

3.5mm Series Connectors

The 3.5mm RF connector is a high-performance precision coaxial connector designed for microwave frequencies up to 34 GHz. A rugged version of the SMA, the 3.5mm has a more rugged mechanical interface and an air dielectric for superior high frequency performance. The dielectric bead on the female contact prevents "springing" and creates reliable, repeatable connections. Fully intermateable with SMA connectors, the 3.5mm is an ideal upgrade for any system that requires better performance but still needs to maintain backwards compatibility. Applications include test and measurement, telecommunications, and high-frequency instrumentation.



KEY FEATURES & BENEFITS

- **Extended Frequency Range** - Operates reliably up to 34 GHz, providing superior performance compared to standard SMA connectors.
- **Intermateability with SMA**: A key advantage, allowing direct connection to SMA devices without the need for adapters, simplifying system integration and upgrading.
- **Robust** - Designed for high reliability and extending mating cycle life.
- **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 34 GHz
Voltage Rating	335 VRMS (max.)
Dielectric Withstanding Voltage	1000 VRMS (max.)
Contact Resistance (Center)	≤ 3.0 m Ω (typical)
Contact Resistance (Outer)	≤ 2.0 m Ω (typical)
Insulation Resistance	≥ 5000 M Ω
VSWR	≤ 1.25 @ 34 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	-65°C to +165°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	Designed to meet the stringent environmental and mechanical requirements of high-frequency applications, ensuring long-term reliability.

*reference website for specific part number specifications

3.5mm SERIES

PRODUCT SPECIFICATIONS CONTD.

Mechanical Properties*	
Coupling Mechanism	Threaded (1/4-36 UNS-2A)
Mating Cycles	≥ 500 (standard); higher for test-grade, often 1000+ cycles
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 3.5mm, and MIL-STD-348

*reference website for specific part number specifications