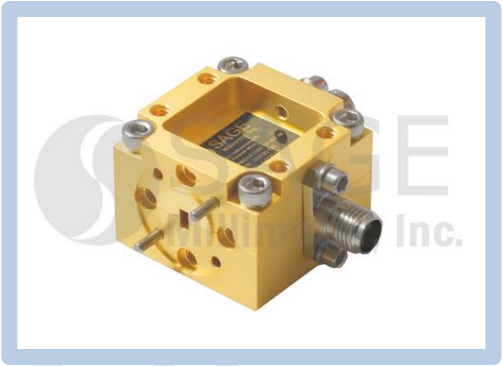
SFS-60390314-12KFSF-N1-M

Rev. 1.0

E-Band Subharmonically Pumped Mixer

Description:



Model SFS-60390314-12KFSF-N1-M is an E-Band subharmonically pumped mixer that utilizes a high-performance GaAs MMIC to offer superior RF performance. The mixer provides a typical conversion loss of 14 dB over the RF frequency range of 60 to 90 GHz with the IF frequency DC to 5.0 GHz. The mixer requires an LO signal from 30 to 45 GHz at a nominal +9 dBm. In addition, the subharmonically pumped mixer offers high LO to IF and RF to LO isolations.

Features:

- Broadband Operation
- High Port Isolations
- LO Frequency at Half of RF Frequency

Applications:

- 5G Systems
- Radar Systems
- Communication Systems
- Test Equipment

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency	60 GHz		90 GHz
LO Frequency	30 GHz		45 GHz
IF Frequency	DC		5.0 GHz
Input P-1 dB		-5 dBm	
LO Pumping Power		+9 dBm	+20 dBm
Conversion Loss		14 dB	
LO to IF Isolation		20 dB	
RF to LO Isolation		28 dB	
RF Input Power			+5 dBm
Specification Temperature		+25 °C	
Operating Temperature	+0 °C		+50 °C

Mechanical Specifications:

Item	Specification
RF Port	WR-12 Waveguide with UG-387/U Anti-Cocking Flange
LO Port	K (F)
IF Port	SMA (F)
Case Material	Aluminum
Finish	Gold Plated
Weight	1.0 Oz
Size	1.00” (L) x 1.00” (W) x 0.75” (H)
Outline	FS-NEM-A

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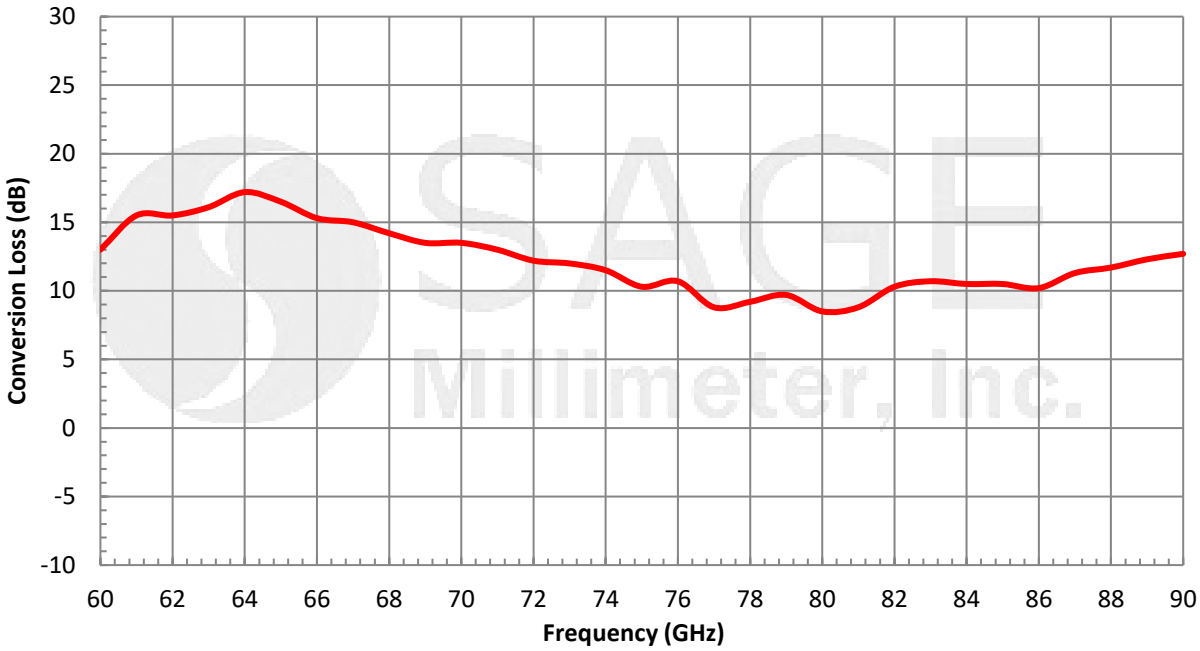
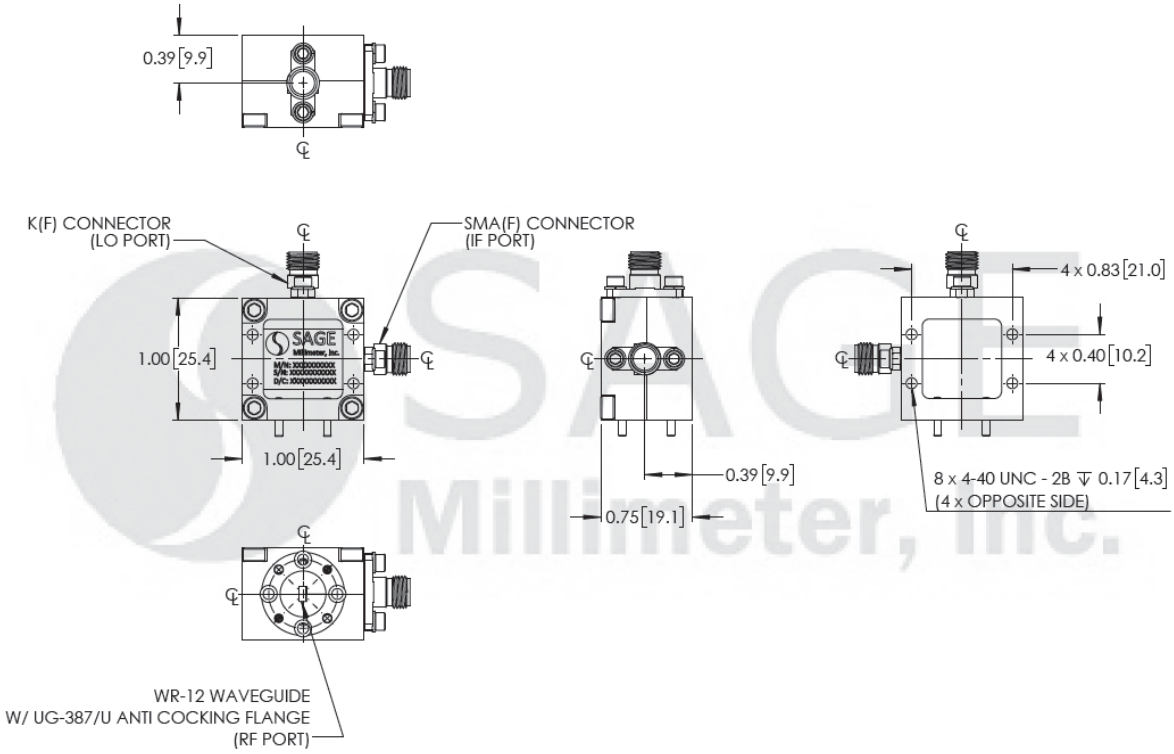
Typical Conversion Loss vs. Frequency

LO Power: +9 dBm; IF: 1 GHz



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 DC block when connecting to other devices. **Any external bias voltage applied to the IF port will damage the mixer.**
- Any foreign objects in the waveguide will cause performance degradation and possible device damage.
- 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.**

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