



GORE™ 100 Series Connectors

Summary

GORE™ 100 Series Connectors are a super high density blindmate/push-on, high performance, microwave interconnect system. The connector series was developed as a response to the industry's demand for increased packaging density, low mass, and increased performance at higher frequencies.

The GORE™ 100 Series Connectors offer the lowest profile and mass for modular system designers. The connectors offer performance through 100 GHz while offering superior and repeatable RF properties. The connectors are designed to accommodate both radial and axial misalignment with negligible VSWR change.

The blindmate interfaces are robust and durable while being very light weight. A socket-to-socket bullet weighs less than 0.02 grams. All connector constructions use qualified mil standard materials. Instrument grade test adapters are available to 1.85 mm.



GORE™ 100 Series offers the lowest profile and mass

CONNECTOR MATERIALS

Center Contact and Selected Shrouds	Beryllium copper per ASTM B196 and/or B197, Gold plate per ASTM B488, Type I or II Code C over nickel plate underplate per AMS-QQ-N-290
Dielectrics	PTFE per ASTM D1710, TORLON™ per ASTM D5204, ULTEM™ per ASTM D5205
Standard Shrouds	Stainless steel per ASTM A582, Passivated per AMS-QQ-P-35
Hermetic Shrouds	Kovar sealed with Corning 7070 glass or equivalent

MECHANICAL PERFORMANCE FOR SHROUDS

	Full Detent	Limited Detent	Smooth Bore	Modified Smooth Bore	Ultra Smooth Bore
Force to Engage Max	3.0 lbs (1.4 kg)	2.5 lbs (1.1 kg)	2.0 lbs (0.9 kg)	1.5 lbs (0.7 kg)	1.25 lbs (0.6 kg)
Force to Disengage Min	2.0 lbs (0.9 kg)	1.0 lbs (0.5 kg)	0.5 lbs (0.2 kg)	0.25 lbs (0.1 kg)	0.12 lbs (0.05 kg)
Durability Cycles Min	100	500	1,000	5,000	10,000

ELECTRICAL PERFORMANCE

Impedance	50 ohms nominal
Frequency Range	DC-100 GHz
Temperature Range	-65 to +165°C
Corona Levels	125 VRMS at 70,000 ft
Dielectric Withstanding Volt.	325 VRMS at sea level 125 VRMS at 70,000 ft
Insulation Resistance	5,000 megaohms minimum
RF High Potential	200 VRMS at 5 MHz
Contact Resistance (max)	Center conductor 6.0 milliohms Outer conductor 2.0 milliohms
Insertion Loss (dB max)	0.001 + 0.012*√f (GHz)
RF Leakage	-80 dB at 3 GHz -65 dB at 3 to 26.5 GHz
VSWR ¹ DC to 23 GHz	1.10:1 typical
VSWR ¹ 23 to 26.5 GHz	1.15:1 typical
VSWR ¹ 26.5 to 40 GHz	1.25:1 typical

¹ Reference plane to reference plane. Performance listed is typical for the GORE™ 100 series socket-to-socket bullet part number 100-123-0100. Performance on other configurations may vary.

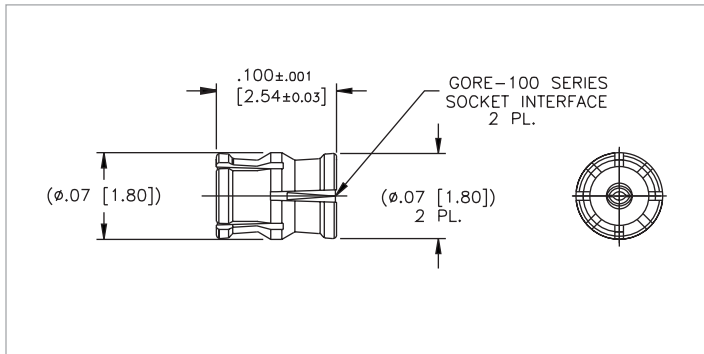


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MECHANICAL PERFORMANCE

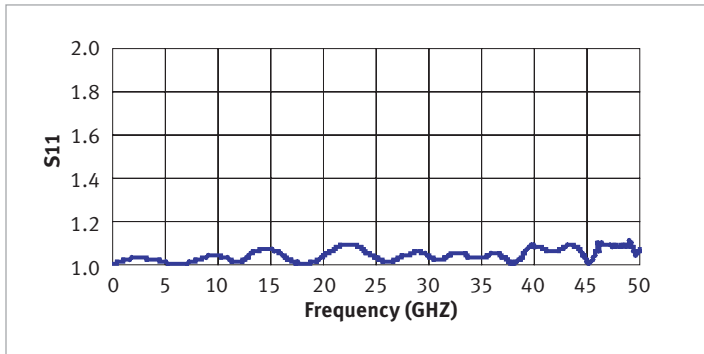
Radial Misalignment	± 0.012 in (0.30 mm)
Axial Misalignment	0 to 0.01 in (0.25 mm)
Center to Center Spacing Min	0.08 in (2.03 mm)

CONNECTOR DRAWING



Connector part number: 100-123-0100, GORE™ 100 series socket-to-socket bullet. Dimensions are in inches (millimeters).

TYPICAL VSWR PERFORMANCE



VSWR data is for connector part number 100-123-0100, GORE™ 100 series socket-to-socket bullet. Measurement includes VSWR of adapter pairs.

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TORLON is a trademark of E.I. du Pont de Nemours and Company, Inc.

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