

Broadband Quadrature Mixer or Phase Detector, 18 to 65 GHz

Description:

Model SFQ-18365315-VFVFSF-N1-M is a broadband quadrature mixer that covers the frequency range of 18 to 65 GHz. The typical conversion loss of the quadrature mixer is 15 dB with an LO driving power of +18 dBm. The typical LO to RF port isolation is 45 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	18 GHz		65 GHz
LO Frequency	18 GHz		65 GHz
LO Pumping Power	+17 dBm	+18 dBm	+19 dBm
IF Frequency	DC		20 GHz
Conversion Loss		15 dB	
I/Q Amplitude Unbalance		±1.5 dB	
I/Q Phase Unbalance		±10°	
LO to RF Port Isolation		45 dB	
LO to IF Port Isolation		30 dB	
RF to IF Port Isolation		20 dB	
IP1dB		+10 dBm	

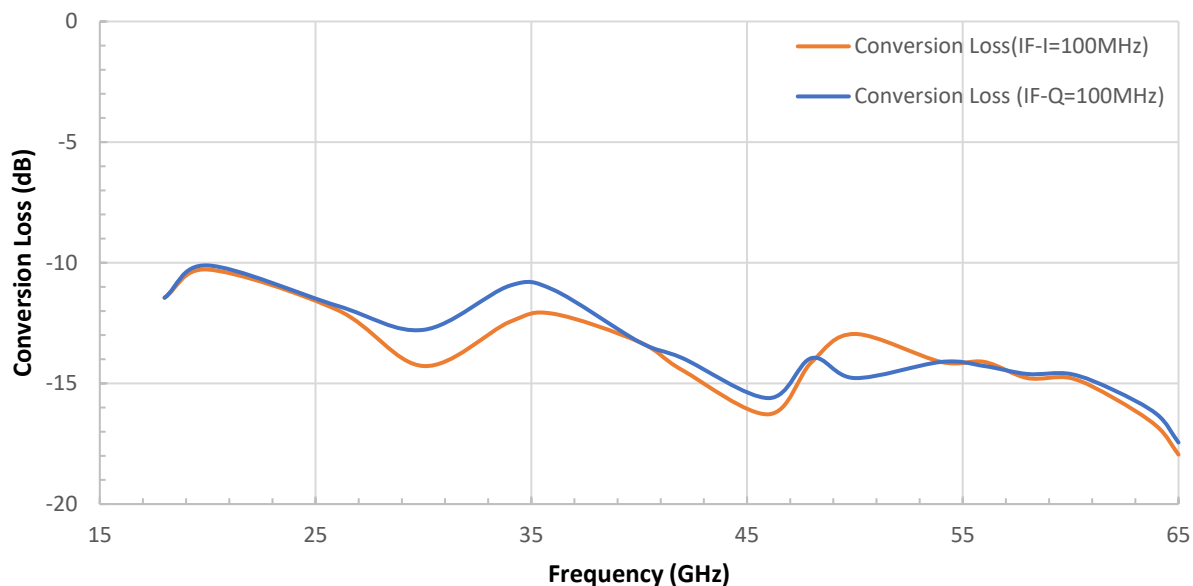
Mechanical Specifications:

Item	Specification
RF (Port 1)	V (F)
LO (Port 4)	V (F)
IF-I (Port 2)	SMA (F)
IF-Q (Port 3)	SMA (F)
Case Material	Aluminum
Finish	Gold Plated
Weight	0.68 Oz
Outline	UH-235-4C

Broadband Quadrature Mixer or Phase Detector, 18 to 65 GHz

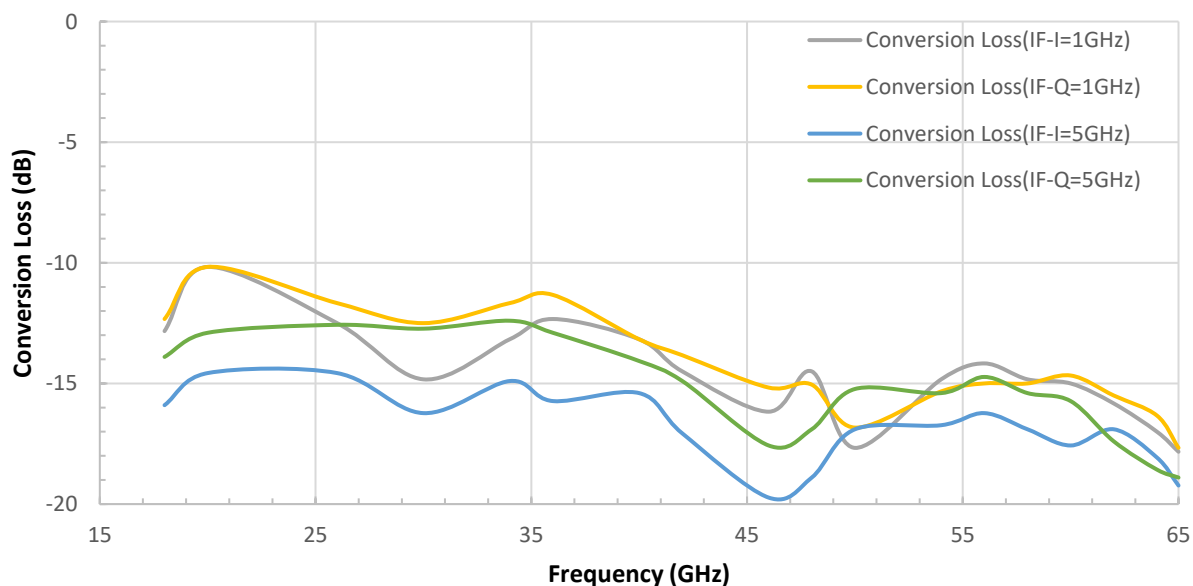
Typical Conversion Loss vs. Frequency

RF: -20 dBm (Typ); LO: +18 dBm (Typ)



Typical Conversion Loss vs. Frequency

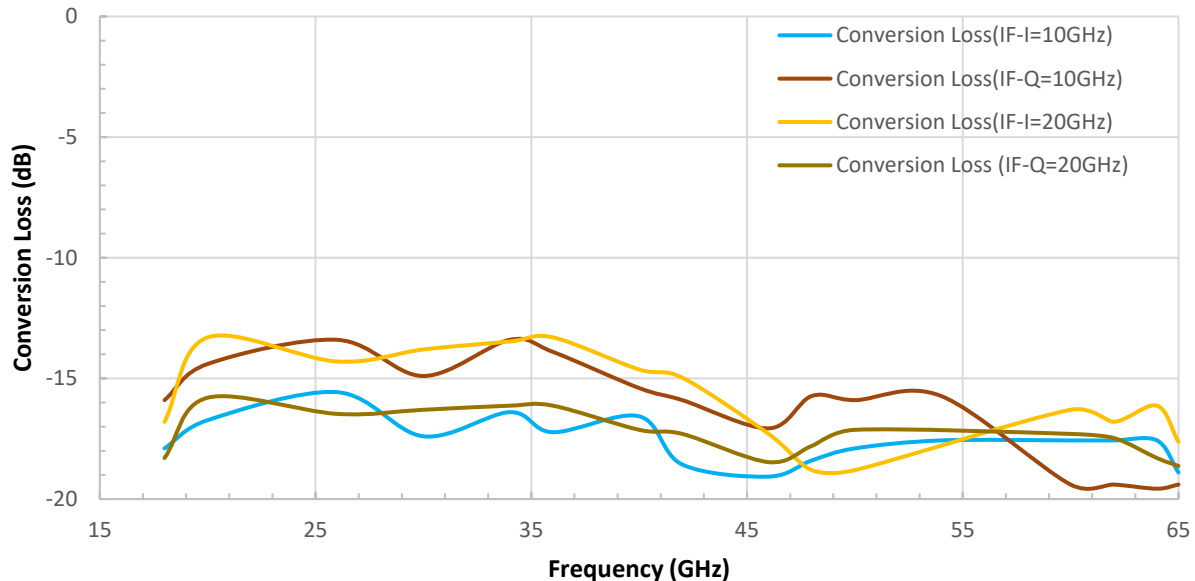
RF: -20 dBm (Typ); LO: +18 dBm (Typ)



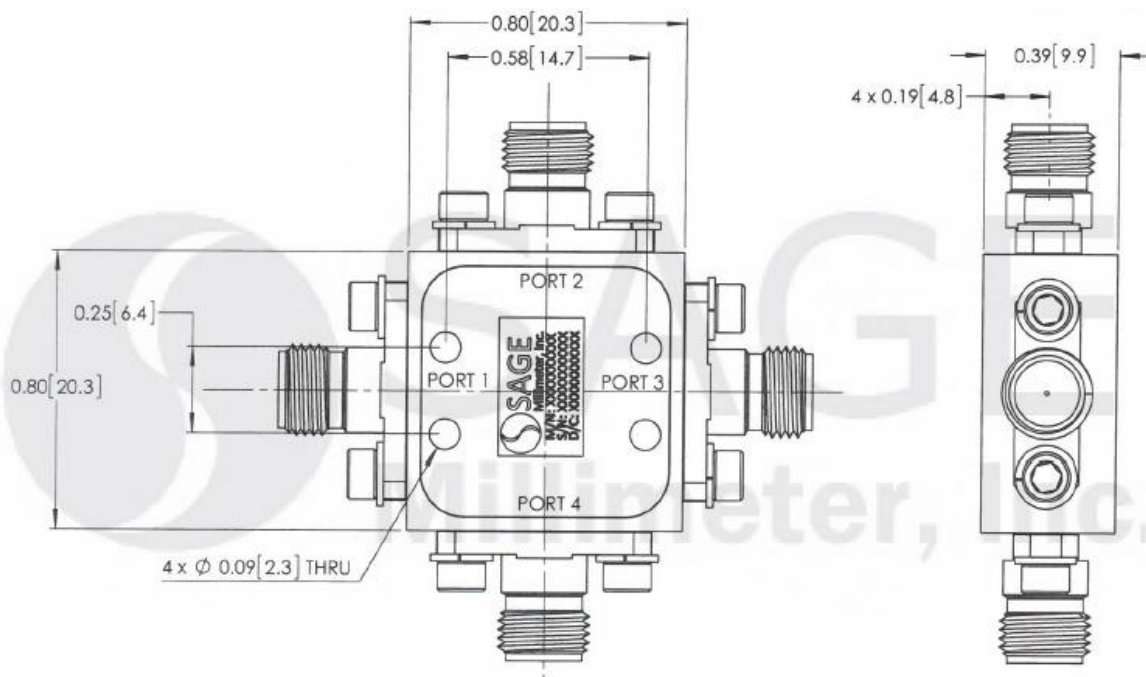
Broadband Quadrature Mixer or Phase Detector, 18 to 65 GHz

Typical Conversion Loss vs. Frequency

RF: -20 dBm (Typ); LO: +18 dBm (Typ)



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





Broadband Quadrature Mixer or Phase Detector, 18 to 65 GHz

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.
- 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.
- Eravant 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. **Eravant torque wrench, model SCH-08008-S1, is highly recommended.**

