

2.4mm Series Connectors

The 2.4mm connector is a precision threaded coaxial connector engineered for repeatable low-loss performance up to 50 GHz in microwave and millimeter-wave applications. It features a rugged mechanical design, reinforced female contacts and an air dielectric interface to provide unmatched durability and excellent electrical performance for advanced test and measurement equipment, satellite communications, radar, and next-generation telecommunications systems.



KEY FEATURES & BENEFITS

- Extended Frequency Range – Operates dependably up to 50 GHz for wide-ranging microwave and millimeter-wave applications.
- Robust Mechanical Design – Thickened outer wall and reinforced female sockets deliver superior durability and wear resistance.
- Precision Threaded Coupling – Provides stable, vibration-resistant connections for consistent high-frequency performance.
- Excellent Electrical Characteristics – Low VSWR and minimal insertion loss due to precision air dielectric construction.
- 50 Ohm Standard Impedance – Ensures seamless compatibility with RF and microwave systems.
- Intermateability – Mechanically compatible with 1.85mm connectors for flexible integration (adapters required for SMA, 2.92mm, 3.5mm).

PRODUCT SPECIFICATIONS

Electrical Properties*	
Impedance	50 Ohms
Frequency Range	DC to 50 GHz
Voltage Rating	Typically 100 VRMS (max.)
Dielectric Withstanding Voltage	300 VRMS (min.)
Contact Resistance	Center Contact: $\leq 6.0 \text{ m}\Omega$ (typical) Outer Contact: $\leq 2.0 \text{ m}\Omega$ (typical)
Insulation Resistance	$\geq 5000 \text{ M}\Omega$
VSWR (Voltage Standing Wave Ratio)	Typical: ≤ 1.25 @ 50 GHz (performance may vary by design; reference datasheet)
Insertion Loss	$\leq 0.03 * f(\text{GHz}) \text{ dB}$ (straight) $\leq 0.05 * f(\text{GHz}) \text{ dB}$ (right angle) (typical)
RF Leakage	$\geq -100 \text{ dB}$ @ 20 GHz (typical)

*reference website for specific part number specifications

PRODUCT SPECIFICATIONS CONTD.

Environmental Properties*	
Temperature Range	-65°C to +165°C (standard)
Thermal Shock	MIL-STD-202, Method 107, Test Condition B, except high temp up to +200°C
Vibration	MIL-STD-202, Method 204, Test Condition D (20 G's)
Shock	MIL-STD-202, Method 213, Test Condition I (100 G's)
Moisture Resistance	MIL-STD-202, Method 106
Corrosion (Salt Fog)	MIL-STD-202, Method 101, Test Condition B (48 hours)
Altitude	MIL-STD-202, Method 105, Test Condition C (70,000 ft)
Durability	Meets/exceeds MIL-PRF-39012 for environmental & mechanical performance

*reference website for specific part number specifications

PRODUCT SPECIFICATIONS CONTD.

Mechanical Properties*	
Coupling Mechanism	Threaded (0.75-20 UNF-2A, similar to 1.85mm)
Mating Cycles	≥ 500 cycles (standard); higher for test-grade
Recommended Mating Torque	7 - 10 in-lbs (0.9 - 1.1 Nm) (use calibrated torque wrench for best performance)
Cable Retention	Varies by cable type & termination (crimp, solder, clamp)
Body Material	Stainless Steel (typically passivated for corrosion resistance)
Center Contact Material	Beryllium Copper with Gold Plating (over Nickel)
Outer Contact Material	Stainless Steel
Dielectric/Insulator Material	Air / Low-loss plastic beads (e.g., Ultem®, PTFE)
Interface Dimesions	Conforms to IEEE 287-2007, MIL-STD-348

*reference website for specific part number specifications