SFH-5037530316-15KFSF-N3

V-Band Third Harmonic Mixer, 50 to 75 GHz

SFH-5037530316-15KFSF-N3 is a V-Band third harmonic mixer. The mixer is designed with high performance GaAs Schottky diodes to provide mixing at 3X LO frequency to cover the RF frequency range from 50 to 75 GHz. The low LO frequency makes this mixer well suited for low-cost V band system solutions with an LO frequency range of 16.67 to 25 GHz. The mixer provides 18 dB conversion loss and 30 dB LO to IF isolation.

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency	50 GHz		75 GHz
LO Frequency	16.67 GHz		25 GHz
IF Frequency	DC		3 GHz
RF Power		-20 dBm	+9 dBm
LO Power	+3 dBm	+6 dBm	+9 dBm
Conversion Loss		18 dB	
LO to IF Isolation		30 dB	
Combined LO and RF Power			+9 dBm
Specification Temperature		+25°C	
Operating Temperature	0°C		+50°C

Mechanical Specifications:

Item	Specification
RF Ports	WR-15 Waveguide with UG-385/U Flange
LO Port	K (F)
IF Port	SMA (F)
Case Material	Aluminum
Finish	Gold Plated
Outline	FH-V3

ECCN

EAR99

FEATURES

- Low LO Power Requirement
- Third Harmonic Mixing
- Compact Package

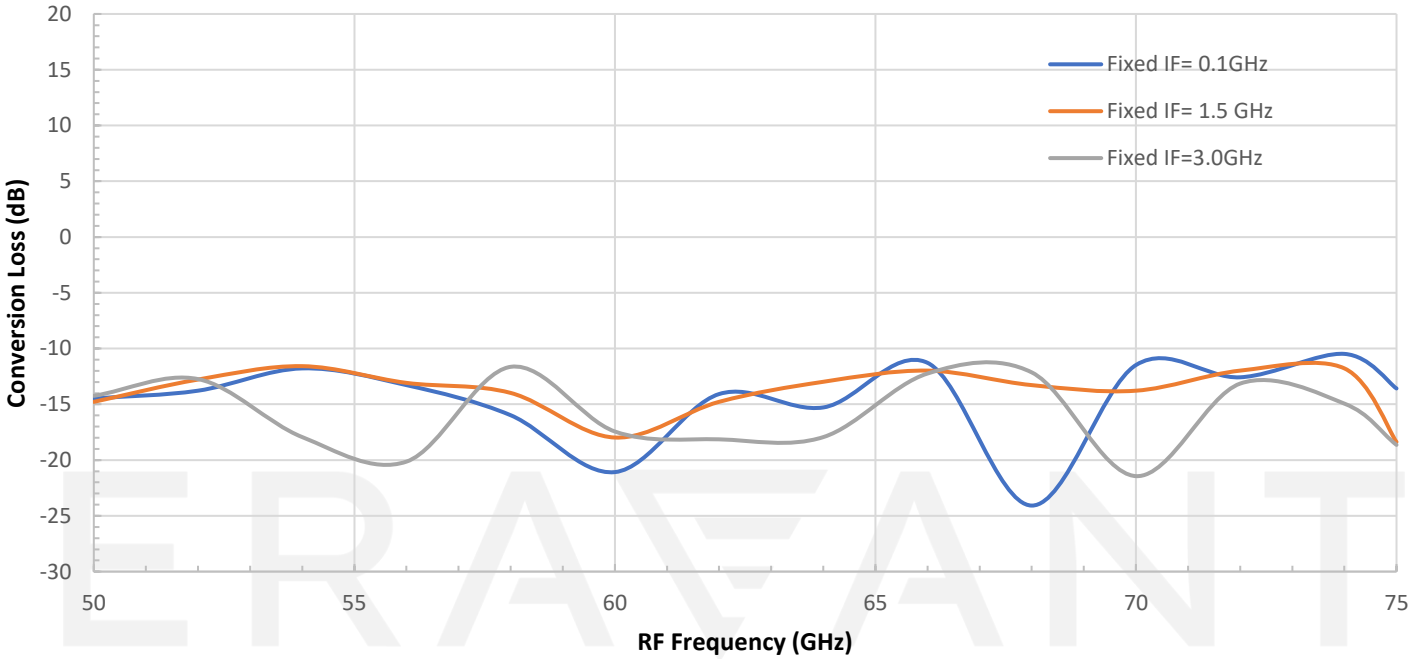
APPLICATIONS

- Radar Systems
- Communication Systems
- Test Equipment

SUPPLEMENTAL DETAILS

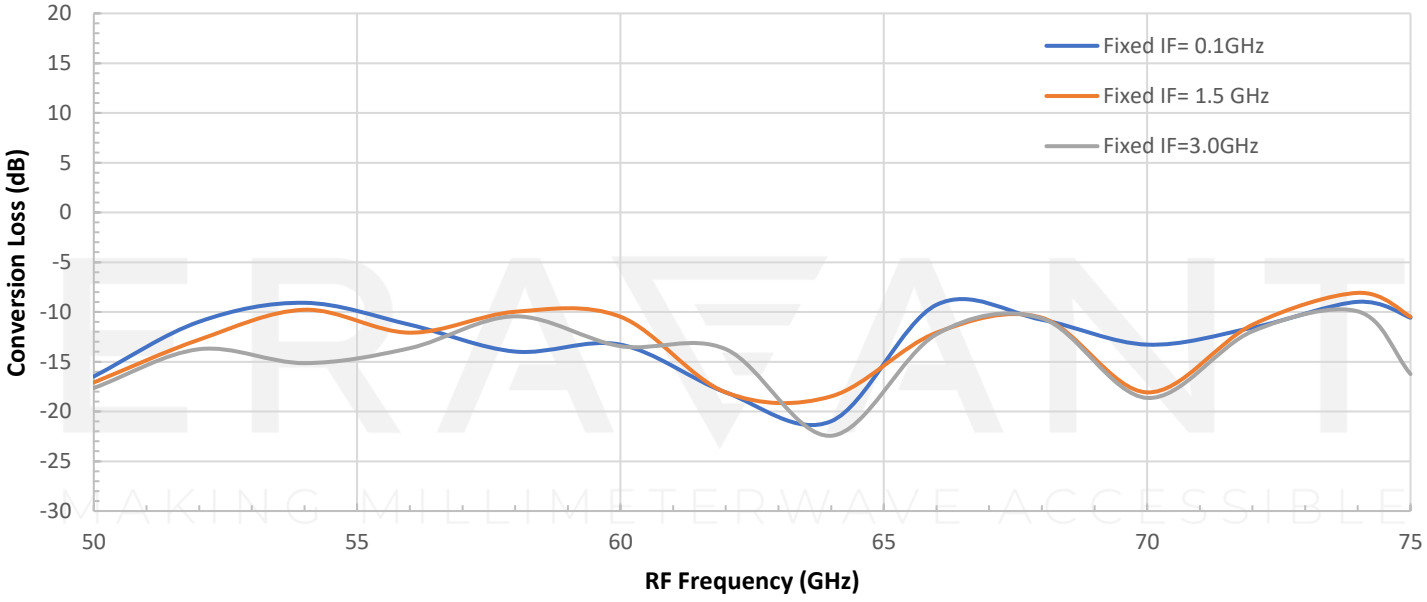
Conversion Loss vs. Frequency

RF: -20 dBm; LO: +3 dBm

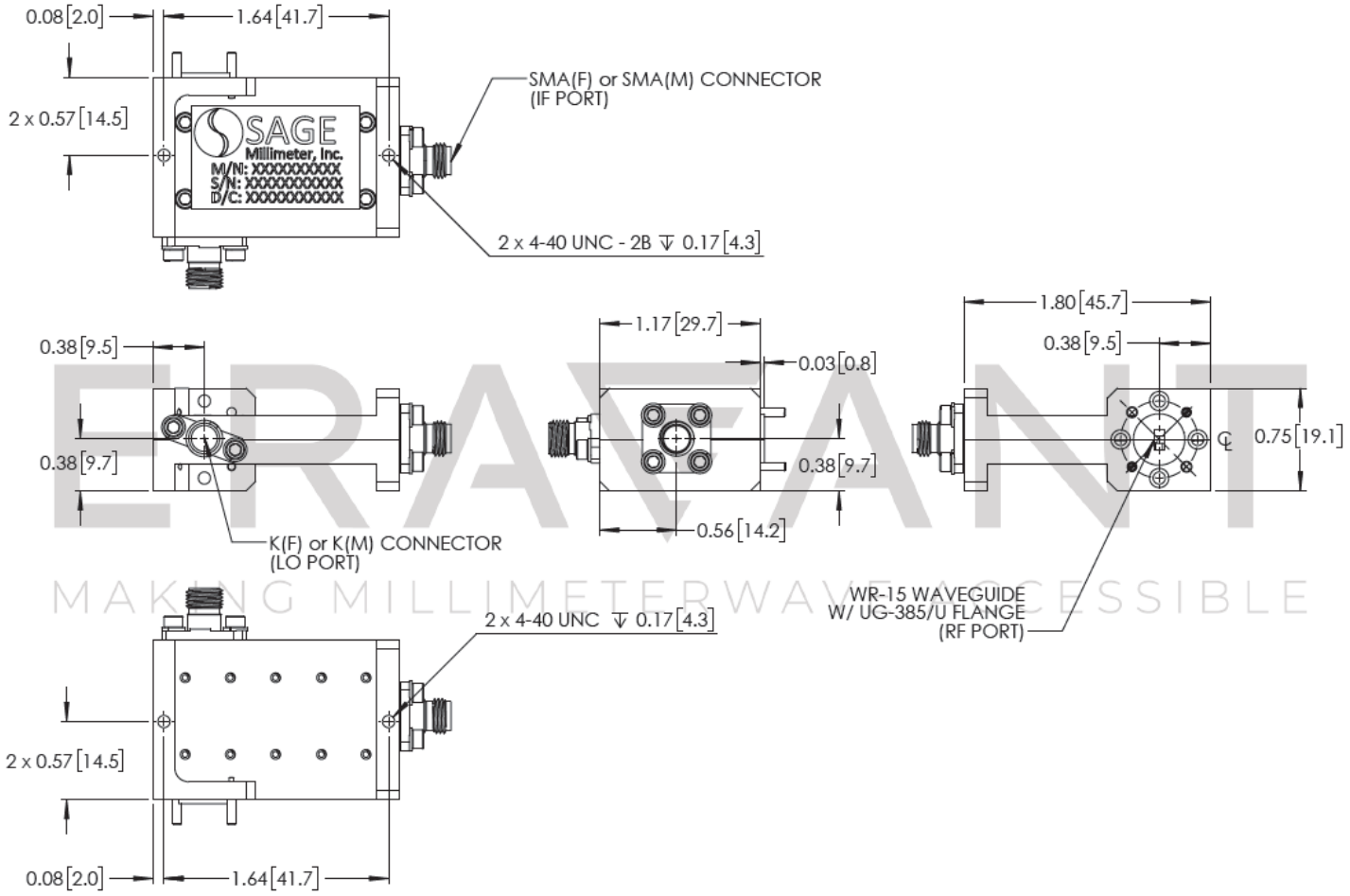


Conversion Loss vs. Frequency

RF: -20 dBm; LO: +6 dBm



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



NOTE:

- The harmonic mixer is for small signal detection. The recommended the RF power range is -10 dBm or below.
- All data presented is collected from a sample lot. Actual data may vary slightly unit to unit. All testing is performed under +25 °C room temperature.
- Eravant reserves the right to change the information presented without notice.

CAUTION:

- Exceeding absolute maximum ratings of the mixer will damage the device.
- The IF port of the mixer is DC Coupled. Use a DC block when connecting to other devices. **Any external bias voltage applied to the IF port will damage the mixer.**
- The mixer is a static sensitive device. Always follow ESD rules when working with the mixer.
- Eravant recommends the use of ESD wrist and ankle straps, grounded ESD dissipative surfaces, and air ionizers when handling the device.
- Any foreign objects in the waveguide will degrade performance and/or damage the device.
- For 1.35 mm, 1.85 mm, 2.4 mm, 2.92 mm, and SMA connectors proper torque should be applied: 8.0 ± 0.15 inch-pounds (0.90 ± 0.02 Nm). Torque wrench model SCH-08008-S1 is highly recommended.