W2 Series™

Phase Stable Cable Assembly (W205)
(18, 40, 50 & 67 GHz)

withwave
Next Generation Connectivity

W2 Series is a complete line of high-performance flexible microwave cable assemblies. The W205 Series features a low-density PTFE dielectric that provides a propagation velocity of 74%, delivering excellent phase and amplitude stability. Depending on the connector configuration, the ***W205 Series supports outstanding RF performance at frequencies up to 18, 40, 50 & 67 GHz***

Features

- High-performance flexible microwave cable assembly
- Low-density PTFE dielectric with 74% velocity of propagation
- Excellent phase and amplitude stability



Applications

- RF and microwave measurements
- Vector network analyzer (VNA) testing
- High-speed interconnection testing

Specification

Scope	Specification	W205 (50 & 67 GHz)
Physical	Center Conductor (mm)	0.51
	Insulator (mm)	1.52
	Outer Conductor 1 (mm)	1.72
	Outer Conductor 2 (mm)	2.04
	Jacket (mm)	2.40 ± 0.15
Electrical	Characteristic Impedance (Ohm)	50 ± 2 Ohm
	Velocity of Propagation (%)	Typical 74
	Shielding Effectiveness(dB)	-90
	VSWR (Max)	< 1.3
	Amplitude Stability (dB) *	<± 0.03 (up to 50 GHz) <± 0.05 (up to 67 GHz)
	Phase Stability (degree) *	<±3 (up to 50 GHz) <± 5 (up to 67 GHz)
	Attenuation (at 25 °C)	4.4 dB/m @ 40.0 GHz 5.0 dB/m @ 50.0 GHz 6.0 dB/m @ 67.0 GHz
Mechanical & Environmental	Weight (g/M)	16
	Min. bending radius (mm)	12 (Installation) 24 (Repeated)
	Operating Temperature	-40 ~+85 ℃ **

* Cable (length : 1 meter) was wrapped 360 degree around Φ 40 mm mandrel
** Adhesive type shrinkable tube: - -40 ~+85 ℃ / Non-adhesive type shrinkable tube: - -40 ~ + 125 ℃

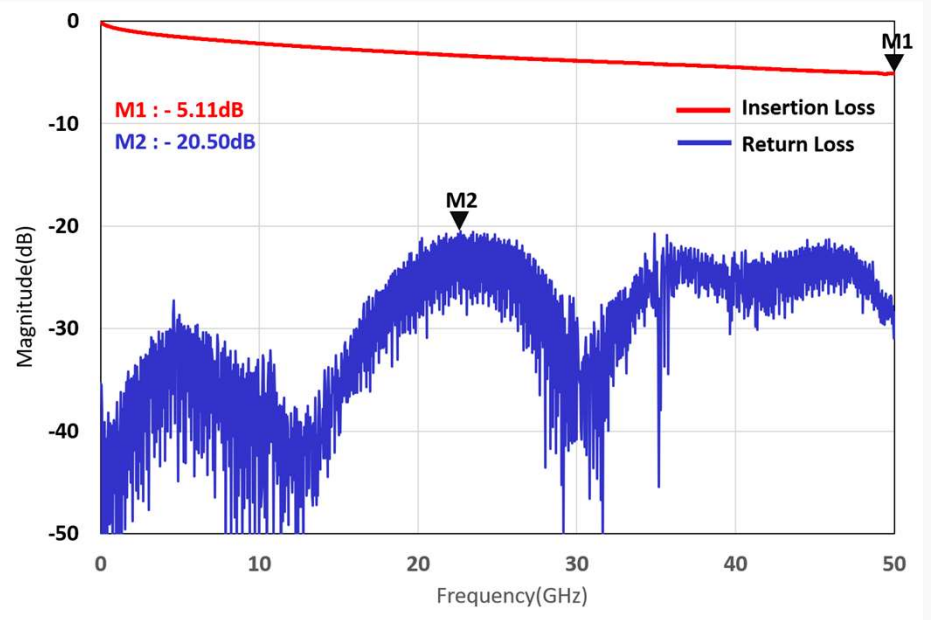
Test Result

W205 cable assembly

Part No. : W205-2M12M1-1M

- Frequency : 10 MHz to 50 GHz
- Connector : 2.4 mm (Male)
- Cable Length :1 meter

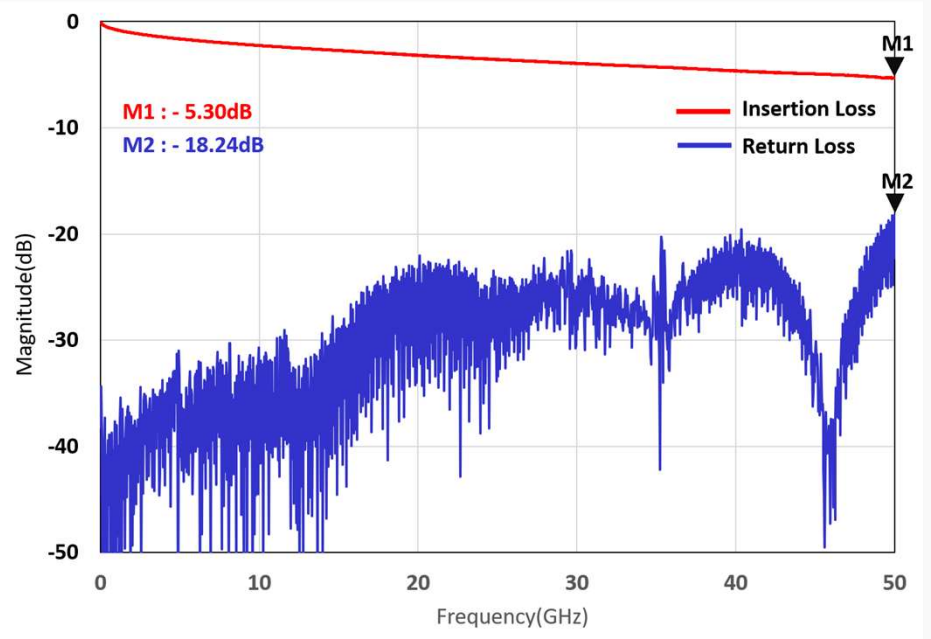




Part No. : W205-2F12F1-1M

- Frequency : 10 MHz to 50 GHz
- Connector : 2.4 mm (Female)
- Cable Length :1 meter





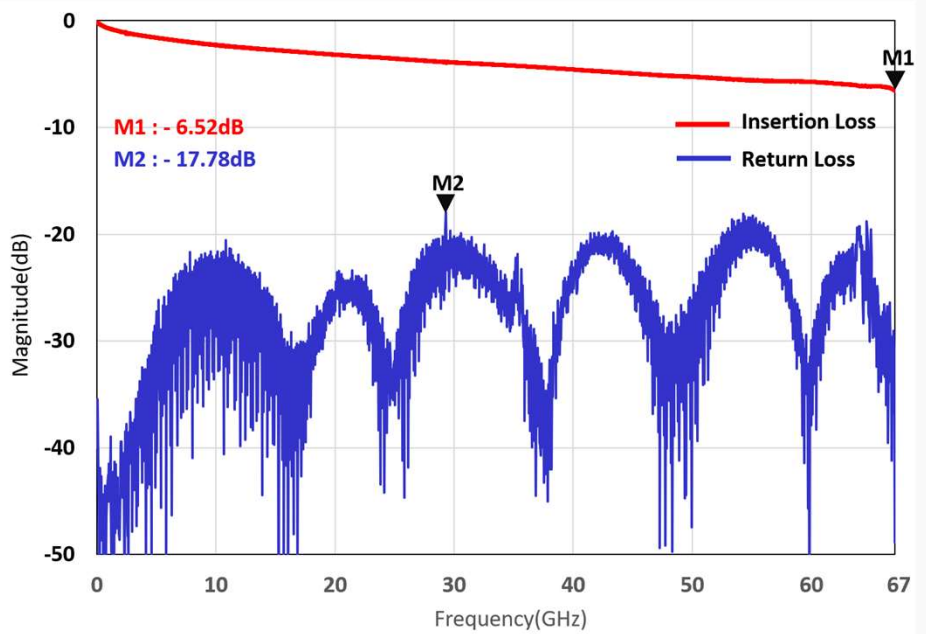
Test Result

W205 cable assembly

Part No. : W205-VM1VM1-1M

- Frequency : 50 MHz to 67 GHz
- Connector : 1.85 mm (Male)
- Cable Length :1 meter

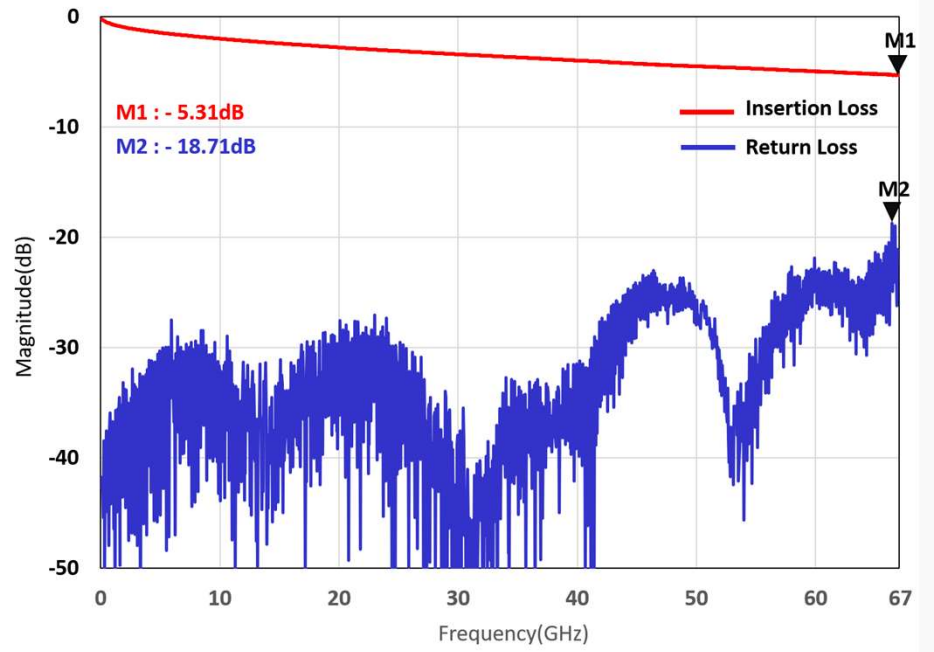




Part No. : W205-VF1VF1-36inch

- Frequency : 50 MHz to 67 GHz
- Connector : 1.85 mm (Female)
- Cable Length : 36inch





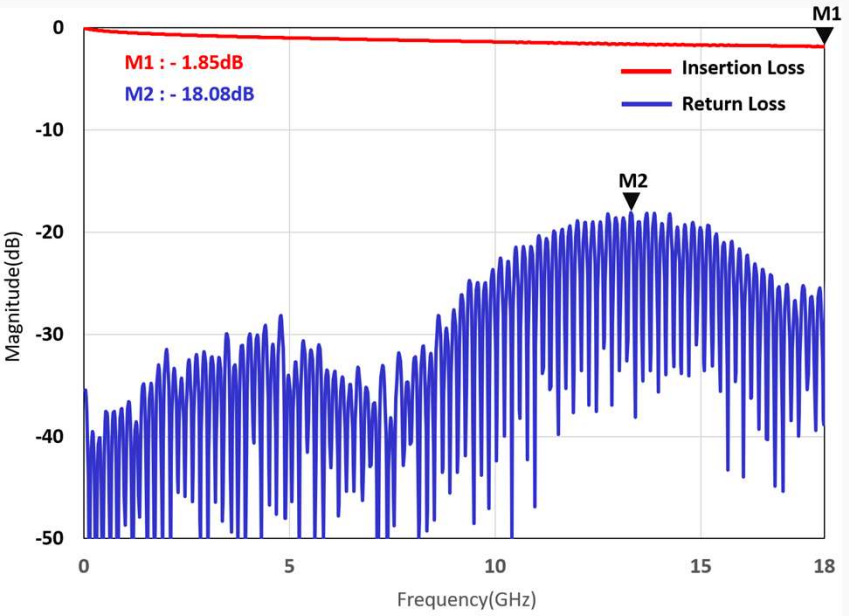
Test Result

W205 cable assembly

Part No. : W205-SMR1SMR1-24inch

- Frequency : 10 MHz to 18 GHz
- Connector : SMA(Male) : Right Angle
- Cable Length : 24inch





Part No. : W205-PF2PF2-80mm

- Frequency : 10 MHz to 40 GHz
- Connector : SMP(Female) Right Angle
- Cable Length : 80mm





Selection Guide

W205- VM1VM1 - 1M- 2PS – T

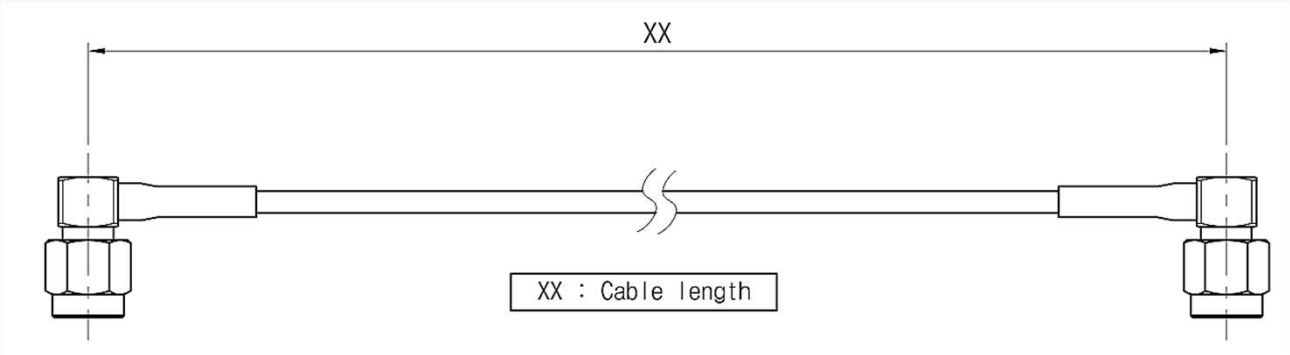
Non-Adhesive Shrinkable Tube

T: -40 ~ + 125 ℃

Phase Matching

1PS: ± 1 pico-second
2PS: ± 2 pico-seconds
5PS: ± 5 pico-seconds

Cable Type	Connector Type	Cable Length
W205	SMR1 : SMA Male R/A PF2 : SMP Female R/A 2M1 : 2.4 mm Male 2F1 : 2.4 mm Female VM1 :1.85 mm Male VF1 : 1.85 mm Female	Unit : Meter, inch



2.4 mm Connectors(50 GHz)



1.85 mm Connectors (67 GHz)



SMA(M) R/A Connector(18 GHz)



SMP(F) R/A Connector(40 GHz)



Revision History

Revision	Date	Changes
Ver 1.0 Ver 1.1 Ver 1.2	2020-07-08 2022-04-20 2026-08-01	Released W205 Series Cable Assembly Updated Temperature Spec. according to tube Updated Right angle connector Cable Assembly