SFB-11340312-KFKFSF-N1-M

Rev. 1.0

Balanced Mixer, 11 to 40 GHz, 12 dB Conversion Loss

Description:

Model SFB-11340312-KFKFSF-N1-M is a balanced mixer that utilizes a high performance pHEMT-based MMIC chip and a balanced circuit configuration to offer superior RF performance. The mixer supports the wide waveguide band operation from 11 to 40 GHz for both LO and RF ports. The mixer also supports a broad IF output from DC to 10 GHz. The mixer offers a typical conversion loss of 12 dB when the LO port is pumped at +15 dBm. The mixer is ideal for high linearity digital communication links.

Features:

- Wide Waveguide Band Coverage
- Low Conversion Loss
- DC to 10 GHz IF Bandwidth

Applications:

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

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency	11 GHz		40 GHz
RF Input P_{-1dB}		+9 dBm	
LO Frequency	11 GHz		40 GHz
IF Frequency	DC		10 GHz
LO Pumping Power	+13 dBm	+15 dBm	+18 dBm
Combined LO and RF Power			+21 dBm
RF to LO Isolation		30 dB	
Conversion Loss		12 dB	
Specification Temperature		+25 ˚C	
Case Temperature	-40 ˚C		+85 ˚C

Note: The RF input P-1 dB is LO pumping power related. The value shown is at LO power +15 dBm. The higher the LO power, the higher the input P-1dB.

Mechanical Specifications:

Item	Specification
RF	K(F)
LO	K(F)
IF	SMA(F)
Case Material	Aluminum
Finish	Gold Plated
Weight	0.6 Oz
Size	0.80” (L) X 0.80” (W) X 0.39” (H)
Outline	UH-235-3C

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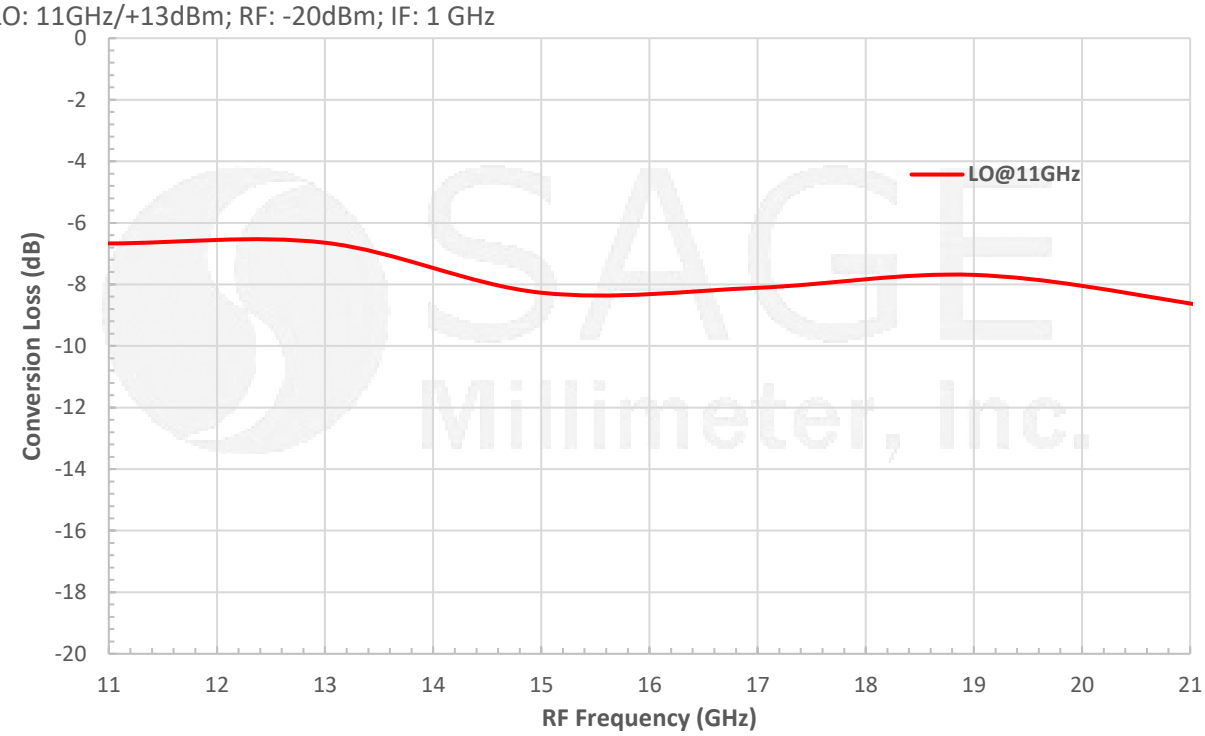
Balanced Mixer, 11 to 40 GHz, 12 dB Conversion Loss

Typical Conversion Loss vs Frequency

LO: 11GHz/+13dBm; RF: -20dBm; IF: 1 GHz



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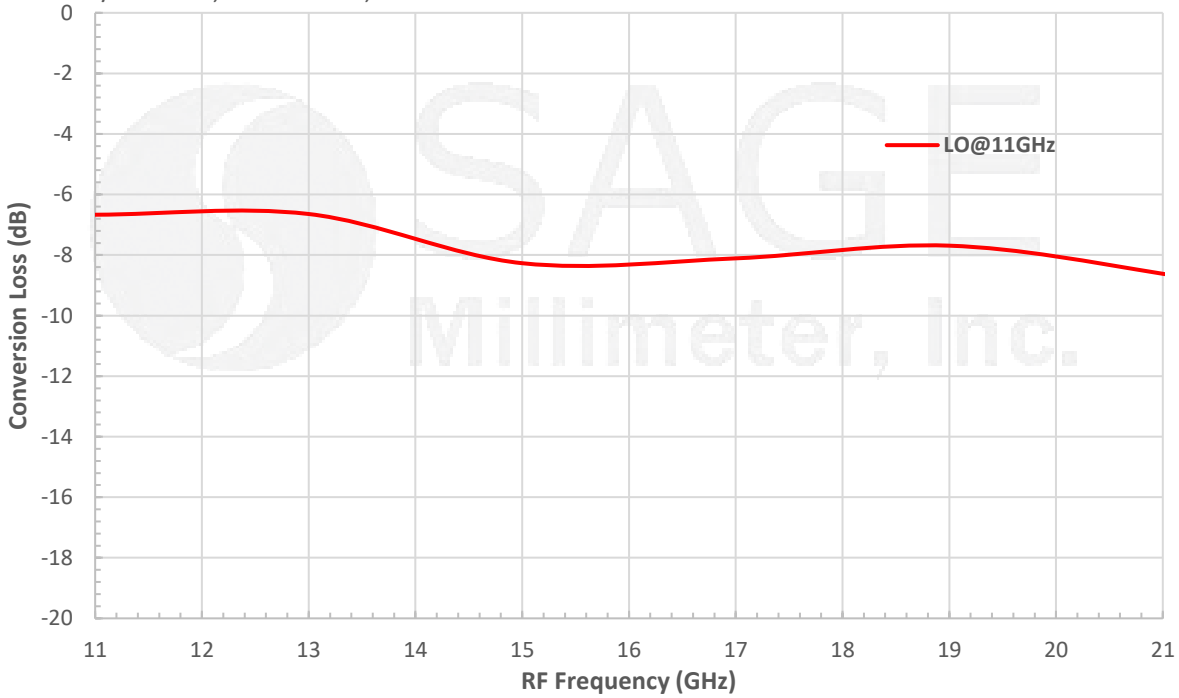

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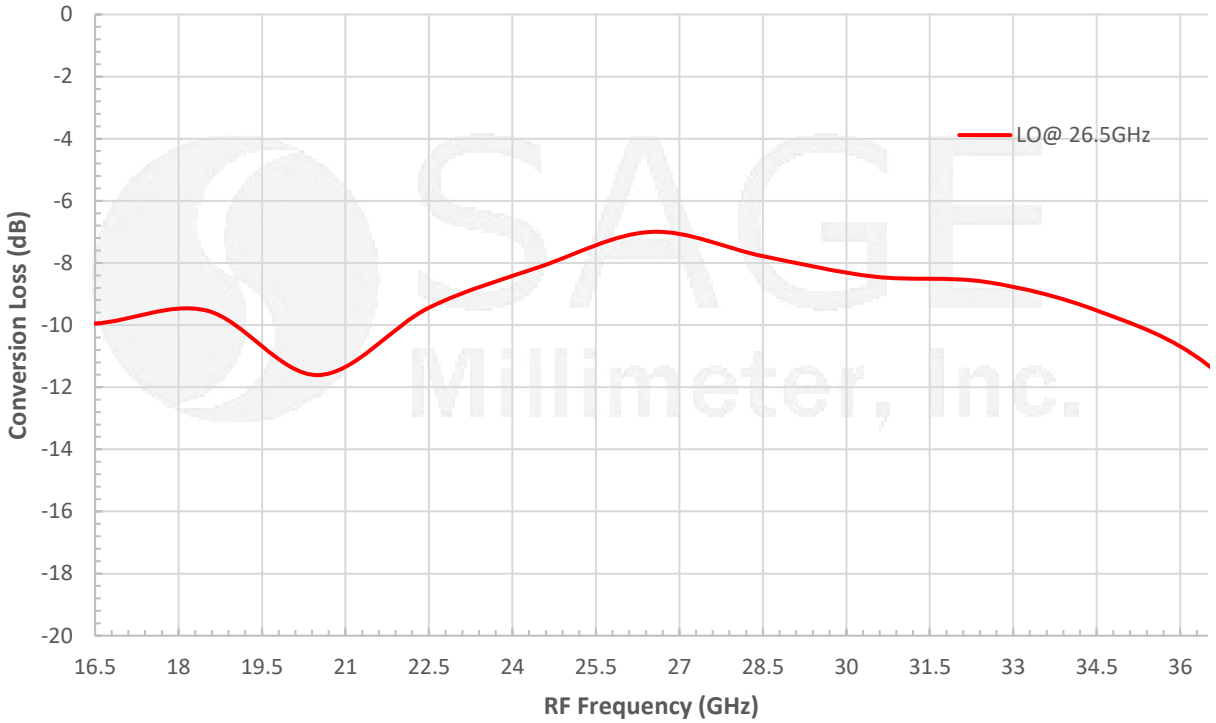
Balanced Mixer, 11 to 40 GHz, 12 dB Conversion Loss

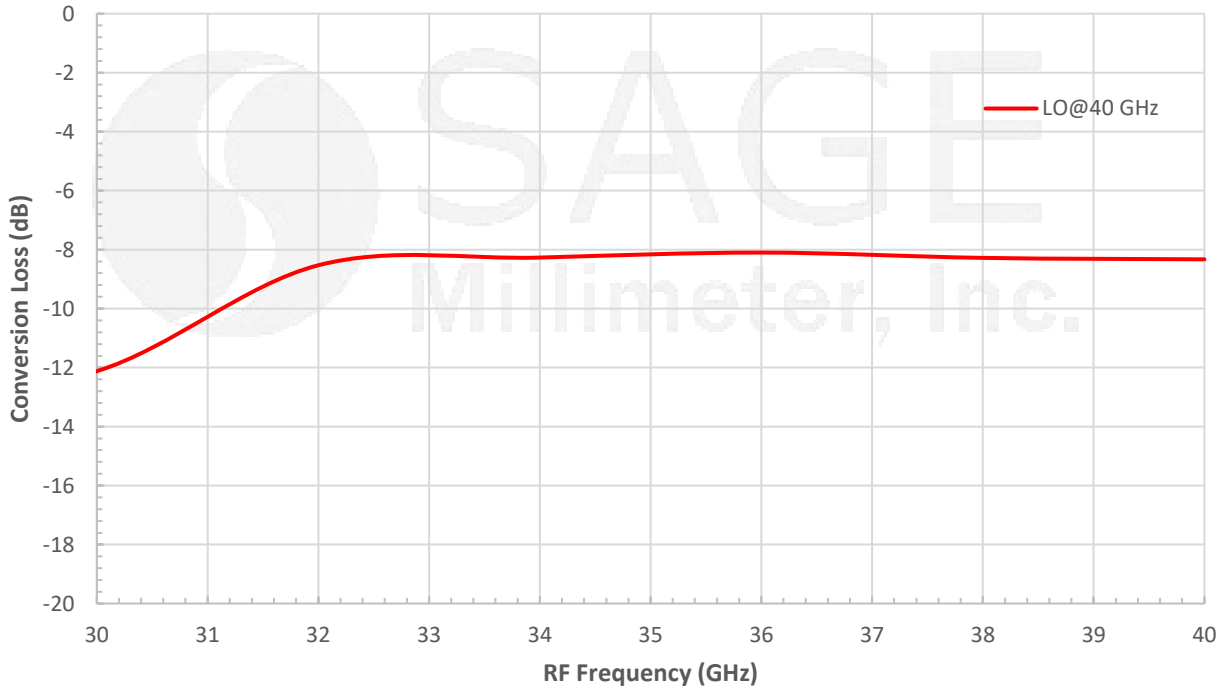
Typical Conversion Loss vs Frequency

LO: 26.5 GHz/+13dBm; RF: -20dBm; IF: 1 GHz



Typical Conversion Loss vs Frequency

LO: 40GHz/+13dBm; RF: -20dBm



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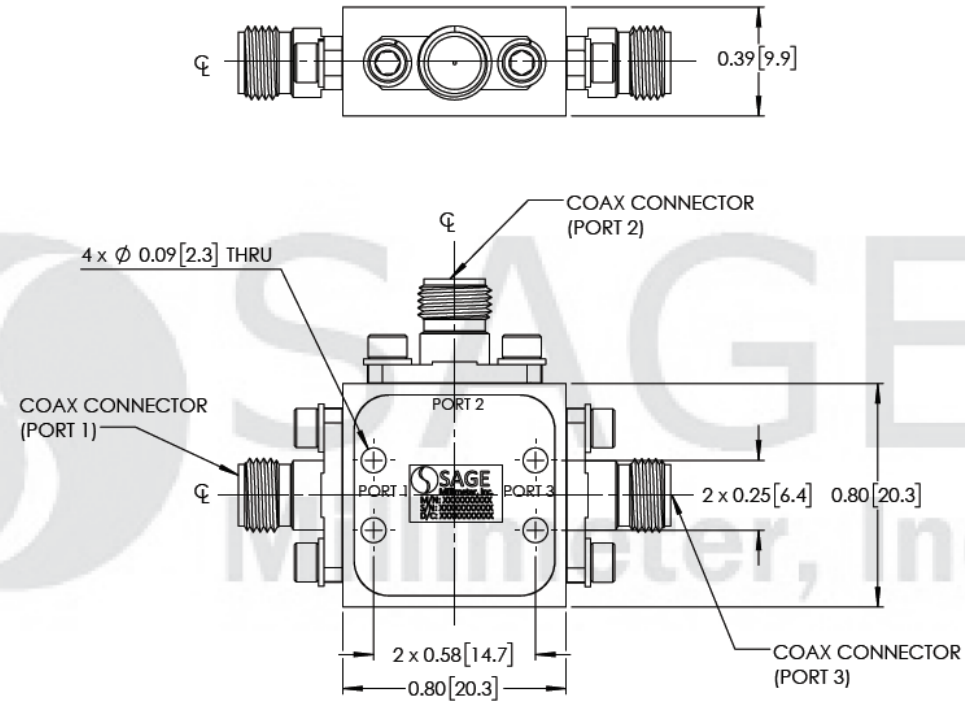
Balanced Mixer, 11 to 40 GHz, 12 dB Conversion Loss

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.

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 IF port.**
- 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.**