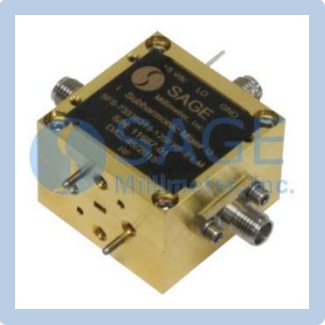
SFT-70376315-12KFSF-E1-M

Rev. 1.0

E-Band Subharmonically Pumped Quadrature Mixer, 70 to 76 GHz

Description:



Model SFT-70376315-12KFSF-E1-M is an E Band subharmonically pumped quadrature mixer that utilizes high performance GaAs MMIC chips to offer superior RF performance. The mixer operates from 70 to 76 GHz with 15 dB nominal conversion loss. The required LO frequency and power are 35 to 38 GHz and +16 dBm, respectively. The amplitude unbalance is within ±1 dB and the phase unbalance is ±20 degrees typically. The IF frequency ranges from DC to 5 GHz with good RF to LO port isolation.

Features:

- Full Waveguide Band Coverage
- Moderate Conversion Loss Performance
- LO Frequency at Half of RF Frequency

Applications:

- Radar Systems
- Communication Systems
- Test Equipment

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency	70 GHz		76 GHz
RF Input P1dB		+10 dBm	
LO Frequency	35 GHz		38 GHz
IF Frequency	DC		5 GHz
LO Pumping Power		+4 dBm	+10 dBm
LO to RF Isolation		15 dB	
Conversion Loss		15 dB	
DC Bias		+6 V_{DC}/ 100 mA	+7 V_{DC}
Specification Temperature		+25 °C	
Case Temperature	-40 °C		+85 °C

Mechanical Specifications:

Item	Specification
RF Port	WR-12 Waveguide with UG-387/U Flange
LO Port	K(F)
IF Port	SMA(F)
Bias	Feed Through Pin
Case Material	Aluminum
Finish	Gold Plated
Weight	2.0 Oz
Size	1.25” (L) X 1.25” (W) X 0.88” (H)
Outline	FT-EEM

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Phone: 424-757-0168 | Fax: 424-757-0188 | Email: sales@sagemillimeter.com

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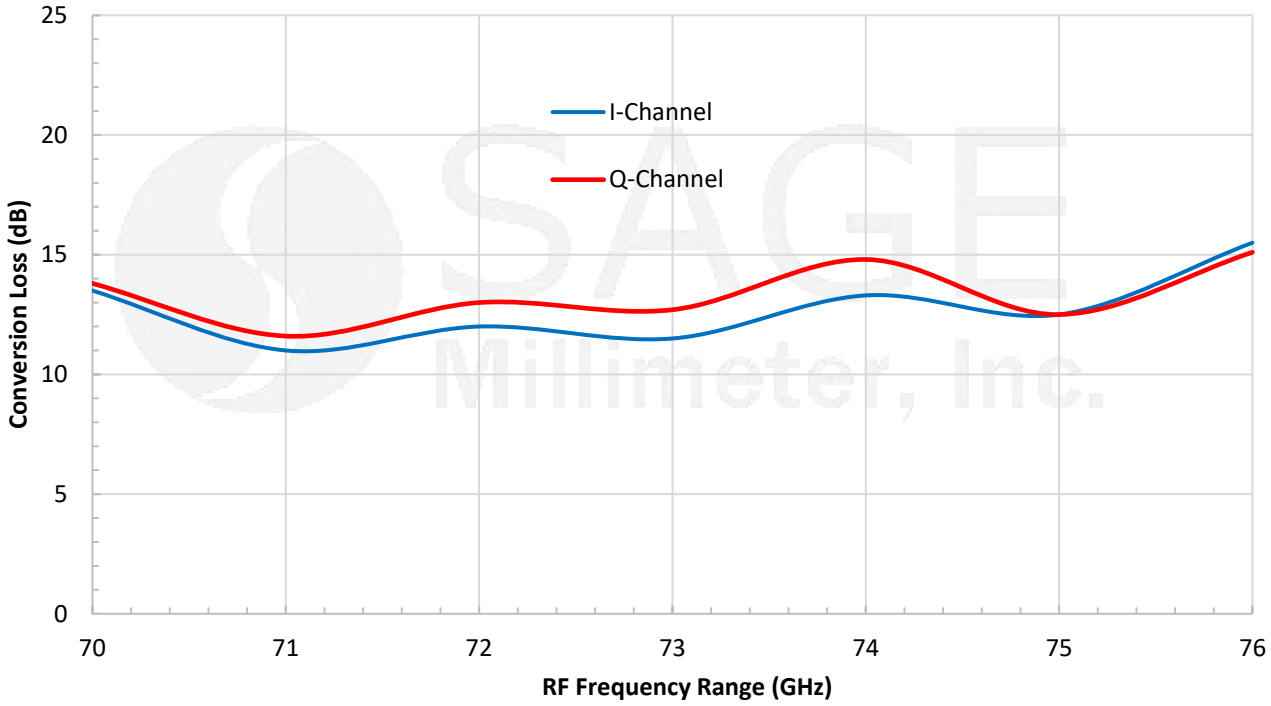
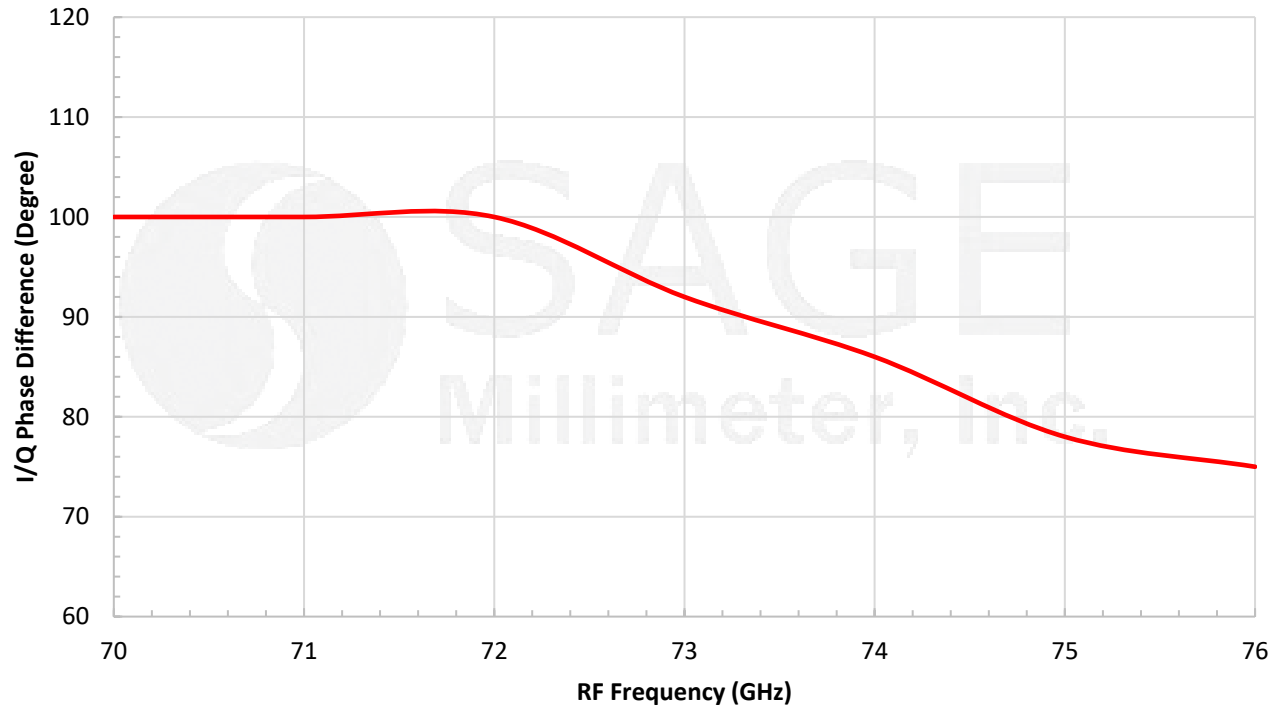
Typical Conversion Loss vs. RF Frequency



Typical I/Q Channel Phase Difference vs. RF Frequency

LO: +16 dBm @ 35 GHz, RF: -30 dBm



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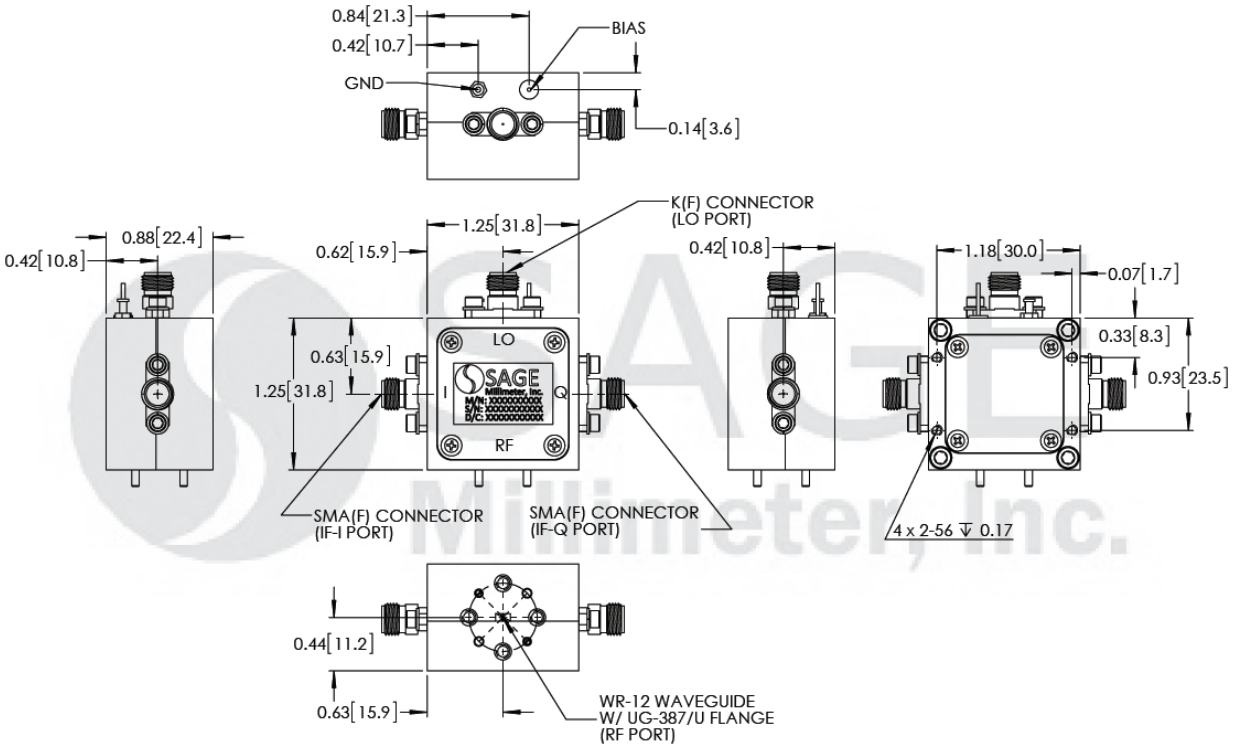
Mechanical Outline: (Unless otherwise specified, all dimensions are in inches [millimeters])



Note:

- All data presented is collected from a sample lot, actual data may vary unit to unit, 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 LO and IF ports.**
- 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.**