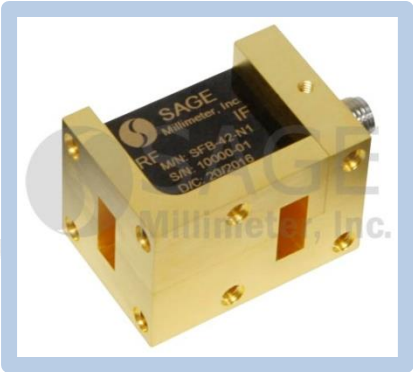
SFU-42-N1

Rev. 1.0

K-Band Balanced Up-Converter

Description:



Model SFU-42-N1 is a K Band balanced up-converter that utilizes high performance GaAs Schottky beam-lead diodes and a balanced circuit configuration to offer superior RF performance. The up-converter 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 6.0 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
Conversion Loss		6.0 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 Port	WR-42 Waveguide with UG-595/U Flange
LO Port	WR-42 Waveguide with UG-595/U Flange
IF Port	SMA (F)
Case Material	Aluminum
Finish	Gold Plated
Weight	1.3 Oz
Size	1.50” (L) X 0.88” (W) X 0.88” (H)
Outline	FB-NK

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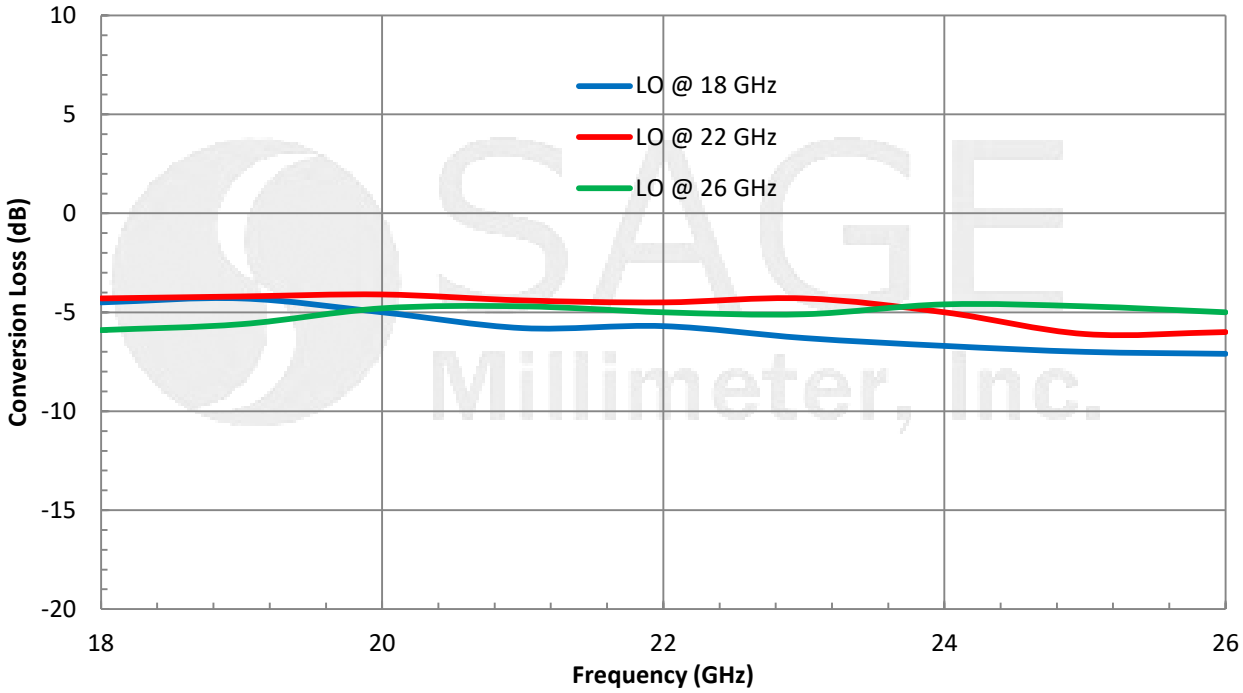
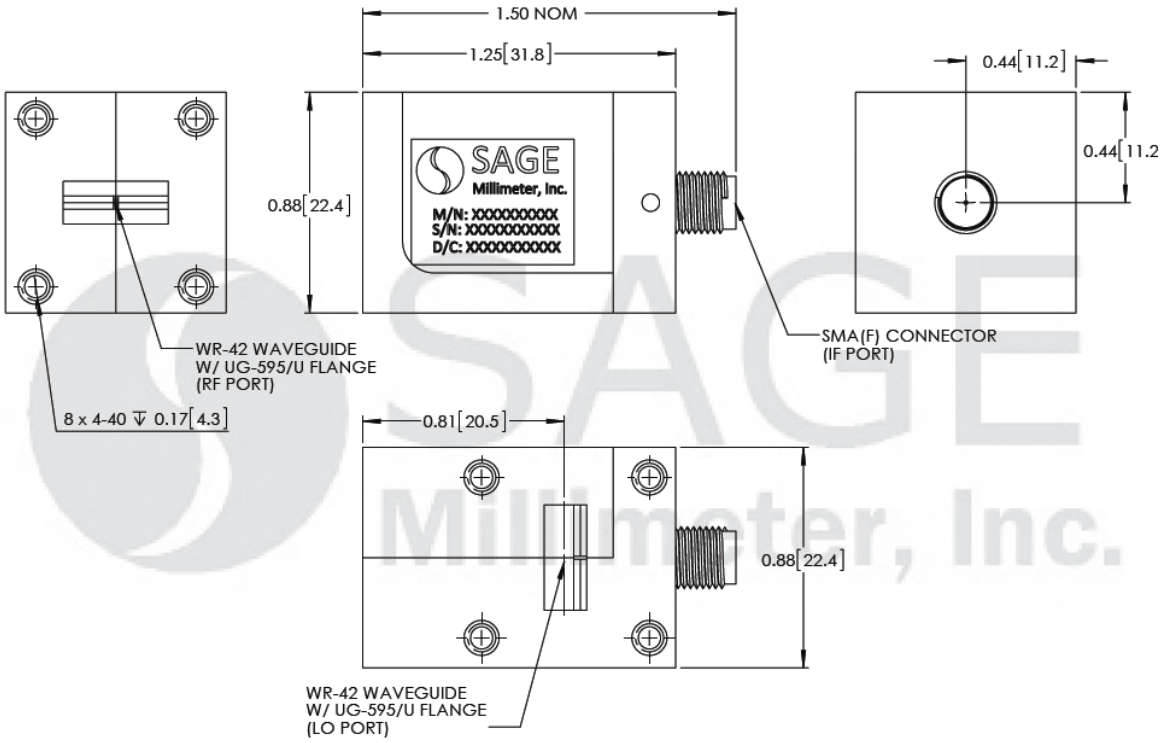
Typical Conversion Loss vs. Frequency

RF: +20 dBm; LO: +12 dBm



Mechanical Outline: (Unless otherwise specified, all dimensions are in inches [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 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.**