SFH-28SFSF-A3

Rev. 1.1

Ka-Band Harmonic Mixer, 8th Harmonics. Keysight Spectrum Analyzer

Description:

Model SFH-28SFSF-A3 is a Ka-Band balanced harmonic mixer that is specially designed for use with Keysight's spectrum analyzer series. The mixer employs high performance, GaAs Schottky flip chip diodes and a balanced configuration to produce a superior RF performance. With an IF range of DC to 1.3 GHz, the harmonic mixer uses the harmonic number 8 of a 3.0 to 6.1 GHz LO at +16 dBm to translate 26.5 to 40 GHz. The harmonic mixer has a typical conversion loss of 30 dB. The mixer can be used as other even harmonic numbers, such as 4, 6, and 10 etc. with various conversion loss performance. In general, the lower the harmonics, the lower the conversion loss.

Features:

- Full Waveguide Band Operation
- No External Bias Required
- Even Harmonic Detection
- Calibrated for 8th Harmonic

Applications:

- Keysight Spectrum Analyzers
- Frequency Meters
- Phase Locked Loops

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency	26.5 GHz		40 GHz
LO Frequency	3.0 GHz		6.1 GHz
IF Frequency	DC		1.3 GHz
Required LO Pumping Power		+16 dBm	+19 dBm
Conversion Loss		30 dB	
Combined Damage RF and LO Power			+20 dBm
Number of Harmonics*		8	
Specification Temperature		+25 ˚C	
Operation Temperature	-40 ˚C		+85 ˚C

*Note: Other even harmonics can be used.

Mechanical Specifications:

Item	Specification
RF Port	WR-28 Waveguide with UG-599/U Flange
LO Port	SMA (F)
IF Port	SMA (F)
Case Material	Brass
Finish	Gold Plated
Weight	5.6 Oz
Outline	FH-A2

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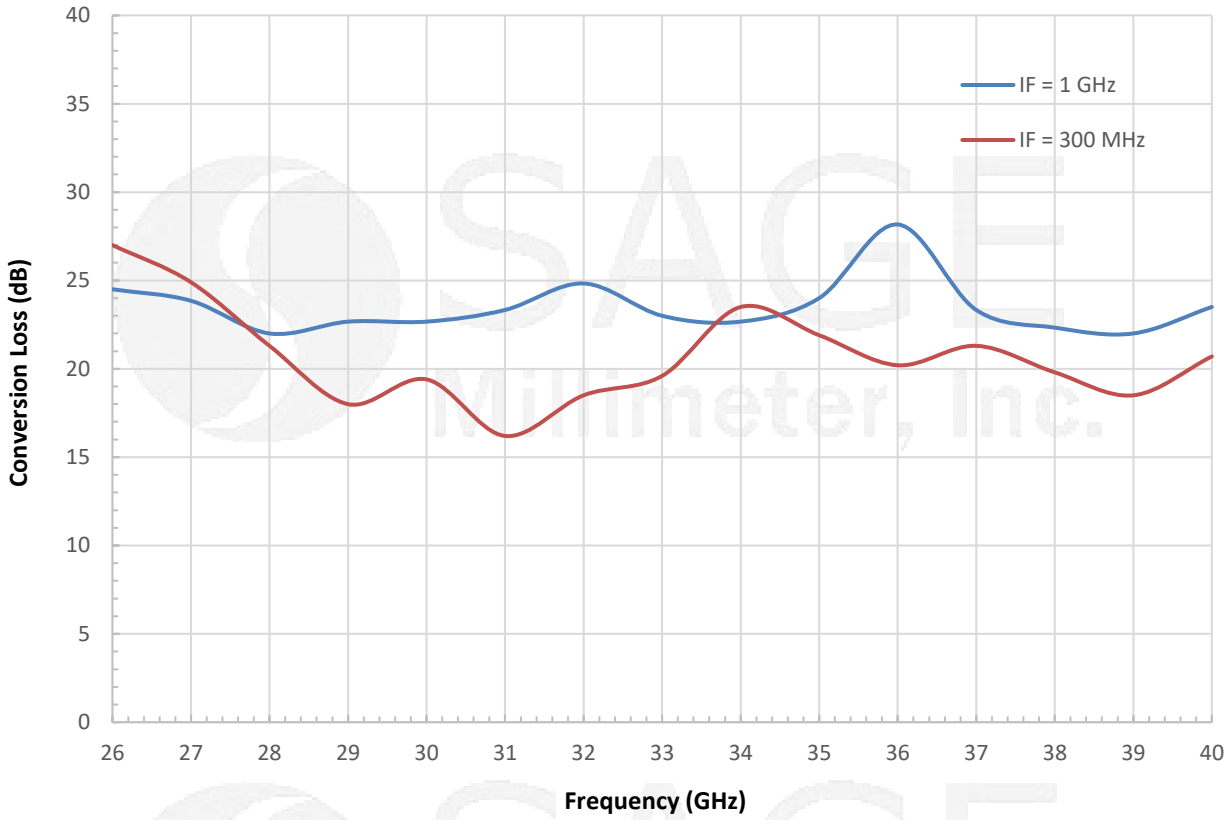
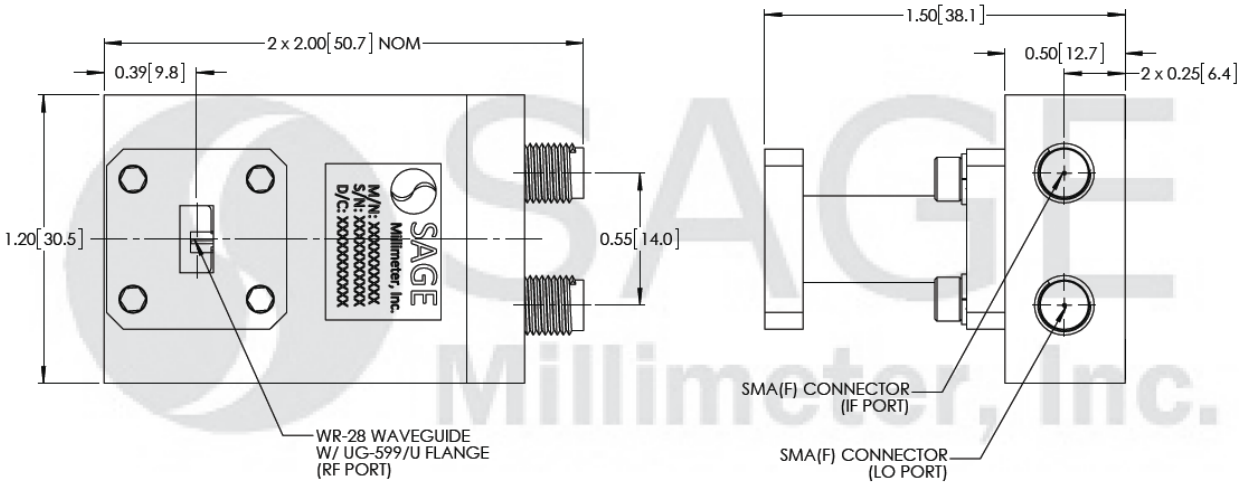
Typical Conversion Loss vs. Frequency

RF = -20 dBm, LO = +16 dBm



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



Note:

- All data presented is collected from a sample lot. Actual data may vary unit to unit.
- All testing was performed under +25 ˚C case temperature.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

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Caution:

- Exceeding absolute maximum ratings of the mixer will damage the device.
- Any foreign objects in the waveguide will cause performance degradation and possible device damage.
- The mixer is a static sensitive device. Always follow ESD rules when working with the mixer.
- Proper torque, 8.0 ± 0.15 inch-pounds (0.90 ± 0.02 Nm), should be applied. **SAGE Millimeter torque wrench, model SCH-08008-S1, is highly recommended.**

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