SFH-7039030318-12KFSF-N3

Rev. 1.1

E-Band Third Harmonic Mixer, 70 to 90 GHz

Description:

Model SFH-7039030318-12KFSF-N3 is an E-Band third harmonic mixer. The mixer is designed with high performance GaAs Schottky diodes to provide mixing at 3X LO frequency to cover the RF frequency range from 70 to 90 GHz. The low LO frequency makes this mixer well suited for low cost E band system solutions with an LO frequency range of 23.33 to 30.00 GHz. The mixer provides 18 dB conversion loss and 30 dB LO to IF isolation.

Features:

- Low LO Power Requirement
- Third Harmonic Mixing
- Compact Package

Applications:

- Radar Systems
- Communication Systems
- Test Equipment

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency	70 GHz		90 GHz
LO Frequency	23.33 GHz		30.00 GHz
IF Frequency	DC		1.5 GHz
LO Pumping Power	+8 dBm	+13 dBm	+16 dBm
Conversion Loss		18 dB	
LO to IF Isolation		30 dB	
Combined RF and LO Power			+16 dBm
Specification Temperature		+25˚C	
Operation Temperature	-40 ˚C		+85 ˚C

Mechanical Specifications:

Item	Specification
RF Port	WR-12 Waveguide with UG-387/U Flange
LO Port	K(F) (Male connector available under different model number)
IF Port	SMA(F) (Male connector available under different model number)
Case Material	Aluminum
Finish	Gold Plated
Weight	1.0 Oz
Outline	FH-E3

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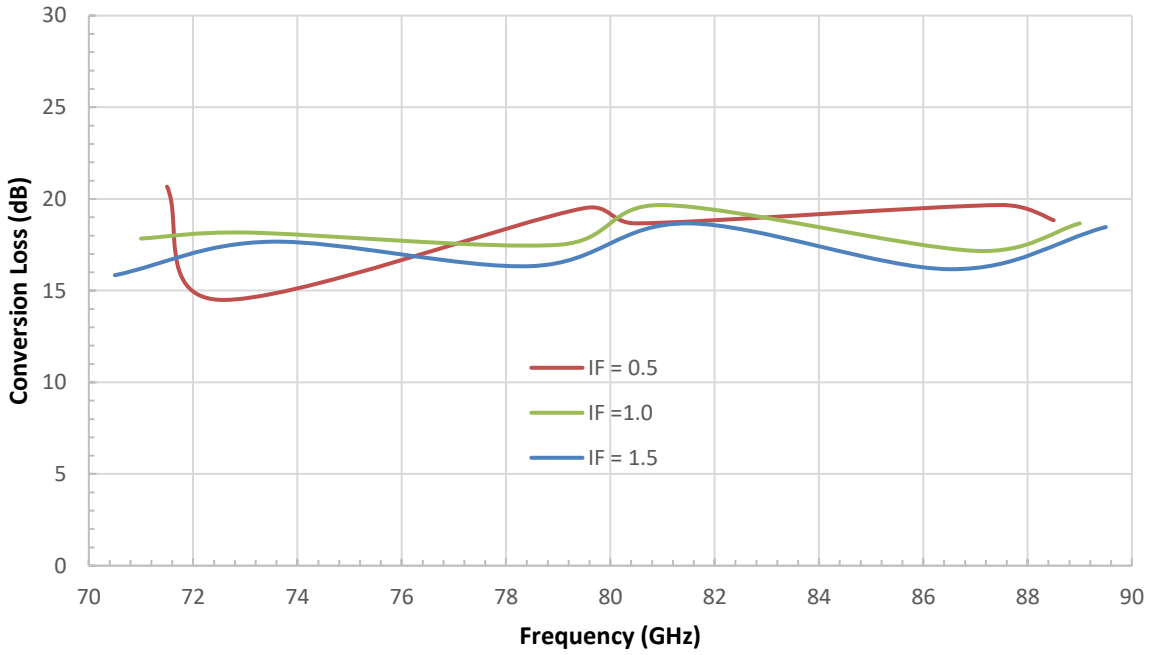
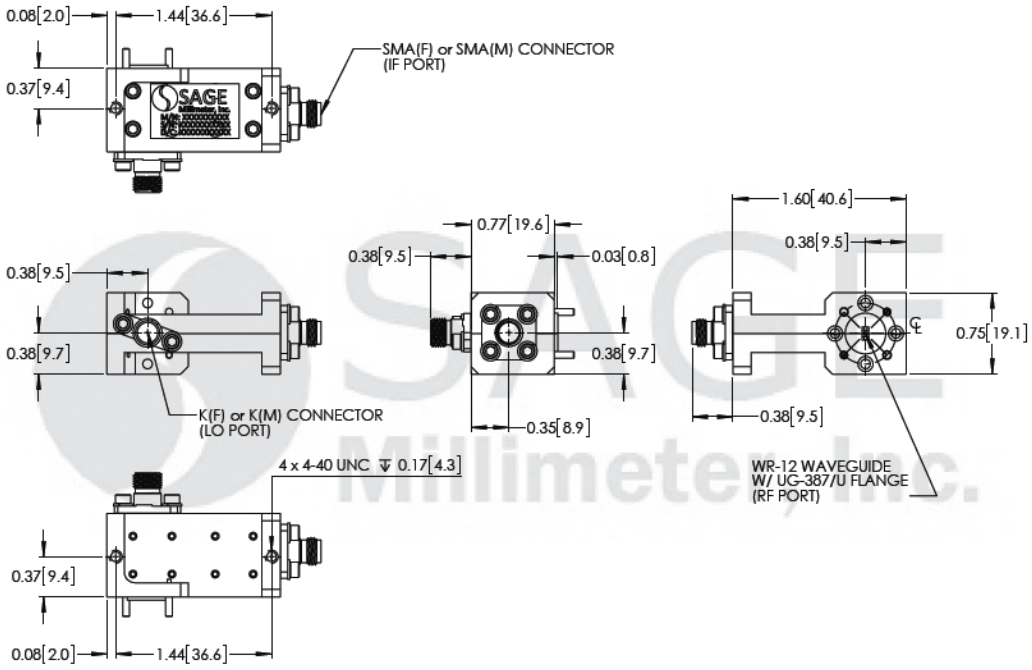
Test Data:

Typical Conversion Loss vs. Frequency

RF = -20 dBm, LO = +13 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.
- 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 DC block when connecting to other devices. **Any external bias voltage applied to the IF port will damage the mixer.**
- 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.**
- Any foreign objects in the waveguide will cause performance degradation and possible device damage.

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