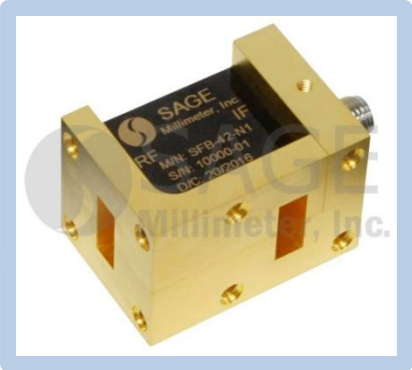
SFB-42-N1

Rev 1.0

K-Band Balanced Mixer

Description:



Model SFB-42-N1 is a K 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 the full waveguide band operation for both LO and RF frequencies from 18 to 26.5 GHz with an IF output from DC to 8.5 GHz. The mixer offers a conversion loss of 6 dB typical and a high RF to LO port isolation of 30 dB.

Features:

- Full Waveguide Band Coverage
- Low Conversion Loss
- High IF Frequency up to 8.5 GHz

Applications:

- Radar Systems
- Communication Systems
- Test Equipment

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency	18 GHz		26.5 GHz
LO Frequency	18 GHz		26.5 GHz
IF Frequency	DC		8.5 GHz
LO Pumping Power	+10 dBm	+13 dBm	+15 dBm
Input P_{1dB}		-3 dBm	
Conversion Loss		6 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-42 Waveguide with UG-595/U Flange
LO	WR-42 Waveguide with UG-595/U Flange
IF	SMA (F)
Case Material	Aluminum
Finish	Gold Plated
Weight	1.3 Oz
Outline	FB-NK

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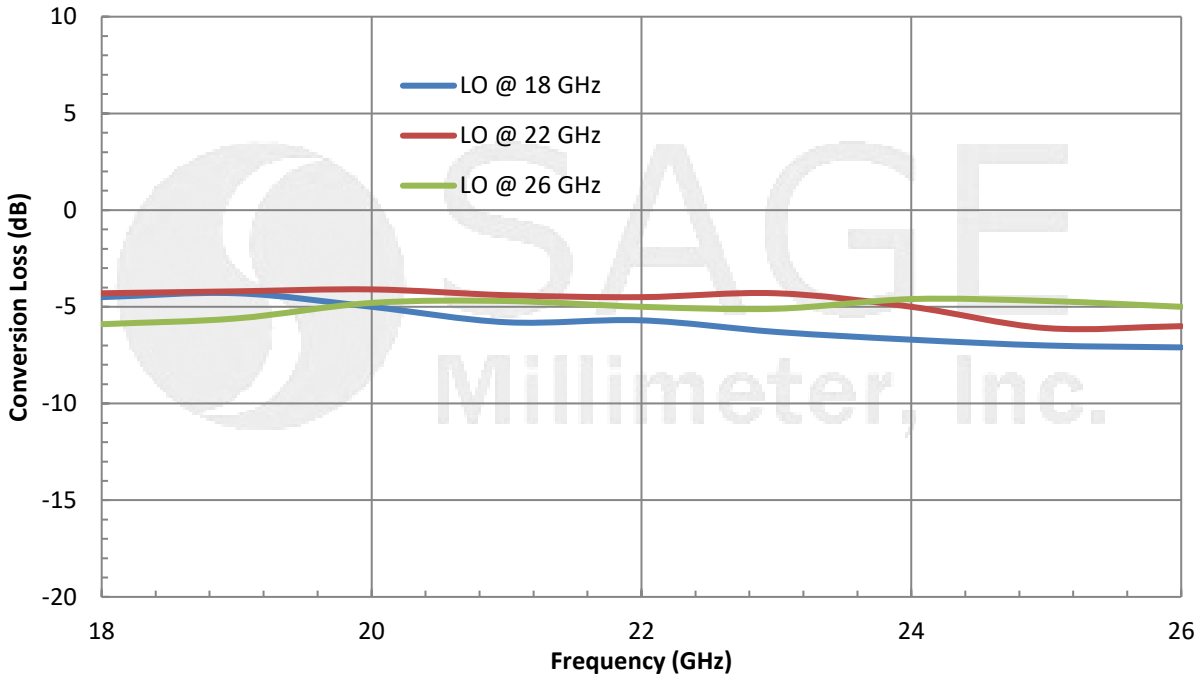
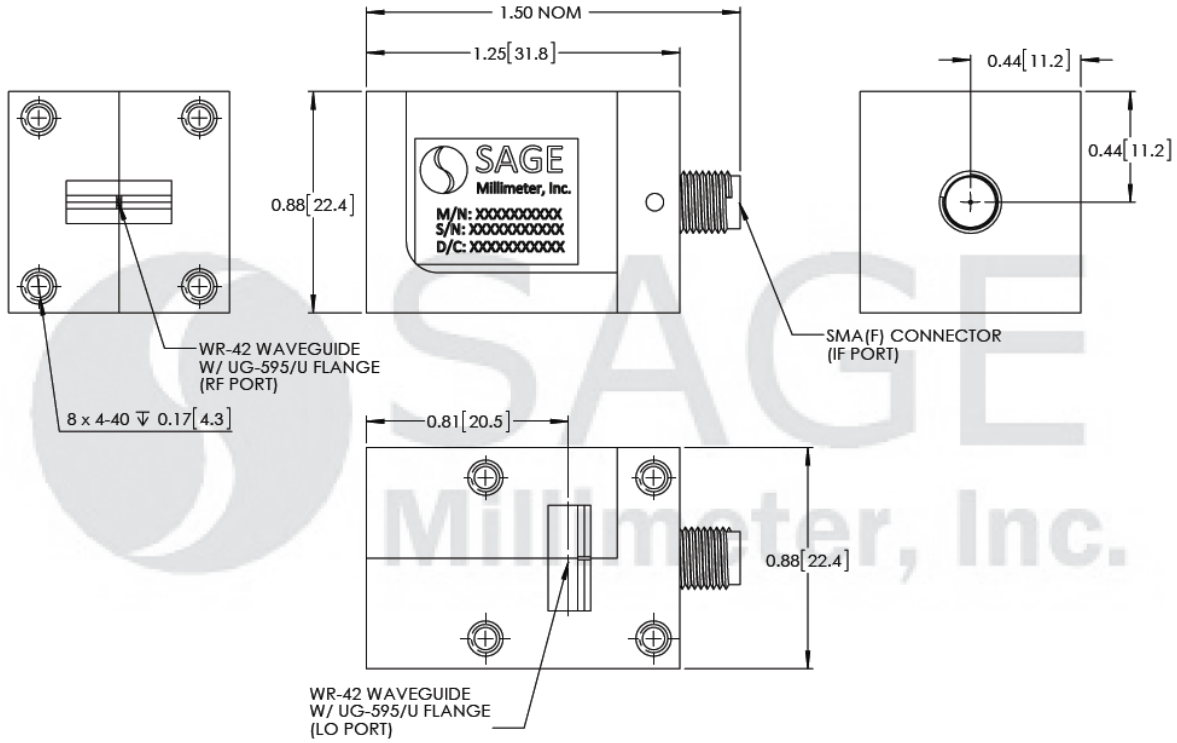
Typical Conversion Loss vs. Frequency

RF: -20 dBm; LO: +12 dBm



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.**

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