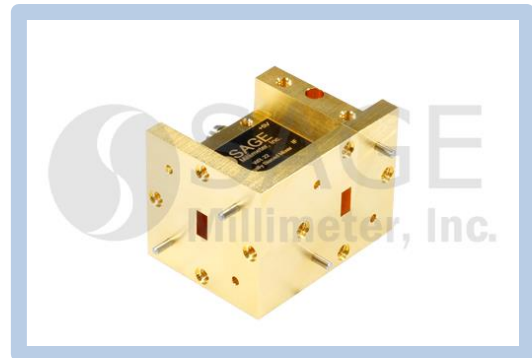




## V-Band Balanced Mixer, 55 to 75 GHz

### Description:

**Model SFB-55375307-1519SF-N1** is a V-Band, balanced mixer. The mixer supports a wide waveguide band operation with an RF frequency of 55 to 75 GHz, an IF frequency from 40 to 60 GHz, and an IF output from DC to 25 GHz. The mixer offers a typical conversion loss of 10 dB and a high RF to LO port isolation. The mixer has a WR-15 waveguide for the RF port to cover the V Band frequencies up to 75 GHz, while the local oscillator port has a WR-19 waveguide to cover the U band frequencies down to 40 GHz. This configuration supports high data rate operations up to 25 GHz. This mixer can also be used as an up-converter.



### Features:

- Near Full Waveguide Band Coverage
- Low Conversion Loss
- High IF Frequency up to 25 GHz

### Applications:

- Radar Systems
- Communication Systems
- Test Equipment

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency	55 GHz		75 GHz
LO Frequency	40 GHz		60 GHz
IF Frequency	DC		25 GHz
LO Pumping Power		+13 dBm	
RF Input P <sub>1dB</sub>		-3 dBm	
Conversion Loss		10 dB	
RF to LO Isolation		30 dB	
Combined RF and LO Power			+18 dBm
Specification Temperature		+25°C	
Case Temperature	-40°C		+85°C

### Mechanical Specifications:

Item	Specification
RF	WR-15 Waveguide with UG-385/U Anti-Cocking Flange
LO	WR-19 Waveguide with UG-383/U-M Anti-Cocking Flange
IF	SMA (F)
Case Material	Aluminum
Finish	Gold Plated
Weight	1 Oz
Outline	FB-NVU-A

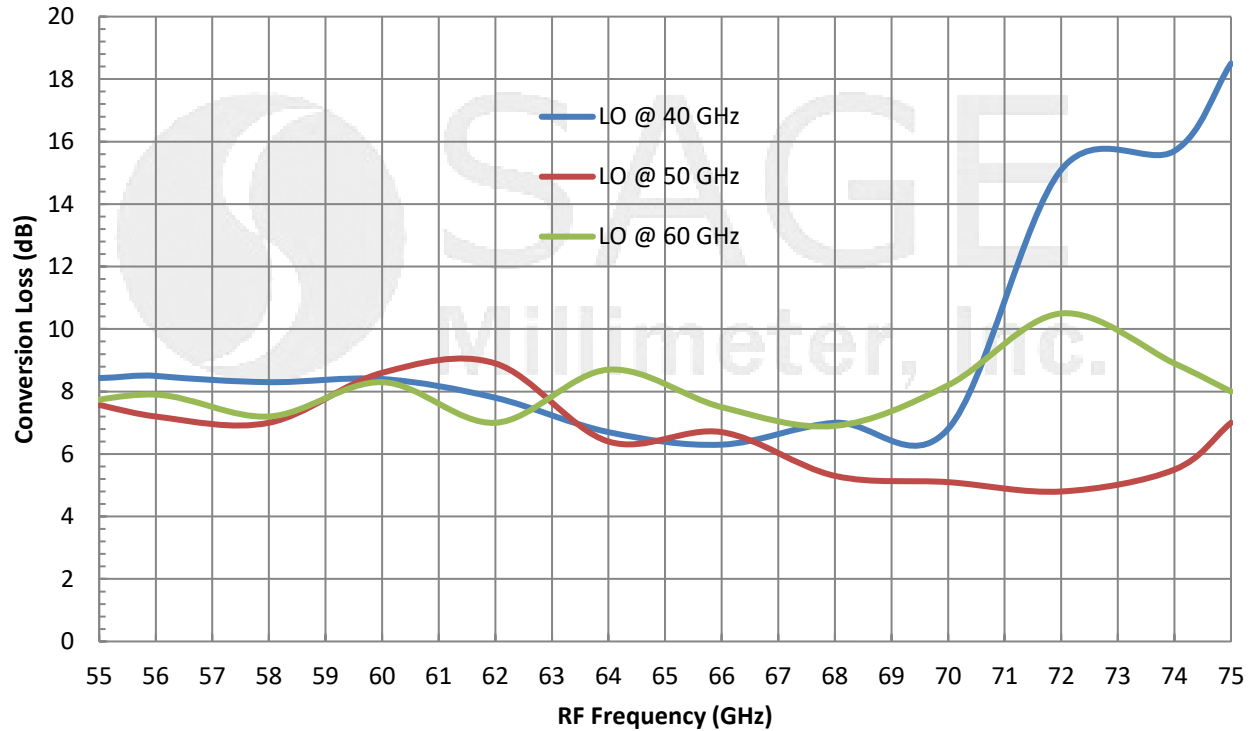




## V-Band Balanced Mixer, 55 to 75 GHz

### Typical Conversion Loss vs. Frequency

RF: -20 dBm; LO: +13 dBm

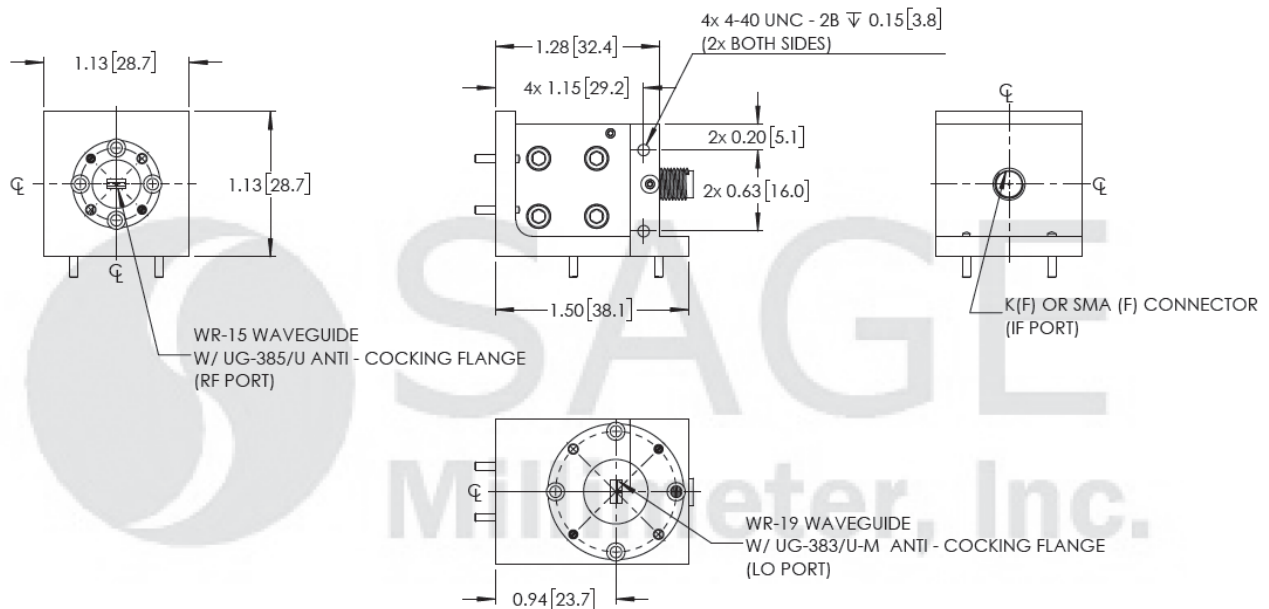


**Mechanical Outline:** (Unless otherwise specified, all dimensions are in inches [millimeters])





## V-Band Balanced Mixer, 55 to 75 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.
- 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 balanced 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 can possibly damage the device.
- Proper torque,  $8.0 \pm 0.15$  inch-pounds ( $0.92 \pm 0.05$  Nm), should be applied. **SAGE Millimeter torque wrench, model SCH-08008-S1, is highly recommended.**

