

SFH-22SFSF-A3-2

Q-Band Harmonic Mixer, Keysight Spectrum Analyzer

SFH-22SFSF-A3-2 is a Q-Band balanced harmonic mixer that is specially designed for use with spectrum analyzer series with separate LO and IF ports. The mixer employs high performance, GaAs Schottky diodes and a balanced configuration to produce a superior RF performance. With an IF range of DC to 1.6 GHz, the harmonic mixer uses the harmonic number 6 of a 5.0 to 12.0 GHz LO at +16 dBm to translate 33.0 to 50.0 GHz. The harmonic mixer has a typical conversion loss of 25 dB. The mixer can be used as other even harmonic numbers, such as 4, 8, and 10, etc. with various conversion loss performance. In general, the lower the harmonics, the lower the conversion loss.



Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency	33 GHz		50 GHz
LO Frequency	5.0 GHz		12.0 GHz
IF Range	DC		1.6 GHz
RF Power		-20 dBm	+19 dBm
LO Power		+16 dBm	+19 dBm
Harmonic Number		6	
Conversion Loss		25 dB	
Specification Temperature		+25°C	
Operating Temperature	0°C		+50°C

Mechanical Specifications:

Item	Specification
RF Port	WR-22 Waveguide with UG-383/U Anti-Cocking Flange
LO Port	SMA (F)
IF Port	SMA (F)
Case Material	Brass
Finish	Gold Plated
Weight	5.5 Oz
Outline	FH-Q2-A

ECCN

EAR99

FEATURES

- Full Waveguide Band Operation
- No External Bias Required
- Even Harmonic Detection
- Calibrated for 6th Harmonic Detection

APPLICATIONS

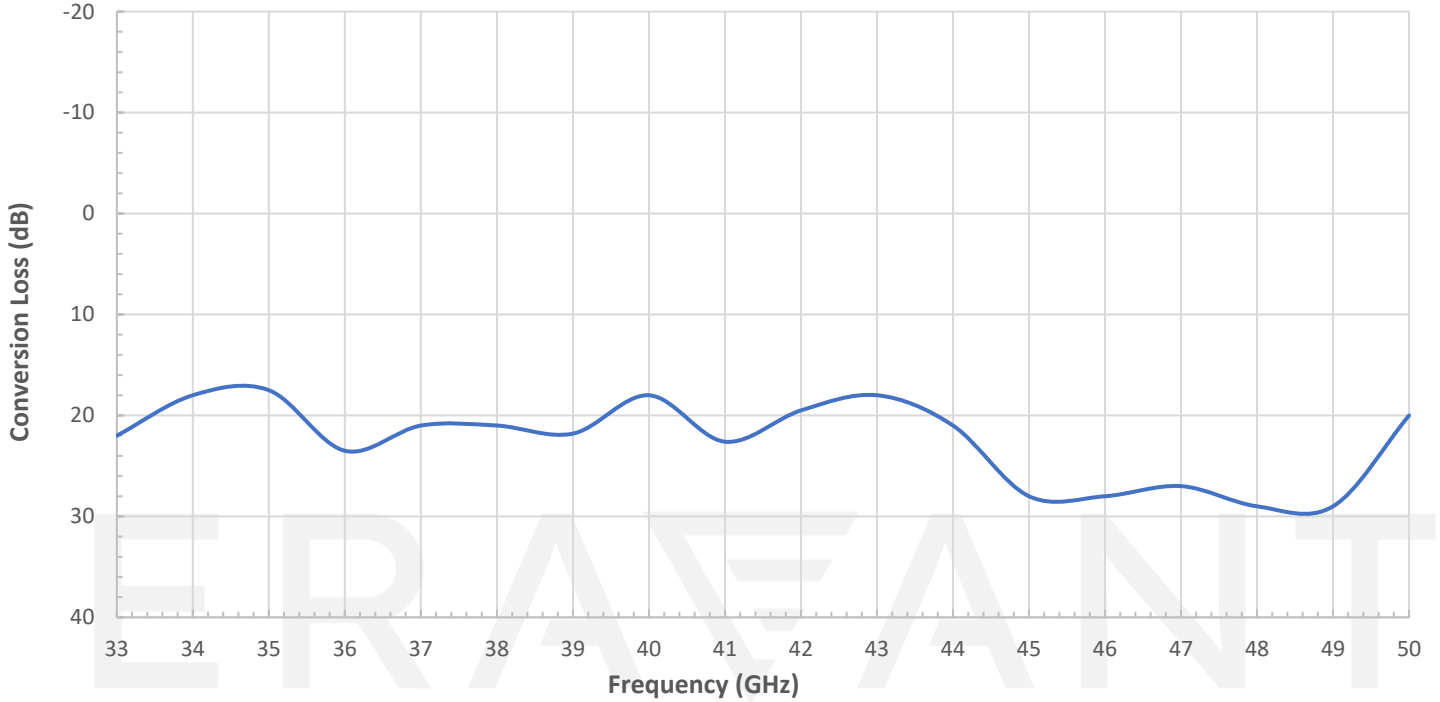
- Keysight Spectrum Analyzers
- Frequency Meters
- Phase Locked Loops

SUPPLEMENTAL DETAILS

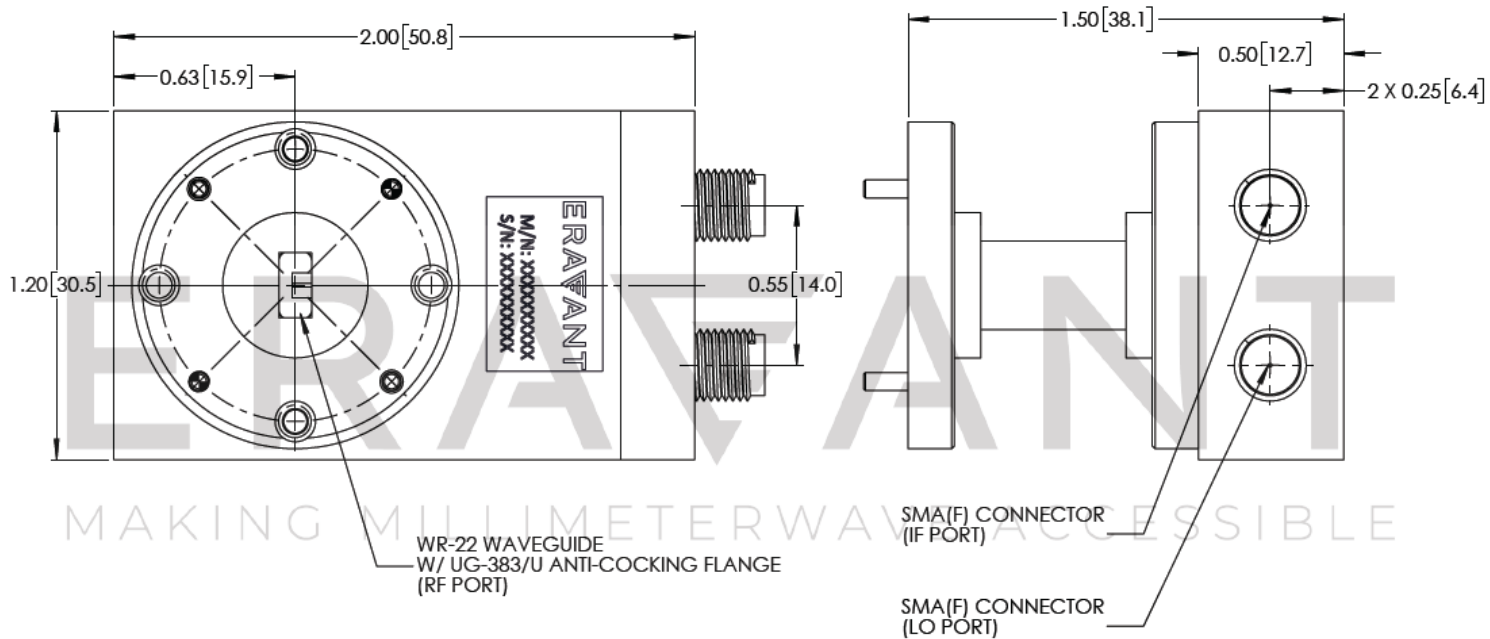


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Typical Conversion Loss vs Frequency



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



NOTE:

- 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.
- The harmonic mixer is for small signal detection. The recommended the RF power range is -10 dBm or below.
- The harmonic mixer work in any even harmonics of LO to yield the IF frequency in the range of DC to 1.6 GHz with different conversion loss.
- Eravant reserves the right to change the information presented without notice.

CAUTION:

- Exceeding absolute maximum ratings of the mixer will damage the device.
- Any foreign objects in the waveguide will cause performance degradation and may damage or destroy the unit.
- 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
- 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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