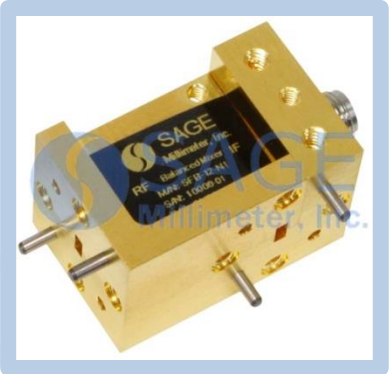
SFB-75380308-1212SF-N1

Rev. 1.0

E-Band Balanced Mixer, 75 to 80 GHz



Description:

Model SFB-75380308-1212SF-N1 is an E-Band balanced mixer that utilizes high performance GaAs Schottky beam-lead diodes and a balanced circuit configuration to offer superior RF performance. The mixer supports a narrow waveguide band operation for both LO and RF frequencies from 75 to 80 GHz with an IF output from DC to 5 GHz. The mixer offers a conversion loss of 8 dB typical and a high RF to LO port isolation of 30 dB.

Features:

- Low Conversion Loss
- Designed for Automotive Application
- Compact Package

Applications:

- 5G Systems
- Radar Systems
- Communication Systems
- Test Equipment

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency	75 GHz		80 GHz
LO Frequency	75 GHz		80 GHz
IF Frequency	DC		5.0 GHz
LO Pumping Power		+13 dBm	
Input P_{1dB}		-3 dBm	
Conversion Loss		8.0 dB	
RF to LO Isolation		30 dB	
Combined RF and LO Power			+18 dBm
Specification Temperature		+25°C	
Case Temperature	-40°C		+85°C

Mechanical Specifications:

Item	Specification
RF	WR-12 Waveguide with UG-387/U Flange
LO	WR-12 Waveguide with UG-387/U Flange
IF	SMA (F)
Case Material	Aluminum
Finish	Gold Plated
Weight	0.8 Oz
Outline	FB-NE

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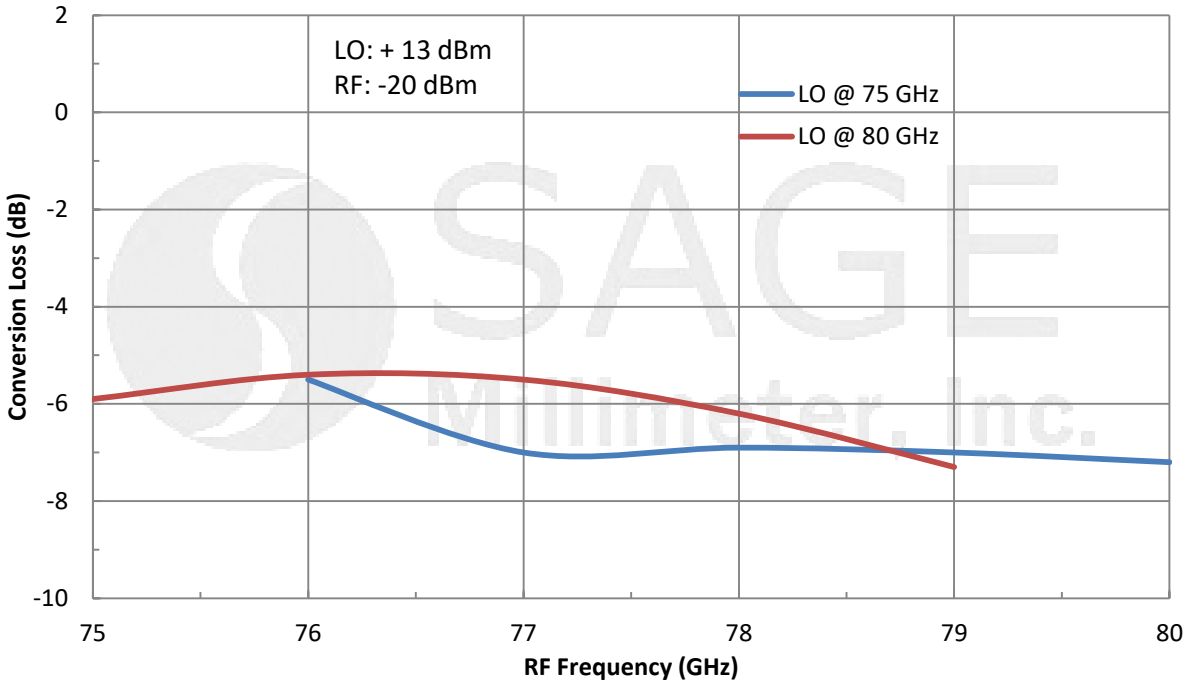
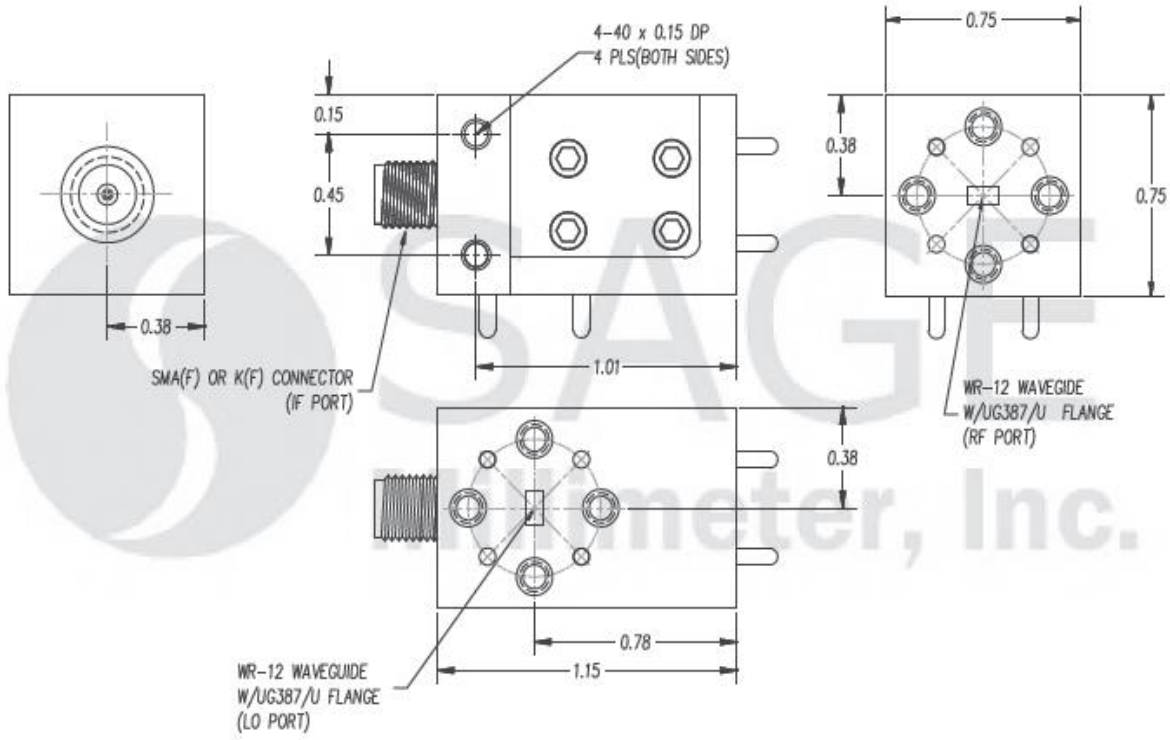
E-Band Balanced Mixer, 75 to 80 GHz

Typical Conversion Loss vs. Frequency



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



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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 shown will damage the device.
- The device is static sensitive. Always follow ESD rules when working with the device.
- The IF port of the mixer is DC coupled. Use a DC block when connecting to other devices. **Do not apply an external bias voltage to the IF port.**
- Any foreign objects in the waveguide will cause performance degradation and can possibly damage the device.
- Proper torque, 8.0 ± 0.15 inch-pounds (0.92 ± 0.05 Nm), should be applied. **SAGE Millimeter torque wrench, model SCH-08008-S1, is highly recommended.**