NOMINAL IMPEDANCE
- 50 Ohms

#### LEAK RATE
- Less than $1 \times 10^{-9}$ cc/sec Helium at 1 Atmospheric Differential Pressure

#### INSULATION RESISTANCE
- Connectors Provide Greater than 5,000 Megohms at 500 VDC When Tested in IAW MIL-STD-1344, Method 3003

#### DIELECTRIC WITHSTANDING VOLTAGE
- Connectors Exhibit no Evidence of Breakdown or Flashover When Tested in IAW MIL-STD-1344, Method 3003

#### CORROSION
- Connectors Meet Salt Spray Test in IAW MIL-STD-1344, Method 3003

#### OPERATING TEMP.
- -65°C to 200°C
Hermetic Solutions for Extreme Environments

Integrated Packaging

Using technologies such as Kryoflex® and explosively bonded metals, 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.

DC Connectors

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 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.

Ceramic EMI Filters

PA&E’s military-qualified Filter Products Group specializes in the design and manufacture of high-reliability low-pass EMI filters. Utilizing multi-layer ceramic discoidal capacitors and ferrite inductors, PA&E’s engineering staff are experts at designing EMI filtering solutions for electronic circuits operating in hostile EMI environments. In-house manufacture and testing, in accordance with MIL-PRF-28861, Class B (QPL) and PA&E class H, are standard practice.

Bonded Metals

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.

For further information contact us at sales@pacaero.com or visit our web site www.pacaero.com