

F-Band Balanced Mixer

SFB-08-NB is an F-Band balanced mixer that utilizes high performance GaAs Schottky beam-lead diodes and a balanced circuit configuration to offer superior RF performance. The mixer supports the full waveguide band operation for both LO and RF frequencies from 90 to 140 GHz with an extremely broad IF output from DC to 40 GHz. The mixer offers a conversion loss of 13 dB typical and an LO to RF port isolation of 22 dB nominally. The typical input P-1dB is -3 dBm.



Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency Range	90 GHz		140 GHz
LO Frequency Range	90 GHz		140 GHz
IF Frequency Range	DC		40 GHz
LO Pumping Power	+8 dBm	+10 dBm	+13 dBm
Conversion Loss		13 dB	
Input P-1dB		-3 dBm	
LO to RF Isolation		22 dB	
Combined RF and LO Power			+16 dBm
Specification Temperature		+25 °C	
Operating Temperature	0 °C		+50 °C

Mechanical Specifications:

Item	Specification
RF Port	WR-08 Waveguide with UG-387/U-M Anti-Cocking Flange
LO Port	WR-08 Waveguide with UG-387/U-M Anti-Cocking Flange
IF Port	2.92 mm (F)
Case Material	Aluminum
Finish	Gold Plated
Weight	0.8 Oz
Outline	FB-NF-A-2

ECCN

EAR99

FEATURES

- Full Waveguide Band Coverage
- Low Conversion Loss
- High IF Frequency up to 40 GHz

APPLICATIONS

- Radar Systems
- Communication Systems
- Test Equipment

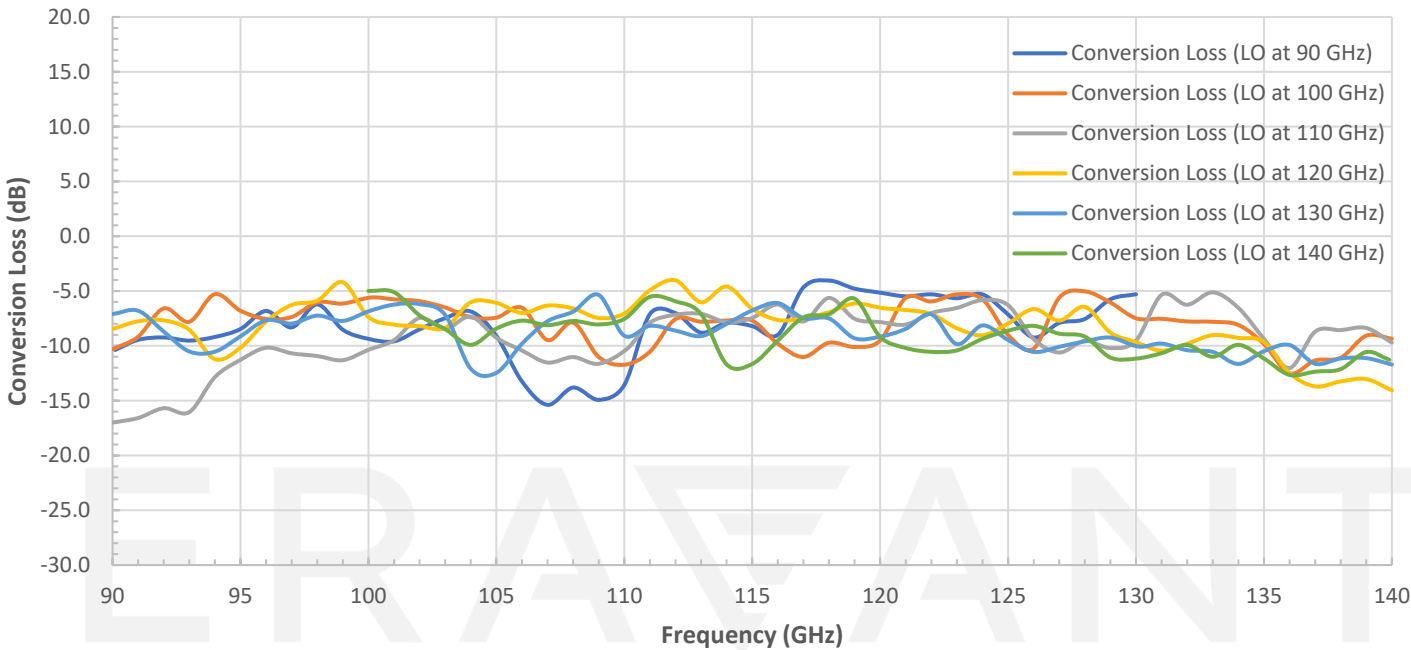
SUPPLEMENTAL DETAILS



SFB-08-NB

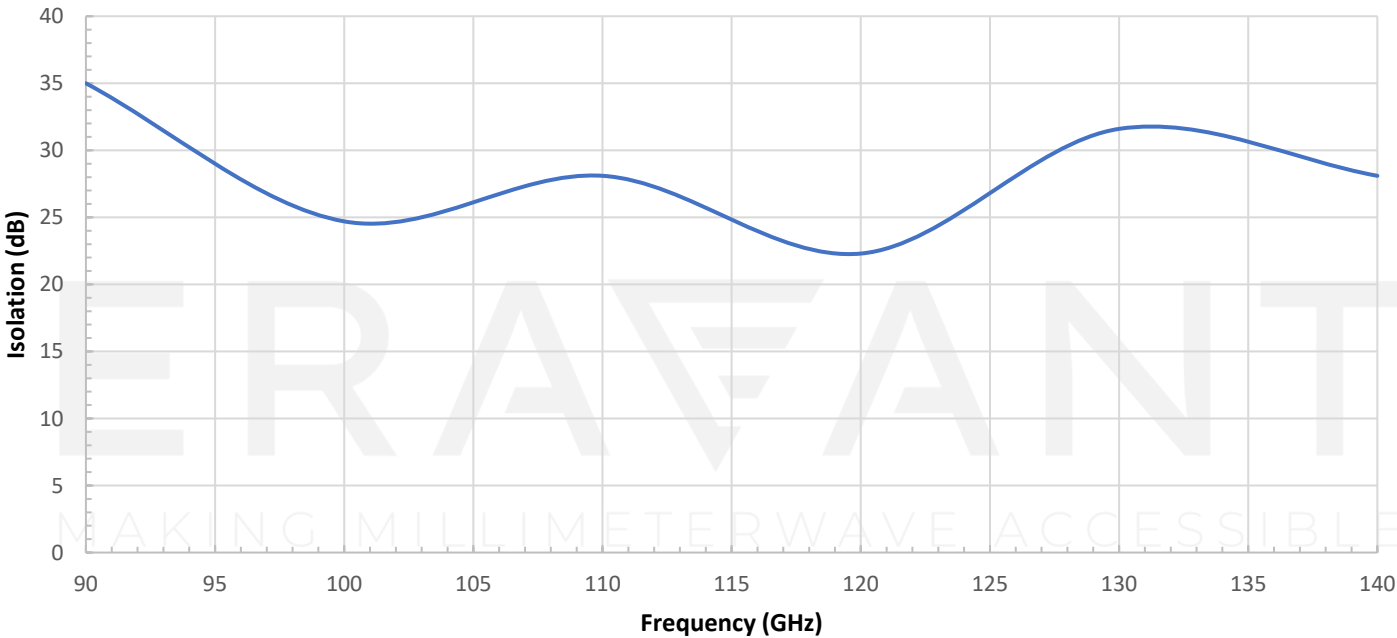
Typical Conversion Loss vs. Frequency

RF: -20 dBm; LO: +13 dBm



Typical LO to RF Isolation

LO: +13 dBm



2 x WR-08 WAVEGUIDE
W/ UG-387/U-M ANTI-COCKING FLANGE

0.75 [19.1]

0.75 [19.1]

ERA VANT

M/N: 10000000000000000000
S/N: 10000000000000000000

0.75 [19.1]

0.75 [19.1]

MALE OR FEMALE COAX CONNECTOR
(IF PORT)

LO RF

- 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 base band mixer which input port is DC Coupled.
- Eravant reserves the right to change the information presented without notice.

- Exceeding absolute maximum ratings shown will damage the device.
- The device is static sensitive. Always follow ESD rules when working with the device.
- Eravant recommends the use of ESD wrist and ankle straps, grounded ESD dissipative surfaces, and air ionizers when handling 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 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.