SNW-7637831535-12-CM

Rev. 1.0

E Band Waveguide Three-Junction Circulator, 76 to 78 GHz

Description:

Model SNW-7637831535-12-CM is an E band waveguide three-junction circulator that covers the frequency range of 76 to 78 GHz. The three-junction waveguide circulator is designed and manufactured to provide a low insertion loss of 1.5 dB and a high port isolation of 35 dB between designated ports. The three-junction circulator is offered for high port isolation duplexing between the transmitter and receiver. Unlike single junction circulator, the three-junction circulator offer inherent high port insertion loss from port 3 to port 1 and slightly lower isolation from port 1 to port 3 due to its unique mechanical configuration. The RF ports of the circulator are WR-12 waveguides with UG-387/U flanges.

Features:

- Low Insertion Loss
- High Isolation
- Compact Configuration
- 3 Junctions

Applications:

- TX/RX Duplexing
- Automotive Radar System
- Module Integration
- Port Isolation

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	76 GHz		78 GHz
Insertion Loss* (Port 1 to Port 2 & Port 2 to Port 3)		1.5 dB	
Isolation* (Port 2 to Port 1 & Port 3 to Port 2)		35 dB	
Insertion Loss (Port 3 to Port 1)*		45 dB	
Isolation (Port 1 to Port 3)*		25 dB	
Return Loss		1.3:1	
Forward Power Handling			3 W (CW)
Reverse Power Handling			3 W (CW)
Specification Temperature		+25 °C	
Operation Temperature	-40 °C		+85 °C

*The values are obtained when the spare port is terminated with high performance load.

Mechanical Specifications:

Item	Specification
RF Ports	WR-12 Waveguide with UG-387/U Flange
Body Material	Aluminum
Body Finish	Gold Plated
Cover Finish	Black Anodized
Weight	0.8 Oz
Size	1.10” (L) X 1.14” (W) X 0.98” (H)
Outline	NW-CE-3

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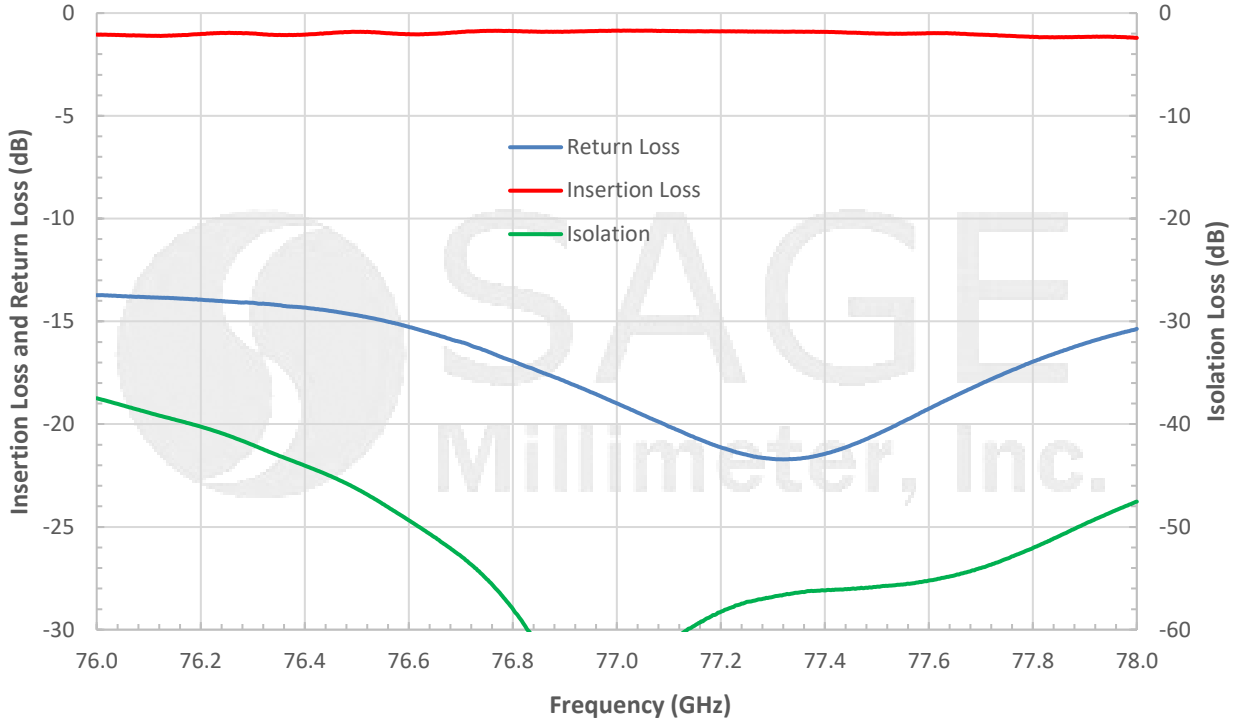
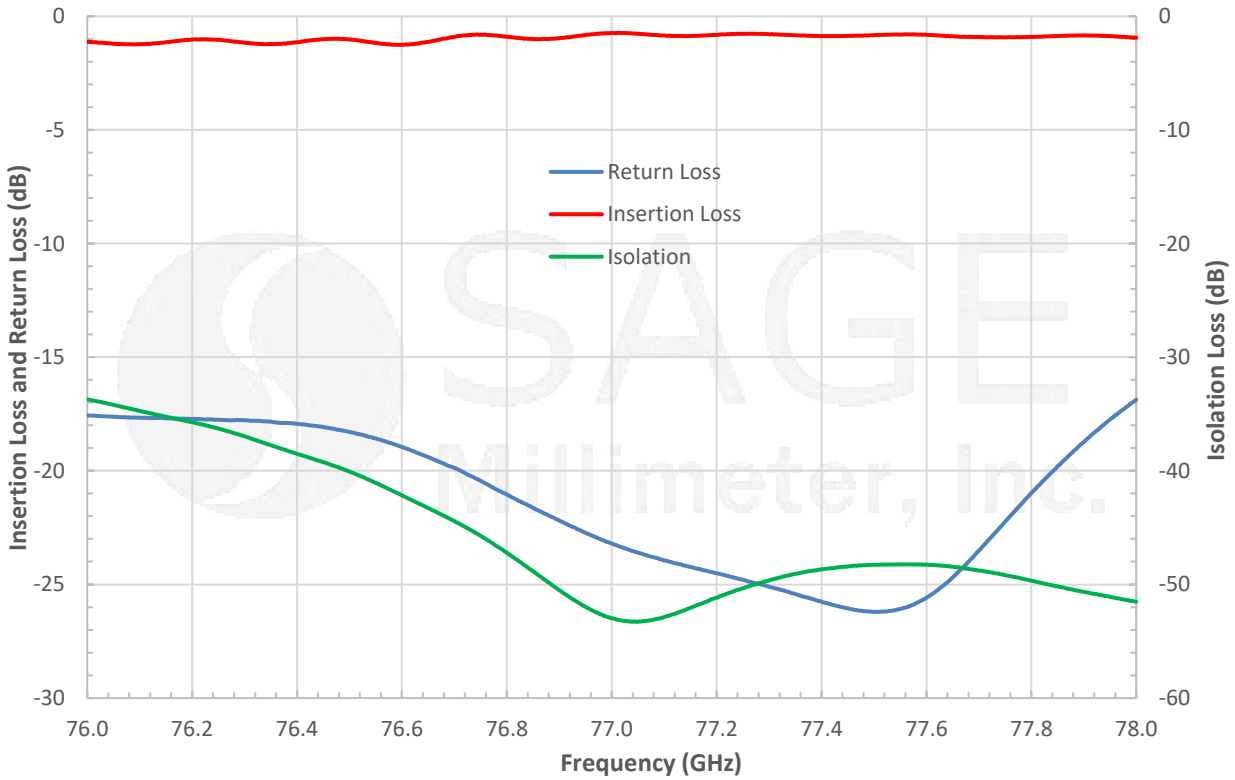
Typical Performance vs. Frequency of Port 1 to Port 2



Typical Performance vs. Frequency of Port 2 to Port 3



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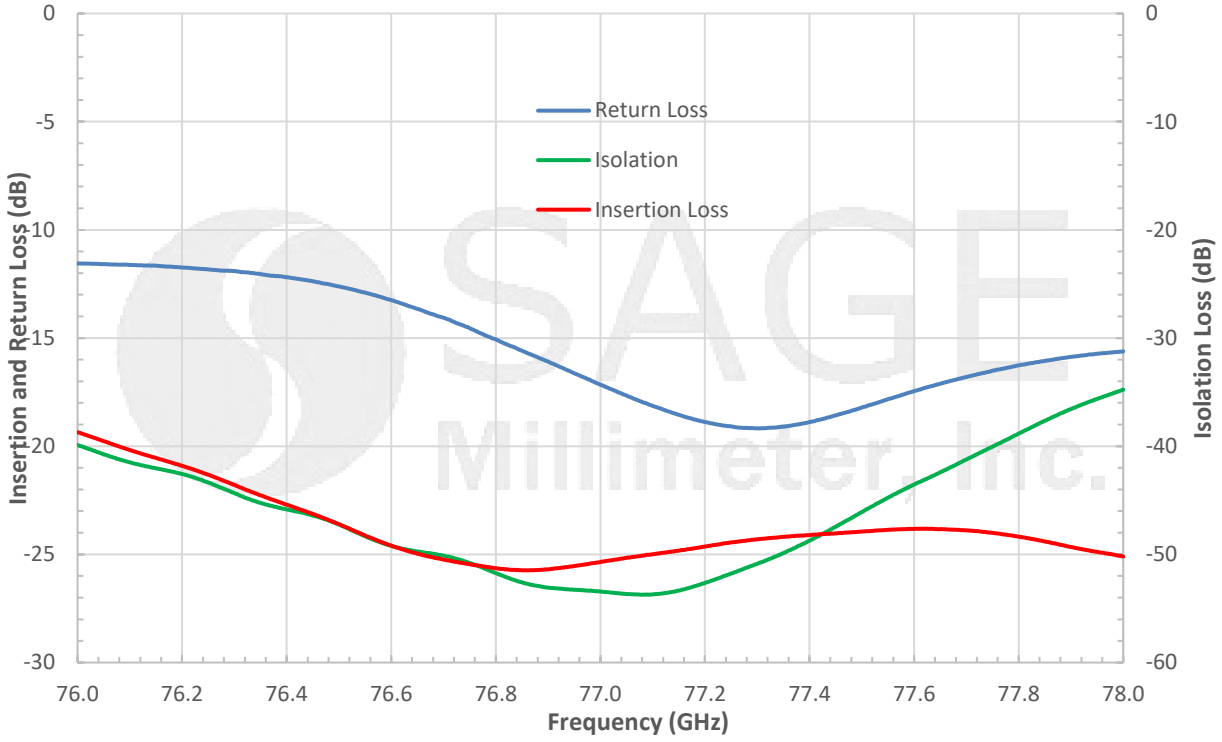
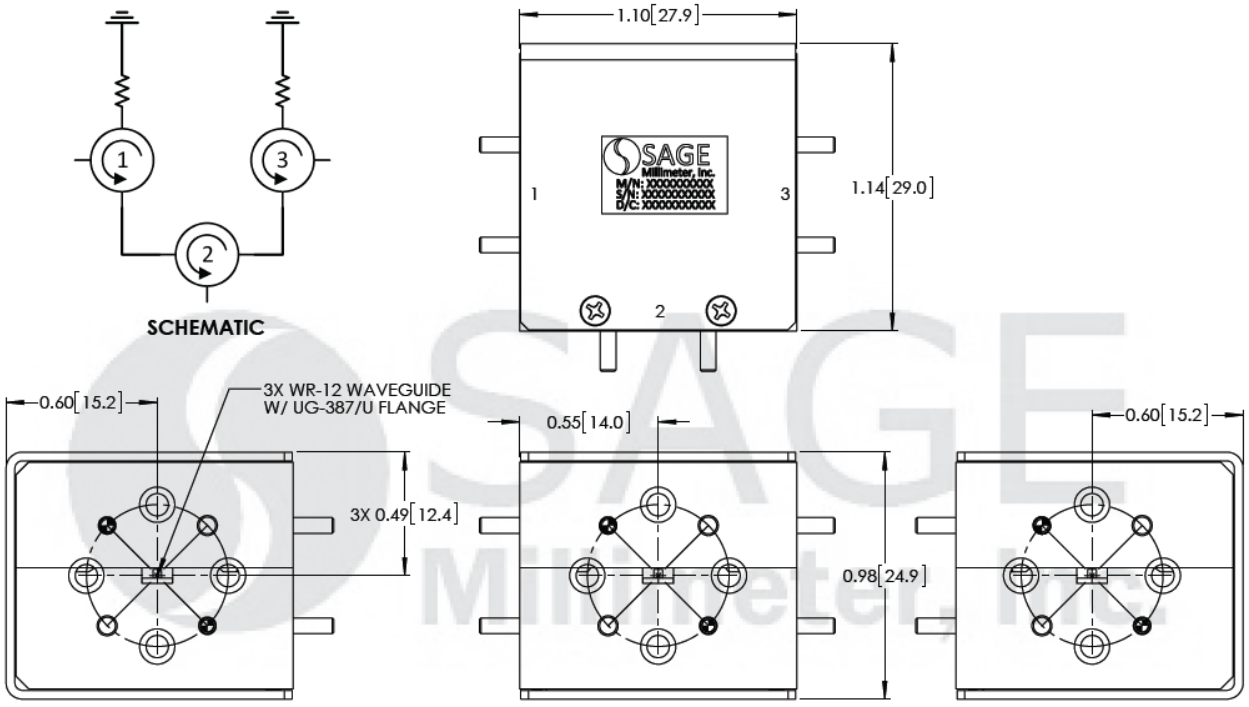
Typical Performance vs. Frequency of Port 3 to Port 1



Mechanical Outline: (Unless otherwise specified, all dimensions are in inches [millimeters])



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Note:

- All data presented is collected from a sample lot. Actual data may vary unit to unit slightly.
- All testing was performed under +25 ˚C case temperature.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

Caution:

- Exceeding absolute maximum ratings will damage the device.
- This device is magnetic sensitive. Keep the device at least 6” away from magnetic fields.
- Any foreign objects in the waveguide will degrade the performance and/or damage the device.

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