SFS-10-N1

W-Band Sub-harmonically Pumped Mixer, 75 to 110 GHz

SFS-10-N1 is a W-Band sub-harmonically pumped mixer. The mixer is designed with high performance GaAs Schottky diodes and accepts an LO frequency at half the RF frequency to cover the frequency range from 75 to 110 GHz. With a low LO frequency range of 37.5 to 55 GHz, this mixer is well suited for low-cost W-Band system solutions as a result of half of the operating RF frequency. The mixer provides 15 dB conversion loss. The sub-harmonically pumped mixers in other frequency bands are offered under various model numbers.

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency	75 GHz		110 GHz
LO Frequency	37.5 GHz		55 GHz
IF Frequency	DC		5.0 GHz
LO Pumping Power	+13 dBm	+15 dBm	+17 dBm
Conversion Loss		15 dB	
Combined RF and LO Power			+20 dBm
Specification Temperature		+25°C	
Operating Temperature	0°C		+50°C

Mechanical Specifications:

Item	Specification
RF Port	WR-10 Waveguide with UG-387/U-M Anti-Cocking Flange
LO Port	1.85 mm (V) (F)
IF Port	SMA (F)
Case Material	Aluminum
Finish	Gold Plated
Weight	0.5 Oz
Outline	FS-NW-A

ECCN

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FEATURES

- Subharmonic Mixing
- Compact Package

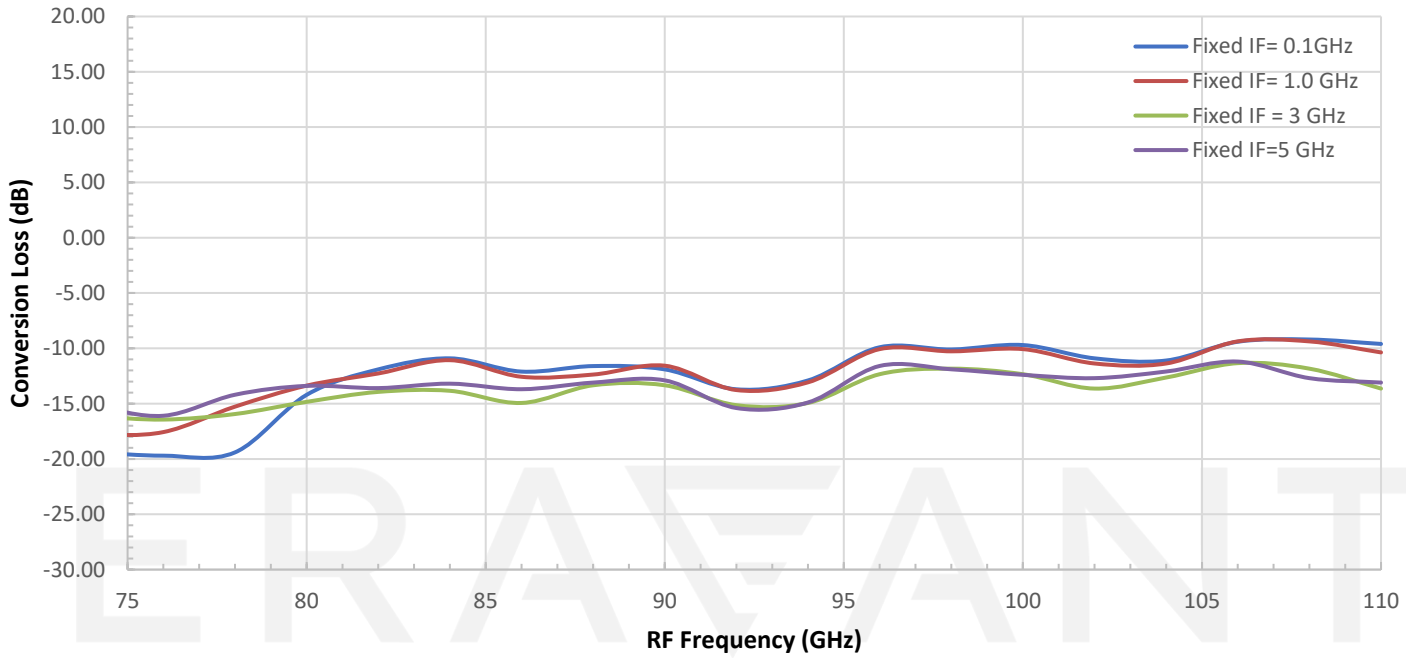
APPLICATIONS

- Radar Systems
- Communication Systems
- Test Equipment

SUPPLEMENTAL DETAILS

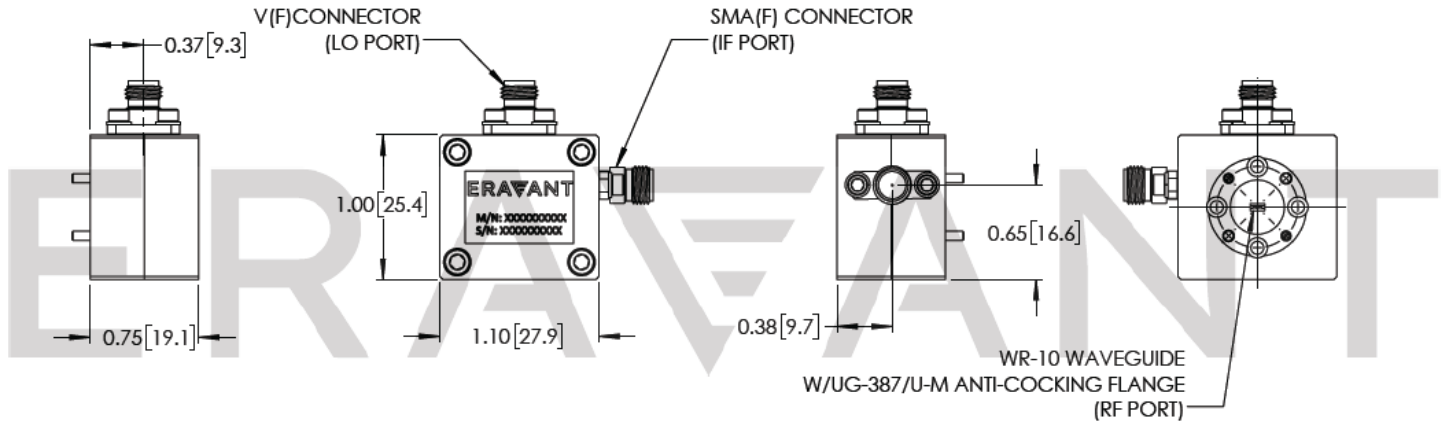
Conversion Loss vs. Frequency

RF: -20 dBm; LO: +15 dBm



Mechanical Outline:

Unless otherwise specified, all dimensions are in inches [millimeters])



NOTE:

- Test data provided is collected from a sample lot. Actual data may vary slightly from 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 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. **Any external bias voltage applied to the IF port will damage the mixer. Eravant model, SCB-050-KFKM-U2, is highly recommended.**
- Any foreign objects in the waveguide will cause performance degradation and may damage or destroy the unit.
- For 1 mm connectors proper torque should be applied: 4.0 ± 0.15 inch-pounds (0.45 ± 0.02 Nm). Torque wrench model SCH-06004-S1 is highly recommended.
- 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.

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