SFT-60390315-122FSF-N1-M

Advanced

E-Band Subharmonically Pumped Quadrature Mixer

Description:

Model SFT-60390315-122FSF-N1-M is an E Band subharmonically pumped quadrature mixer that covers the frequency range of 60 to 90 GHz. The typical conversion loss of the quadrature mixer is 15 dB with an LO driving power of +16 dBm. With a low LO frequency range of 30 to 45 GHz, this mixer is well suited for low cost E band system solutions. The typical LO to RF port isolation is 30 dB. Since the IF port of the quadrature mixer is DC coupled, the mixer can be used as a phase detector. In addition, the mixer can be readily configured into an image rejection mixer or single sideband modulator by adding an IF quadrature coupler.

Features:

- Compact Package
- Low Conversion Loss
- High Port Isolations
- IF Port DC Coupled for Phase Detection

Applications:

- Phase Detection
- Speed and Ranging Radar Systems
- Communication Systems
- Test Equipment

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency	60 GHz		90 GHz
LO Frequency	30 GHz		45 GHz
LO Pumping Power		+16 dBm	+20 dBm
IF Frequency	DC		12.0 GHz
Conversion Loss		15 dB	
LO to IF Isolation		20 dB	
LO to RF Port Isolation	20 dB	30 dB	
Combined RF & LO Damage Power			+20 dBm
Specification Temperature		+25°C	
Operating Temperature	+0°C		+50°C

Mechanical Specifications:

Item	Specification
RF Port	WR-12 Waveguide with UG-387/U Flange
LO Port	2.4 mm (F)
IF-I, IF-Q Ports	SMA(F), SMA(F)
Case Material	Aluminum
Finish	Gold Plated
Weight	1.8 Oz
Size	1.25” (L) X 1.25” (W) X 0.88” (H)
Outline	FT-NEM

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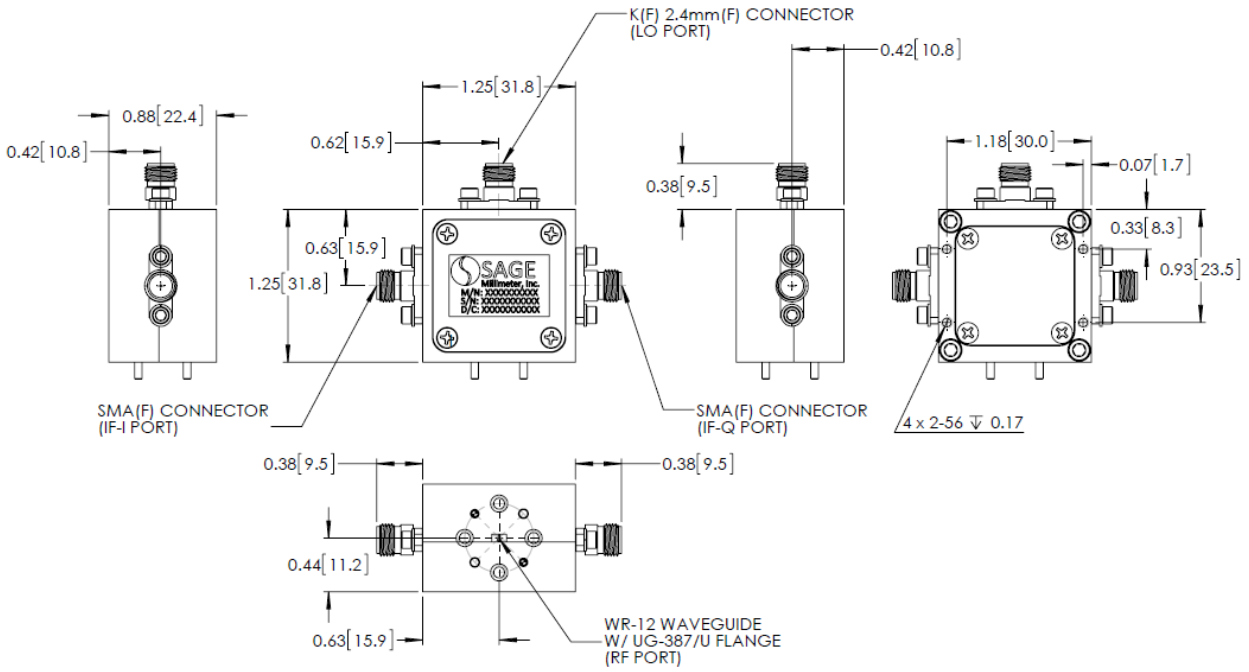
Mechanical Outline: (Unless otherwise specified, all dimensions are in inches [millimeters])



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.
- The I/Q mixer can be configured as an image rejection mixer or used as an I/Q up-converter, single sideband modulator and phase detector.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

Caution:

- Exceeding absolute maximum ratings will damage the device.
- The mixer is a static sensitive device. Always follow ESD rules when working with the device.
- The IF ports are DC coupled. Use DC blocks if necessary. **Do not apply an external bias voltage to the IF port.**
- 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.