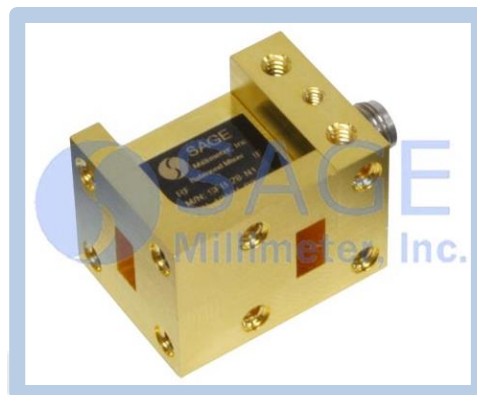


Ka-Band Balanced Up-Converter

Description:

Model SFU-28-N1 is a Ka 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 26.5 to 40 GHz with an IF output from DC to 13.5 GHz. The up-converter offers a conversion loss of 7.5 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 13.5 GHz

Applications:

- Radar Systems
- Communication Systems
- Test Equipment

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency	26.5 GHz		40 GHz
LO Frequency	26.5 GHz		40 GHz
IF Frequency	DC		13.5 GHz
LO Pumping Power	+10 dBm	+13 dBm	+15 dBm
Conversion Loss		7.5 dB	9.0 dB
RF to LO Isolation		30 dB	
Combined IF and LO Power			+18 dBm
Specification Temperature		+25 °C	
Operation Temperature	-40 °C		+85 °C

Mechanical Specifications:

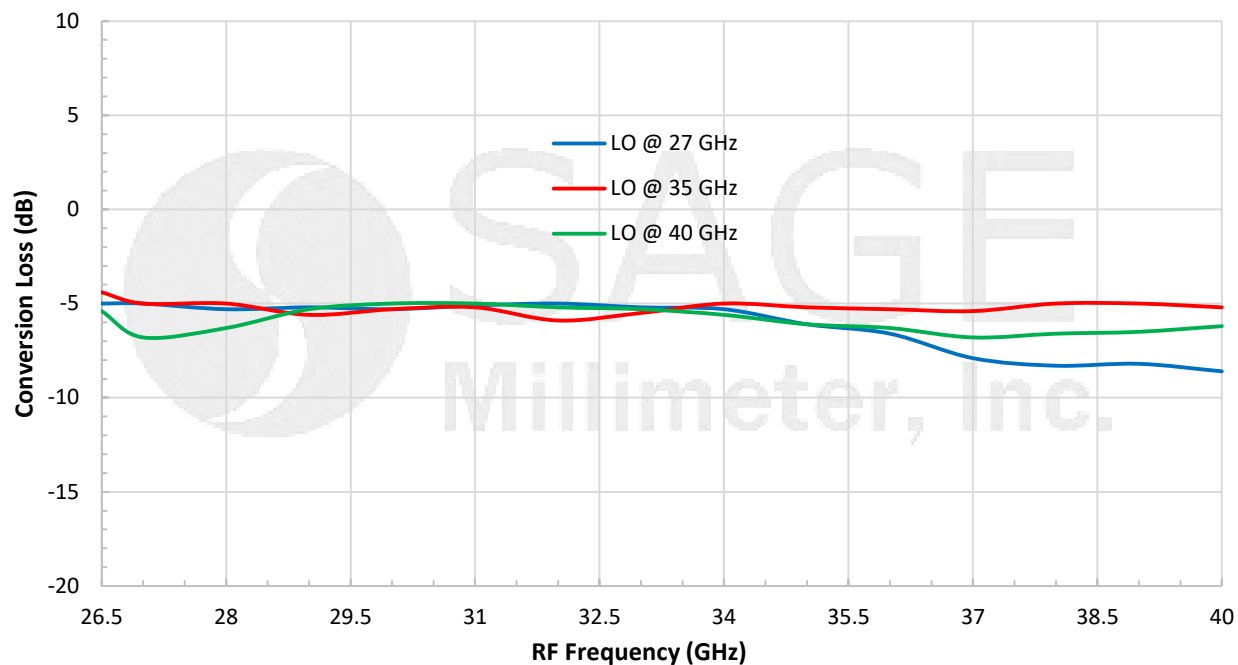
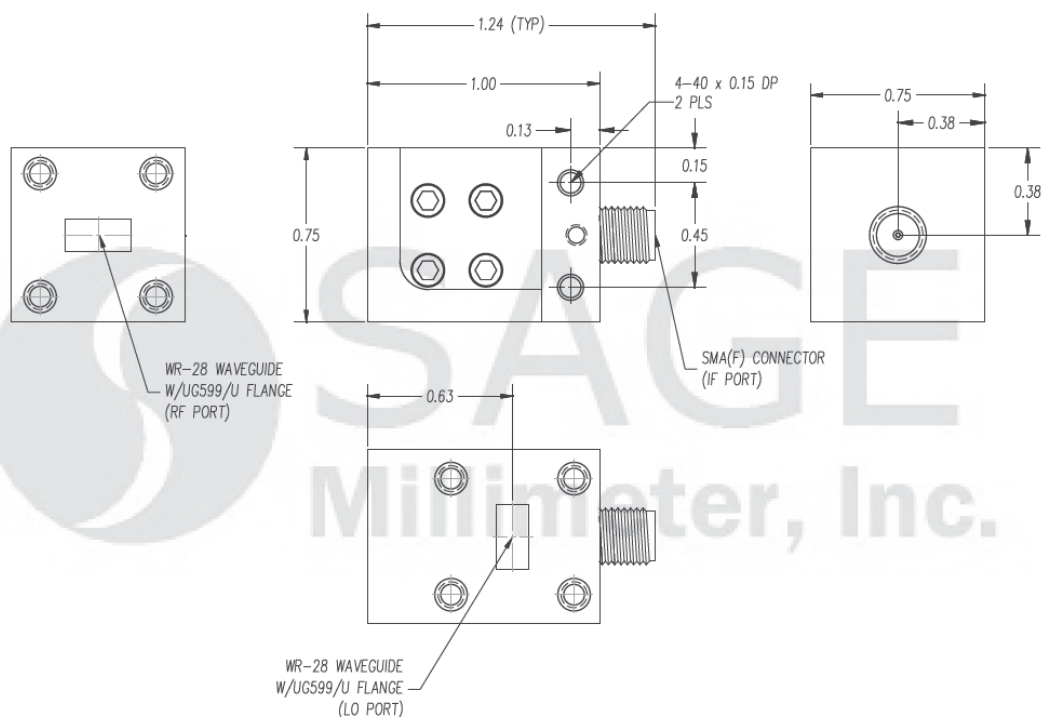
Item	Specification
RF Port	WR-28 Waveguide with UG-599/U Flange
LO Port	WR-28 Waveguide with UG-599/U Flange
IF Port	SMA (F)
Material	Aluminum
Finish	Gold Plated
Weight	0.6 Oz
Size	1.24" (L) X 0.75" (W) X 0.75" (H)
Outline	FB-NA



Ka-Band Balanced Up-Converter

Typical Conversion Loss vs. Frequency

LO: +13 dBm, RF: -20 dBm

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



Ka-Band Balanced Up-Converter

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.**

