

2.92mm Series RF Connectors

The 2.92mm RF connector is a high performance coaxial connector designed to work to 40 GHz. With an air dielectric interface and a threaded coupling for low reflections and reliable performance, this connector was designed to fill the gap between SMA (currently available up to 18/26.5 GHz) and millimeter-wave connectors. The 2.92mm is mechanically compatible with SMA and 3.5mm connectors, making it easy to integrate into existing applications. Typical applications are in test & measurement, telecom, satellite, and high-speed digital systems.



KEY FEATURES & BENEFITS

- Frequency Range - Standard choice for Microwave and Millimeter-wave up to 40 GHz (microwave frequency).
- Dual Compatibility - Connects to SMA and 3.5mm (formerly sub-miniature version A) connectors without adapters.
- Robust - Designed for high reliability and mating cycle.
- Tight coupling - Threaded coupling for high mechanical stability, less affected by vibration.
- Excellent Electrical Characteristics - Low VSWR and low insertion loss keep signal losses to a minimum.
- Nominal 50 Ω impedance - Ensures compatibility with the majority of RF/microwave applications.
- Wide Industry Applications - Ideal for telecom, aerospace and defense, test & measurement, and R&D.

PRODUCT SPECIFICATIONS

Electrical Properties*	
Impedance	50 Ω
Frequency Range	DC to 40 GHz
Voltage Rating	250 VRMS (max.)
Dielectric Withstanding Voltage	750 VRMS (max.)
Contact Resistance (Center)	≤ 6.0 m Ω (typical)
Contact Resistance (Outer)	≤ 2.0 m Ω (typical)
Insulation Resistance	≥ 5000 M Ω
VSWR	≤ 1.25 @ 40 GHz (typical, varies by design)
Insertion Loss	$\leq 0.05 * f(\text{GHz})$ dB (typical), depending on connector size
RF Leakage	≥ -100 dB @ 20 GHz (typical)
Impedance	50 Ω

*reference website for specific part number specifications

PRODUCT SPECIFICATIONS CONTD.

Environmental Properties*	
Temperature Range	-25°C to +100°C, MIL-STD-202 Method 102, Cond C
Thermal Shock	MIL-STD-202, Method 107, Condition B (-65°C to +165°C)
Vibration	MIL-STD-202, Method 204, Condition D (20 G's)
Shock	MIL-STD-202, Method 213, Condition I (100 G's)
Moisture Resistance	MIL-STD-202, Method 106 (less Step 7b)
Corrosion (Salt Fog)	MIL-STD-202, Method 101, Condition B (48 hrs)
Altitude	MIL-STD-202, Method 105, Condition C (70,000 ft)
Durability	Meets stringent environmental & mechanical requirements for high-frequency use

*reference website for specific part number specifications

PRODUCT SPECIFICATIONS CONTD.

Mechanical Properties*	
Coupling Mechanism	Threaded (1/4-36 UNS-2A)
Mating Cycles	≥ 500 (standard); higher for test-grade
Recommended Mating Torque	7 – 10 in-lbs (0.9 – 1.1 Nm)
Cable Retention	Dependent on cable type & termination (crimp, solder, clamp)
Body Material	Stainless Steel or Passivated Stainless Steel
Center Contact Material	Beryllium Copper, Gold over Nickel plating
Outer Contact Material	Stainless Steel or Brass (Gold plated)
Dielectric/Insulator	Air / Low-loss plastic beads (Ultem®, PTFE)
Interface Dimensions	Conforms to IEEE-287 for Type K connectors, and MIL-STD-348

*reference website for specific part number specifications