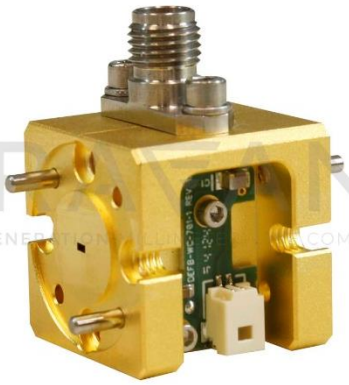
SFS-04-EB

WR-04 Band Biased Subharmonically Pumped Mixer, 170 to 260 GHz



SFS-04-EB is a WR-04 biased subharmonically 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 170 to 260 GHz. With an LO frequency range of 85 to 130 GHz, this mixer is well suited for low-cost WR-04 band system solutions due to local oscillator frequency requirement. The mixer provides 15 dB conversion loss, 20 dB 2LO to RF isolation, and 30 dB LO to IF isolation typically. The subharmonically pumped mixers in other frequency bands are offered under various model numbers.

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency	170 GHz		260 GHz
LO Frequency	85 GHz		130 GHz
IF Frequency	DC		5.0 GHz
LO Pumping Power	0 dBm	+3 dBm	
Conversion Loss		15 dB	
LO to IF Isolation		30 dB	
2LO to RF Isolation		20 dB	
Combined RF and LO Power			+7 dBm
Bias		+5VDC/1mA	
Specification Temperature		+25°C	
Operating Temperature	+0°C		+50°C

Mechanical Specifications:

Item	Specification
RF Port	WR-04 Waveguide with UG-387/U-M Anti-Cocking Flange
LO Port	WR-08 Waveguide with UG-387/U-M Anti-Cocking Flange
IF Port	SMA (F)
Bias	Molex Connector: 2035580207
Case Material	Aluminum
Finish	Gold Plated
Size	0.75” (W) x 0.75” (L) x 0.75” (H)
Outline	FS-EF04-A

ECCN

EAR99

FEATURES

- Low LO Power Requirement
- Subharmonic Mixing
- Compact Package
- Built-in Voltage Regulator

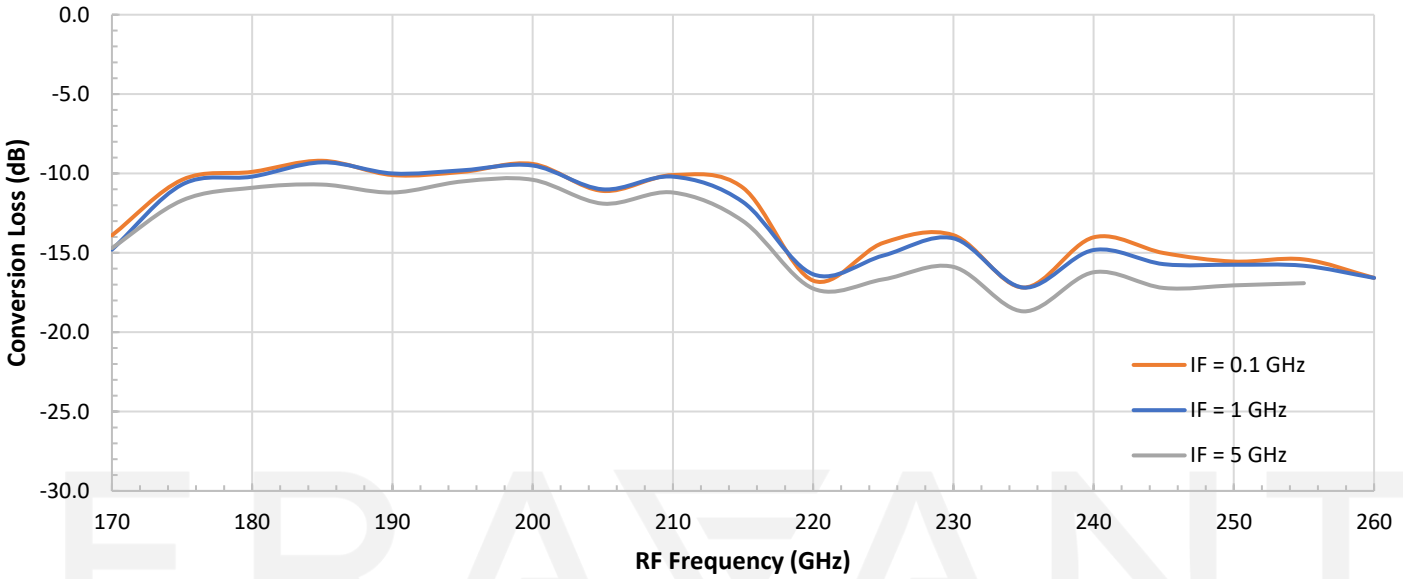
APPLICATIONS

- Frequency Converters
- Transmit and Receive Modules
- Test Equipment

SUPPLEMENTAL DETAILS

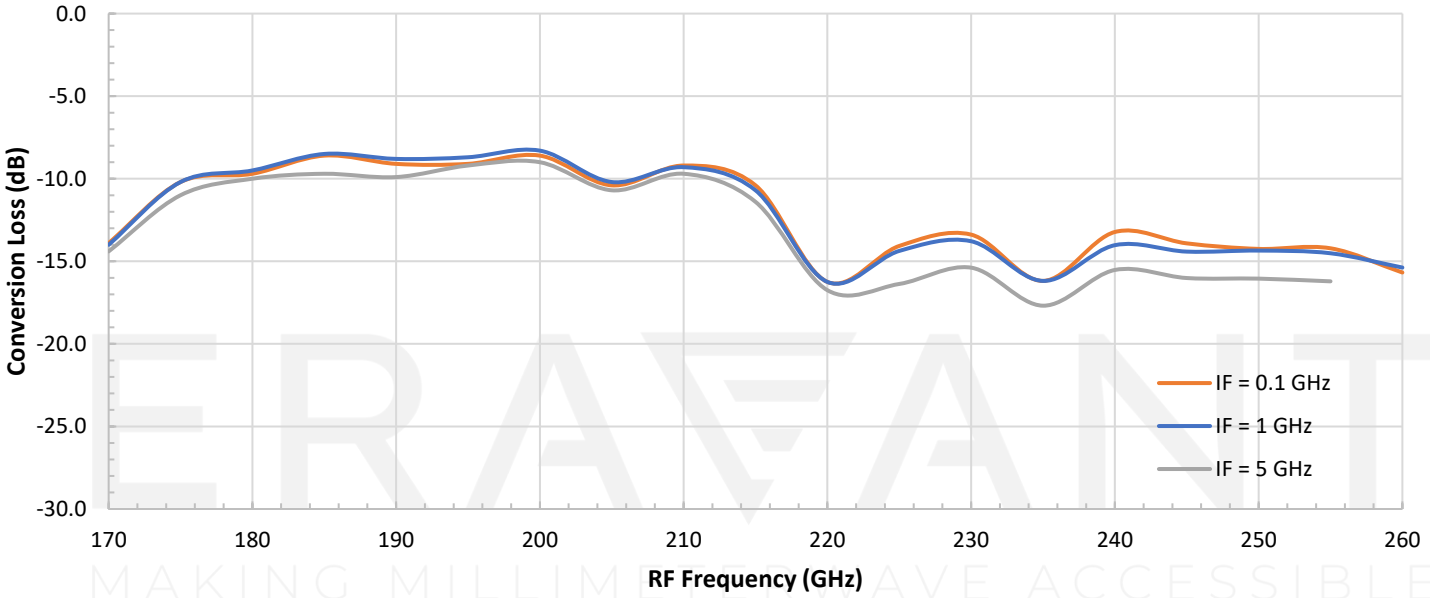
Conversion Loss vs. RF Frequency

Bias: +5V/1mA, LO: 0 dBm



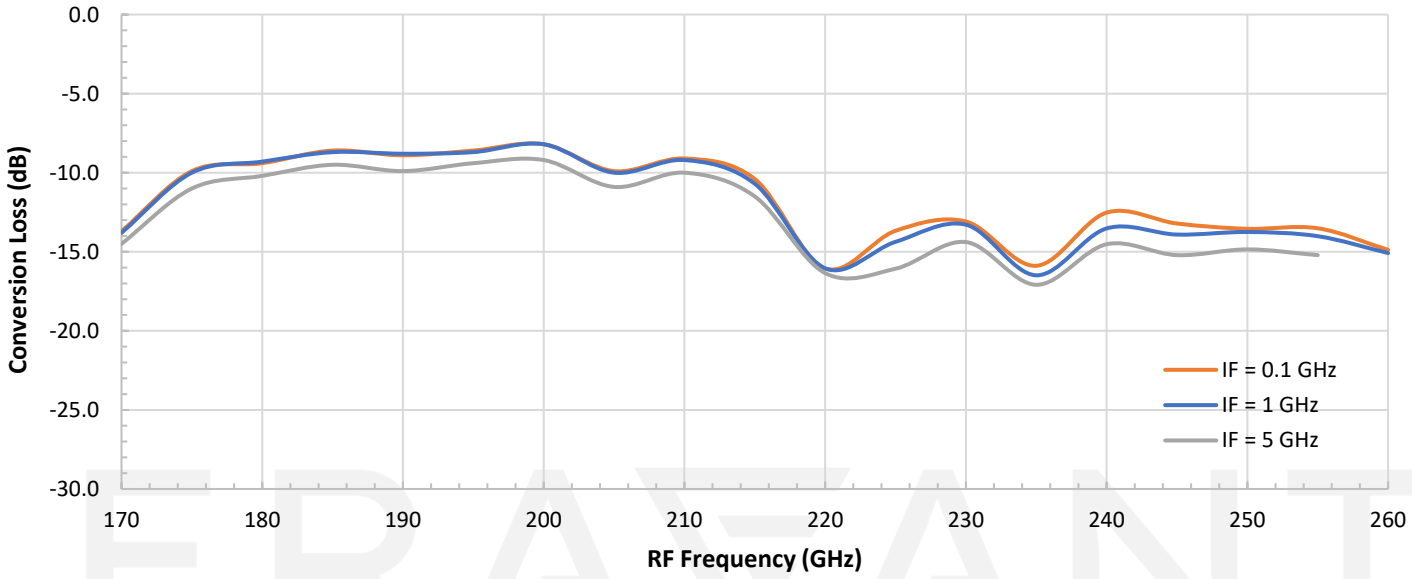
Conversion Loss vs. RF Frequency

Bias: +5V/1mA, LO: +3 dBm

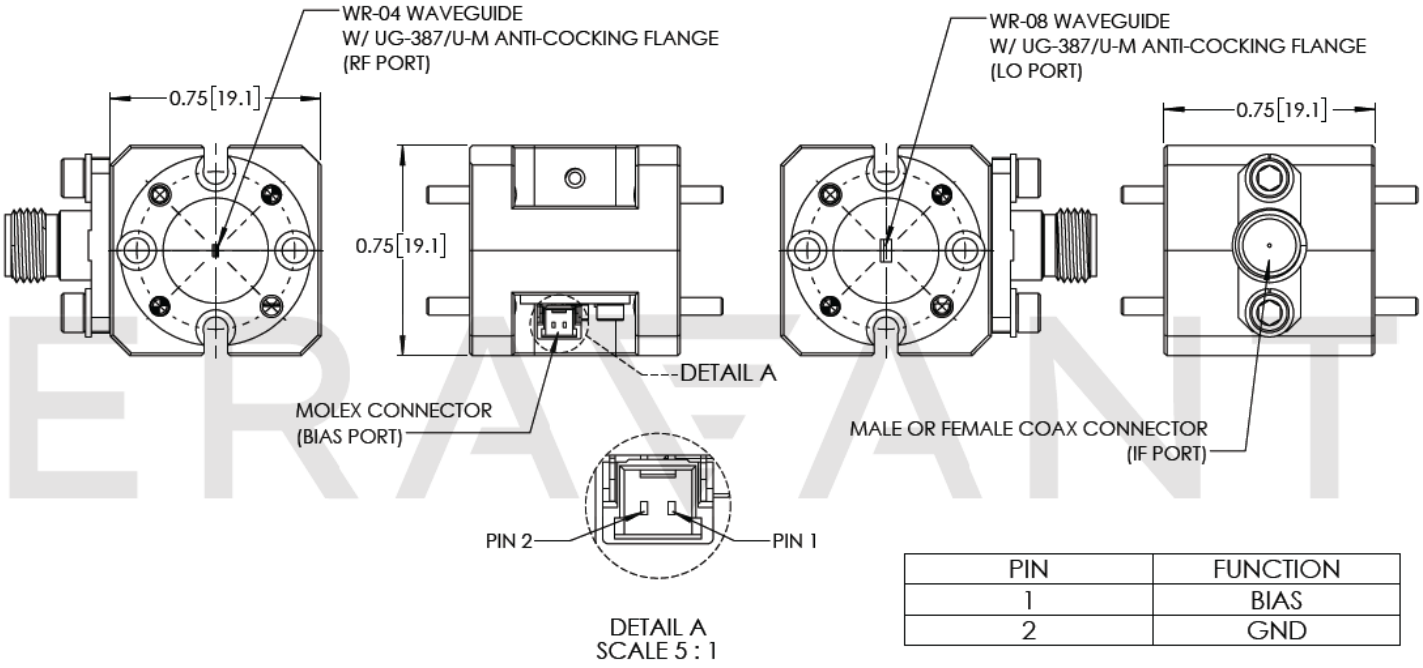


Conversion Loss vs. RF Frequency

Bias: +5V/1mA, LO: +5 dBm



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



PIN	FUNCTION
1	BIAS
2	GND

NOTE:

- On condition that test data is provided it 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**.
- If a waveguide is present, any foreign objects in the waveguide will cause performance degradation and may damage or destroy the unit.
- 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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