

M29504 Contacts

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Aptiv's M29504 fiber optic contacts are 100% qualified to the MIL-PRF-29504 performance specification. M29504 fiber optic removable termini are installed in circular connectors (MIL-DTL-38999 Series III and MIL-PRF-28876) and they are designed to protect and terminate the optical fiber. M29504 contacts are rugged and reliable, they feature zirconia ceramic ferrules, alignment sleeves, and they are precision engineered to provide low insertion loss, low back reflection, and long-term stable performance in the harshest military and aerospace environments.



KEY FEATURES & BENEFITS

- Superior Optical Performance – Low insertion loss and back reflection with precision zirconia ceramic ferrules.
- Precision Fiber Alignment – Captivated zirconia sleeves and floating design ensure accurate fiber-to-fiber mating.
- Rugged Mechanical Design – Withstands shock, vibration, temperature cycling, and repeated mating cycles.
- Environmental Sealing – Integrated seals protect against moisture, dust, and contaminants.
- Standard Compatibility – Fits size 16 cavities of MIL-DTL-38999 Series III and MIL-PRF-28876 connectors.
- Versatile Fiber Options – Supports both single-mode and multimode fibers with multiple ferrule bore sizes.
- Field-Termination & Repair – Supports efficient termination, polishing, and repair for simplified maintenance.
- Durable Materials – Stainless steel, beryllium copper, and ceramic construction for long service life.

PRODUCT SPECIFICATIONS

Electrical Properties	
Optical Insertion Loss	0.25 dB avg (single-mode), 0.45 dB avg (multimode)
Optical Return Loss	≥ -40 dB (PC polish), ≥ -50 dB (UPC/enhanced PC polish)
Operating Wavelengths	850 nm, 1300 nm, 1310 nm, 1550 nm
Optical Insertion Loss	0.25 dB avg (single-mode), 0.45 dB avg (multimode)
Environmental Properties	
Operating Temperature	to +150°C
Temperature Life	+150°C for 1000 hours
Thermal Cycling	MIL-STD-1344, Method 1003C (or similar)
Thermal Shock	MIL-STD-1344, Method 1003 (or similar)
Vibration	MIL-STD-1344, Method 2005 (e.g., Condition II & VI)
Mechanical Shock	MIL-STD-901C, Grade A (or MIL-STD-1344, Method 2015)
Salt Spray / Corrosion	MIL-STD-202, Method 101 (or MIL-STD-1344, Method 1001)
Pressure Sealing	32 psi (standard), 2,000 psi (with wiper seal option)
Humidity	MIL-STD-1344, Method 1002
Ozone Exposure	MIL-STD-1344, Method 1007

PRODUCT SPECIFICATIONS CONTD.

Mechanical Properties	
Mating Durability	500 cycles min (EIA-455-21)
Terminus Mating Force	5 lbs (22.2 N) nominal
Terminus Retention Force	22 lbs (97.9 N) min
Cable Retention Force	25 lbs (111.2 N) min
Ferrule Material	Zirconia Ceramic
Terminus Body Material	Stainless Steel (passivated)
Alignment Sleeve Material	Zirconia Ceramic
Retention Clip Material	Beryllium Copper (or beryllium-free equivalent)
Ferrule Diameter	1.25mm (LC-style) or 2.5mm (ST-style)
End Face Polish	PC, UPC, APC
Weight	1.0 grams max