

V Band Balanced Mixer with U Band LO Port, DC to 35 GHz IF

Description:

Model SFB-50375315-1519KF-N1 is a V-band balanced mixer with U band LO port that utilizes high performance GaAs Schottky beam-lead diodes and a balanced circuit configuration to offer superior RF performance. With an RF frequency of 50 to 75 GHz and an LO frequency of 40 to 60 GHz, the mixer supports the full waveguide band operation for both ports. The mixer also offers an extremely broad IF bandwidth from DC to 35 GHz, a conversion loss of 15 dB typical and a high RF to LO port isolation of 30 dB, respectively. The RF port is the mixer is a WR-15 waveguide with UG-385/U anti-cocking flange and LO port is WR-19 waveguide with UG-383/U-M anti-cocking flange to accommodate low LO frequency operation.



Features:

- Compact Package
- Low Conversion Loss
- High Port Isolations
- IF Port DC Coupled

Applications:

- Speed and Ranging Radar Systems
- Communication Systems
- Test Equipment

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency	50 GHz		75 GHz
LO Frequency	40 GHz		60 GHz
IF Frequency	DC		35 GHz
LO Pumping Power		+13 dBm	+15 dBm
Conversion Loss		15 dB	18 dB
RF Input P _{-1dB}		-3 dBm	
RF to LO Isolation		30 dB	
Combined RF & LO Power			+18 dBm
Specification Temperature		+25 °C	
Operating Temperature	-40 °C		+85 °C

Mechanical Specifications:

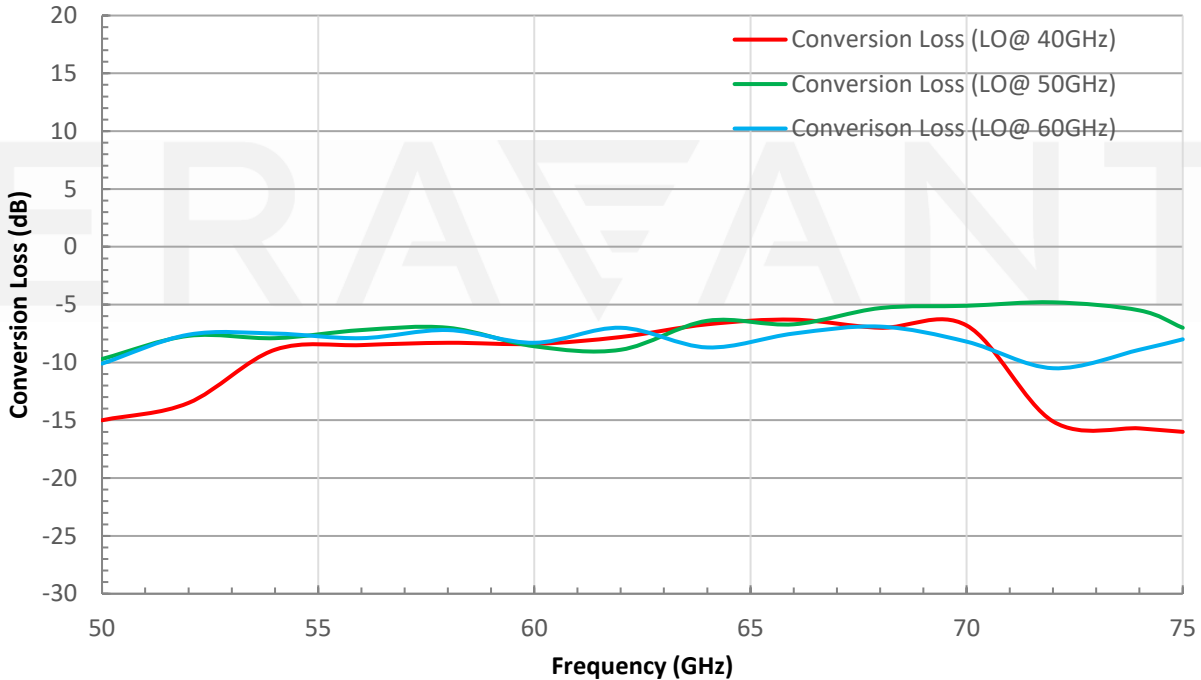
Item	Specification
RF Port	WR-15 Waveguide with a UG-385/U Anti-Cocking Flange
LO Port	WR-19 Waveguide with a UG-383/U-M Anti-Cocking Flange
IF Port	K (F)
Case Material	Aluminum
Finish	Gold Plated
Weight	1.8 Oz
Outline	FB-NVU-A



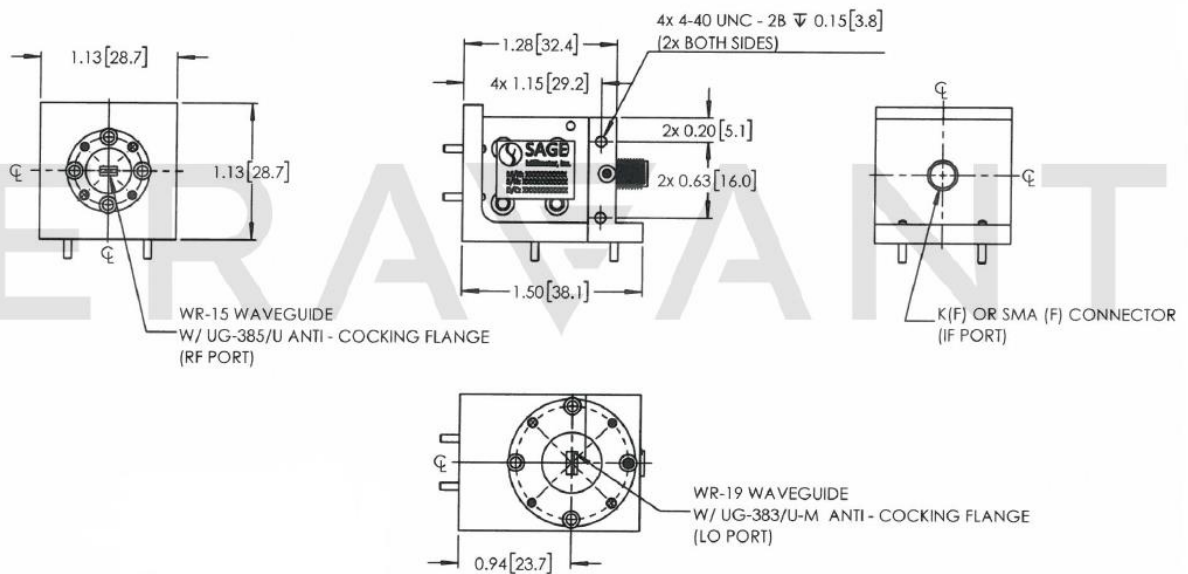
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Typical Conversion Loss vs. Frequency

RF: -20 dBm; LO: +13 dBm



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

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