SFB-14419413-0505KF-NB

G-Band Balanced Mixer

SFB-14419413-0505KF-NB is a G-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 operation for LO frequencies from 140 to 170 GHz and RF frequencies from 140 to 210 GHz with an extremely broad IF output from DC to 40 GHz. The mixer offers a conversion loss of 13 dB typical and a high LO to RF port isolation of 25 dB nominally. The typical input P-1dB is -3 dBm.

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency	140 GHz		210 GHz
LO Frequency	140 GHz		170 GHz
IF Frequency	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		25 dB	
Combined Damage RF and LO Power			+16 dBm
Specification Temperature		+25°C	
Operating Temperature	0°C		+50°C

Mechanical Specifications:

Item	Specification
RF Port	WR-05 Waveguide with UG-387/U-M Anti-Cocking Flange
LO Port	WR-05 Waveguide with UG-387/U-M Anti-Cocking Flange
IF Port	K (F)
Case Material	Aluminum
Finish	Gold Plated
Weight	0.8 Oz
Outline	FB-NG-A-2

ECCN

EAR99

FEATURES

- Compact Size
- Low Conversion Loss
- IF Frequency up to 40 GHz

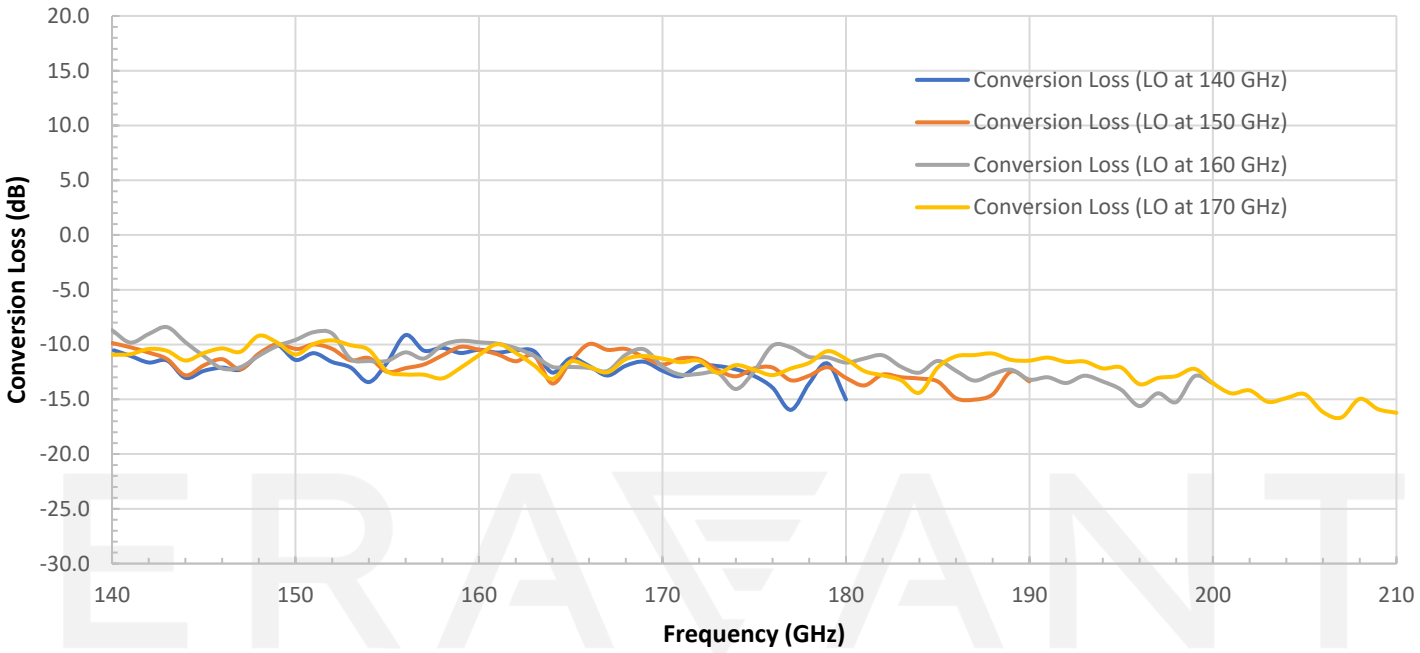
APPLICATIONS

- IEEE 802.11.ad WiGig Systems
- Radar Systems
- Communication Systems
- Test Equipment

SUPPLEMENTAL DETAILS

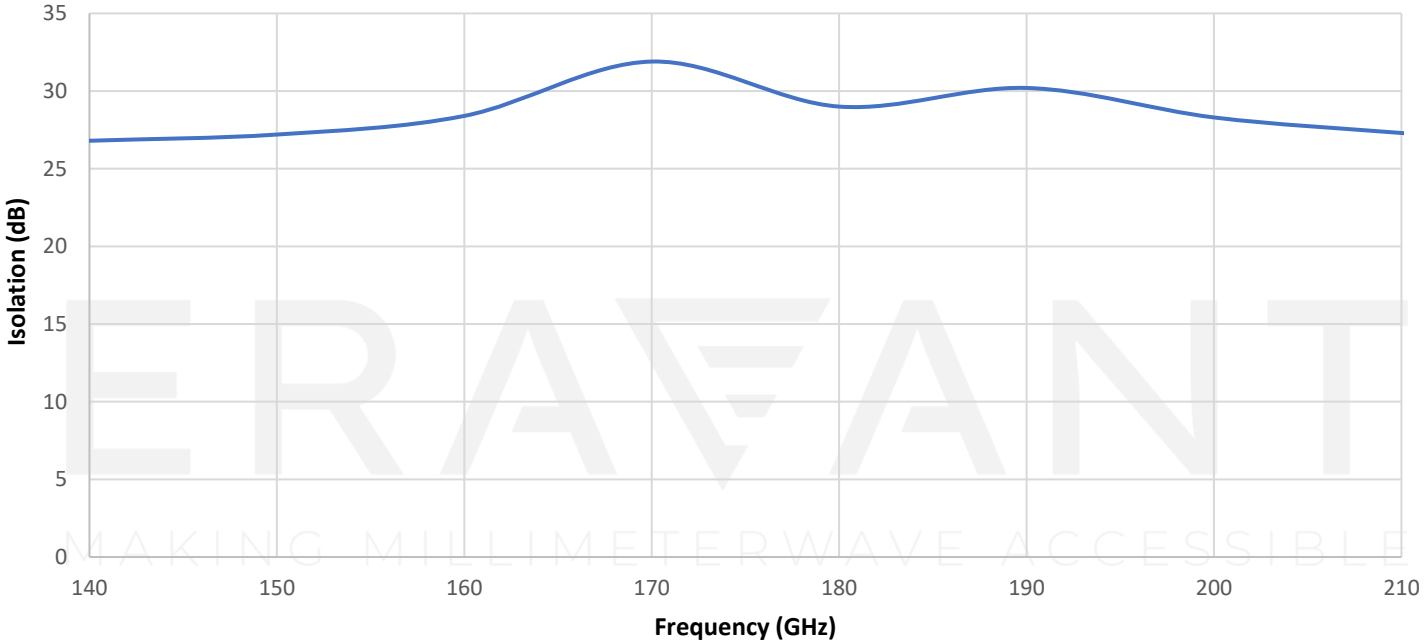
Typical Conversion Loss vs. Frequency

RF: -20 dBm; LO: +13 dBm

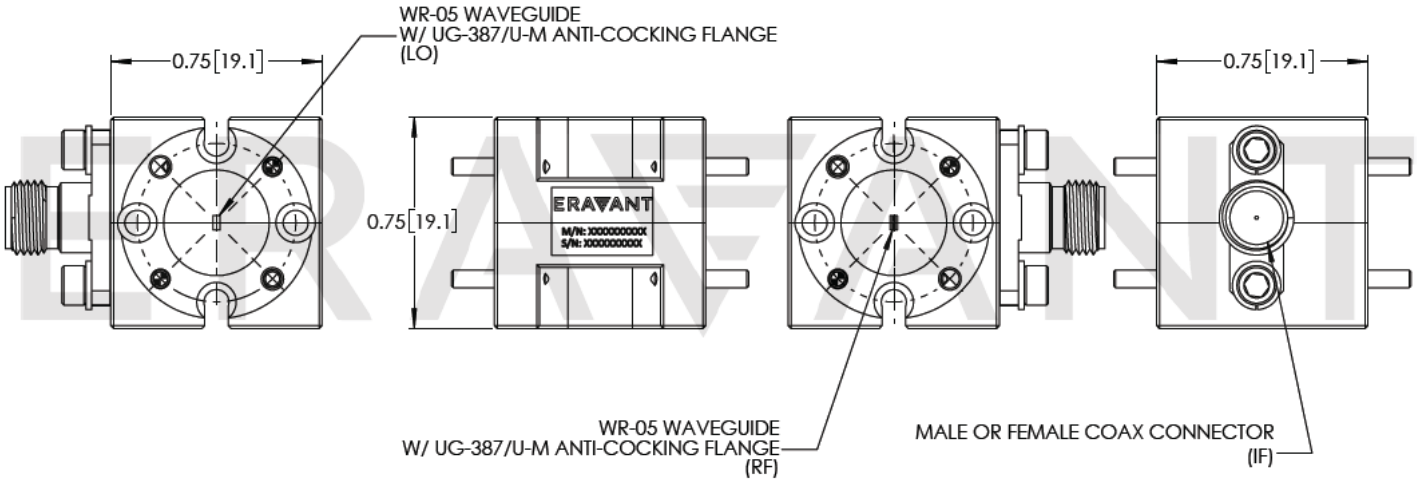


Typical LO to RF Isolation vs Frequency

LO: +13 dBm



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



NOTE:

- A DC block at IF port may be required when connecting to a device, such as an IF low noise amplifier or a base band mixer which input port is DC coupled.
- When sufficient LO power is available, always use non-biased mixers to get optimum conversion loss and LO to RF isolation. Externally biased mixers should be used only if +13 dBm LO power is not available.
- 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.
- 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.
- Proper torque, 8.0 ± 0.15 inch-pounds (0.90 ± 0.02 Nm), should be applied. Eravant torque wrench model SCH-08008-S1 is highly recommended.