

## Balanced Mixer, 18 to 50 GHz, 10 dB Conversion Loss

## Description:

**Model SFB-18350310-2F2FSF-N1-M** is a balanced mixer that utilizes a high performance MMIC chip and a balanced circuit configuration to offer superior RF performance. The mixer supports the wide waveguide band operation from 18 to 50 GHz for both LO and RF ports. The mixer also supports a broad IF output from DC to 20 GHz. The mixer offers a typical conversion loss of 10 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 20 GHz IF Bandwidth

## Applications:

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

## Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency	18 GHz		50 GHz
LO Frequency	18 GHz		50 GHz
IF Frequency	DC		20 GHz
LO Pumping Power	+13 dBm	+15 dBm	+18 dBm
Conversion Loss		10 dB	
Input P-1dB		+9 dBm	
LO to RF Isolation		35 dB	
LO to IF Isolation		35 dB	
RF to IF Isolation		30 dB	
Combined LO and RF Power			+21 dBm
Specification Temperature		+25 °C	
Operating Temperature	0 °C		+50 °C

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

## Mechanical Specifications:

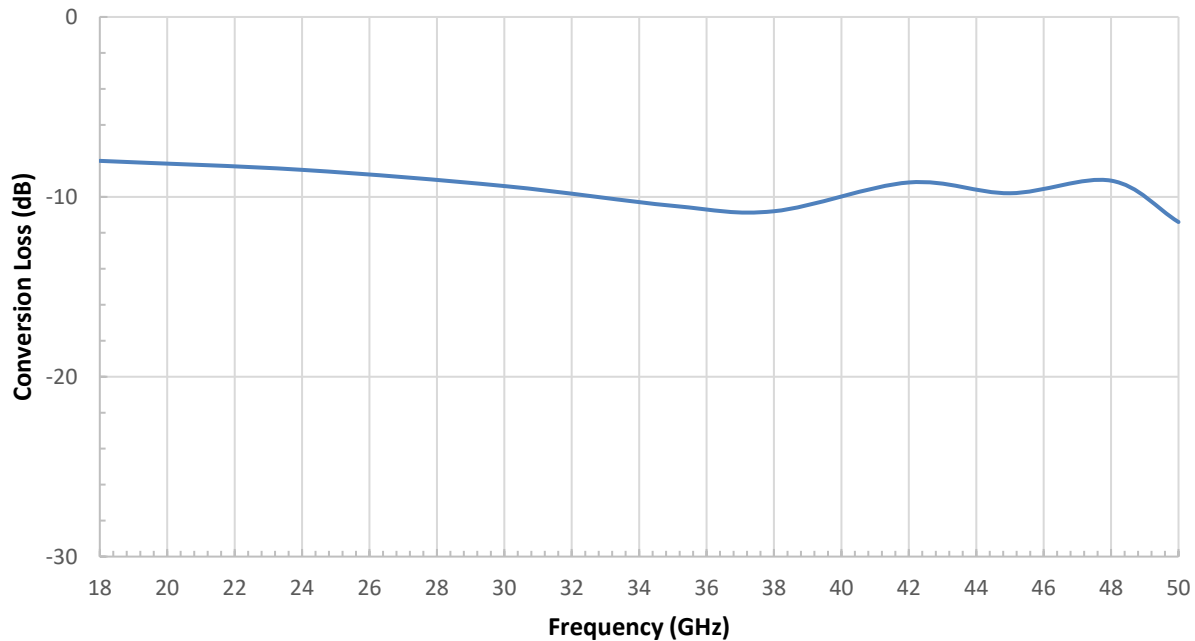
Item	Specification
RF (Port 1)	2.4 mm (F)
LO (Port 2)	2.4 mm (F)
IF (Port 3)	SMA(F)
Case Material	Aluminum
Finish	Gold Plated
Weight	0.6 Oz
Size	0.80" (L) X 0.80" (W) X 0.39" (H)
Outline	UH-235-3C



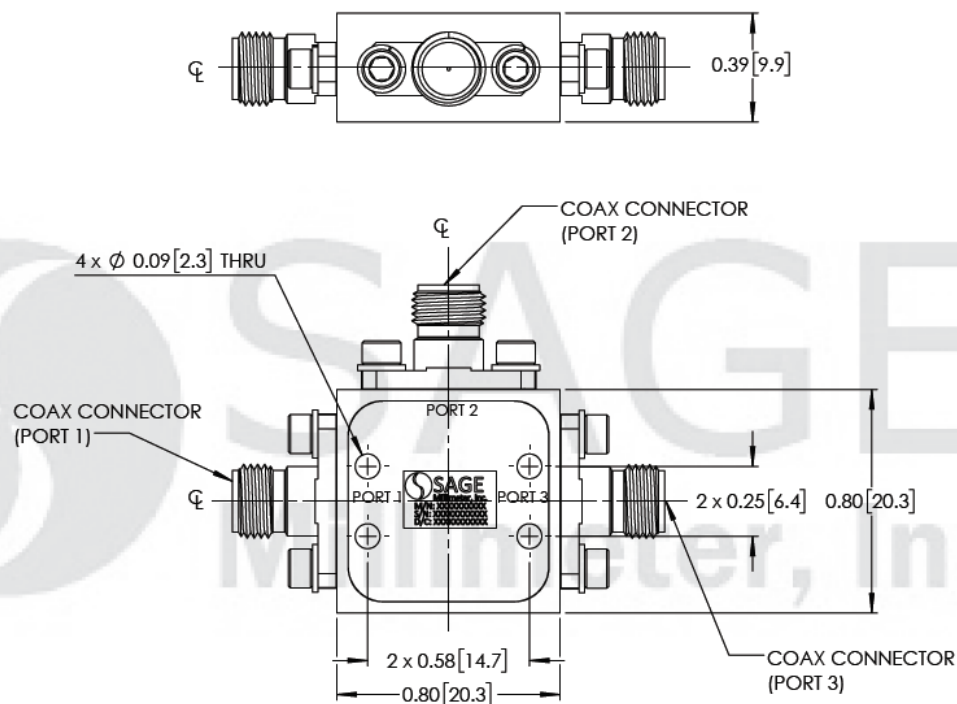
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### Conversion Loss vs. Frequency

LO: +15 dBm; RF: -20 dBm; IF: 100 MHz



**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.
- A DC block at IF port may be required when connecting to a device, such as an IF low noise amplifier or a base band mixer which input port is DC coupled.
- Eravant reserves the right to change the information presented without notice.

### Caution:

- Exceeding absolute maximum ratings shown will damage the device.
- **The mixer is a small signal device. The typical RF input level is 0 dBm or lower.**
- 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.
- **Never apply an external bias voltage to the IF port because the mixer will be damaged.**
- Proper torque,  $8.0 \pm 0.15$  inch-pounds ( $0.92 \pm 0.05$  Nm), should be applied. **Eravant torque wrench, model SCH-08008-S1, is highly recommended.**

