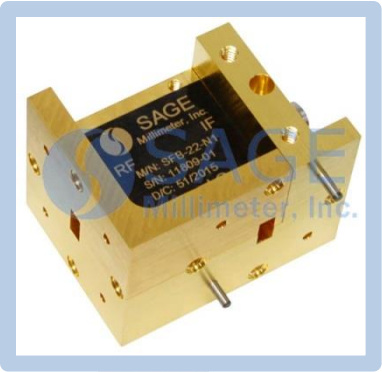
SFU-22-N1

Rev. 1.0

Q-Band Balanced Up-Converter



Description:

Model SFU-22-N1 is a Q 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 33 to 50 GHz with an extremely broad IF output from DC to 17 GHz. The up-converter offers a conversion loss of 7 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 17 GHz

Applications:

- Radar Systems
- Communication Systems
- Test Equipment

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency	33 GHz		50 GHz
LO Frequency	33 GHz		50 GHz
IF Frequency	DC		17 GHz
LO Pumping Power	+10 dBm	+13 dBm	+15 dBm
Conversion Loss		7 dB	9 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-22 Waveguide with UG-383/U Flange
LO Port	WR-22 Waveguide with UG-383/U Flange
IF Port	SMA (F)
Material	Aluminum
Finish	Gold Plated
Weight	1.8 Oz
Size	1.50” (L) X 1.13” (W) X 1.13” (H)
Outline	FB-NQ

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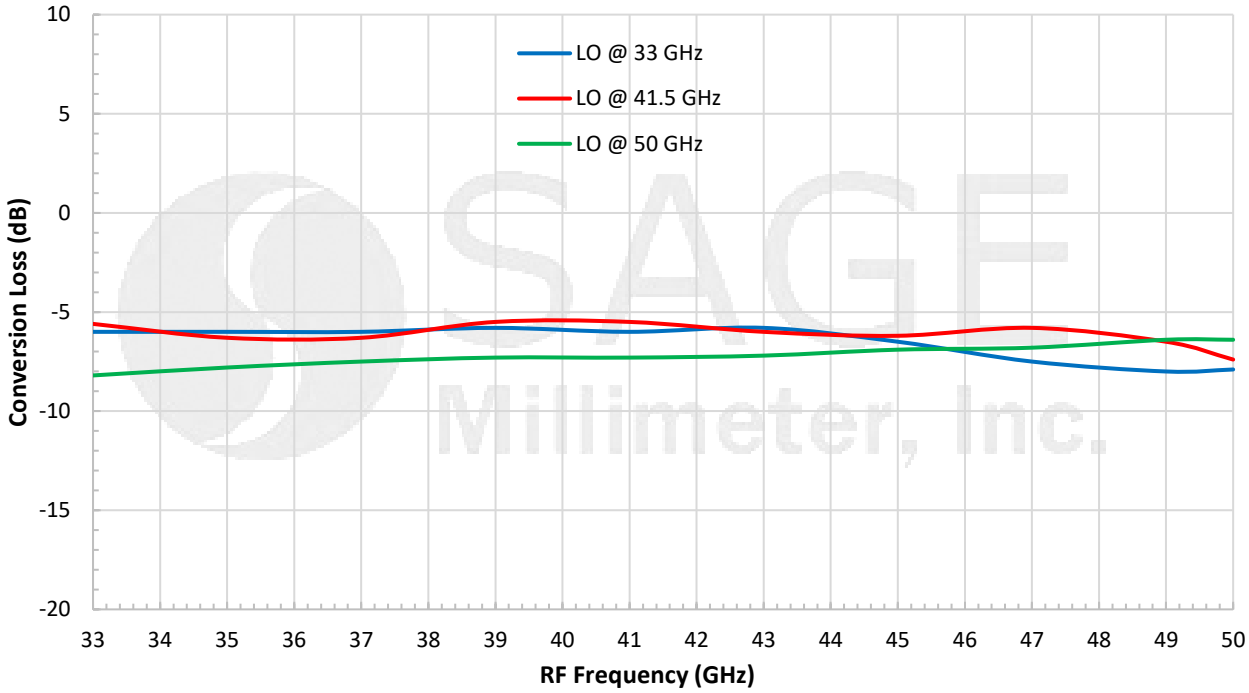
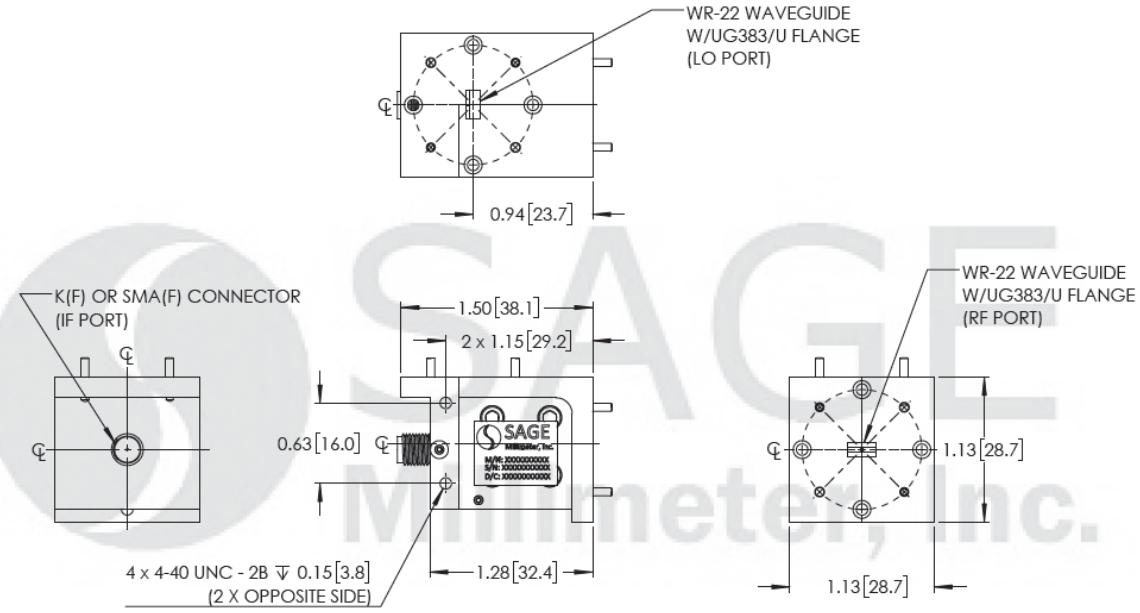
Typical Conversion Loss vs. Frequency

LO: +13 dBm, IF: -20 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.**