SFB-10-N3-WPC

W-Band Balanced Mixer, High Port Isolation

SFB-10-N3-WPC is a W-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 75 to 110 GHz with an extremely broad IF output from DC to 35 GHz. The mixer offers a conversion loss of 8 dB typical and a high RF to LO port isolation of 30 dB.

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency	75 GHz		110 GHz
LO Frequency	75 GHz		110 GHz
IF Frequency	DC		35 GHz
LO Pumping Power	+12 dBm	+13 dBm	+15 dBm
Conversion Loss (IF < 20 GHz		7.5 dB	
Conversion Loss (IF = DC to 35 GHz)		8.0 dB	
RF Input Power		-3 dBm	
LO to RF Isolation		30 dB	
LO to IF Isolation		25 dB	
Combined RF and LO Power			+18 dBm
Specification Temperature		+25°C	
Operating Temperature	-40°C		+85°C

Mechanical Specifications:

Item	Specification
RF Port	WR-10 Waveguide with UG-387/U-M Flange
LO Port	WR-10 Waveguide with UG-387/U-M Flange
IF Port	K (F)
Case Material	Aluminum
Finish	Gold Plated
Weight	0.8 Oz
Outline	FB-NW-3

ECCN

EAR99

FEATURES

- Full Waveguide Band Coverage
- Extremely Low Conversion Loss
- High IF Frequency up to 35 GHz
- Compact Package

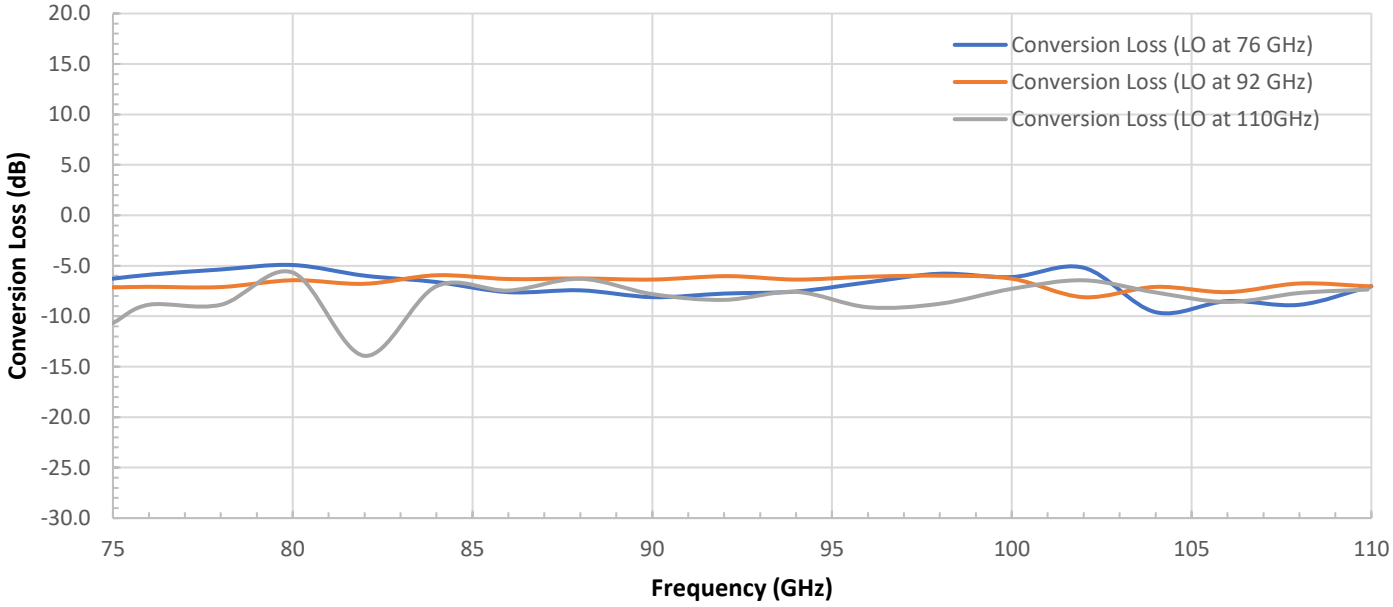
APPLICATIONS

- Radar Systems
- Communication Systems
- Test Equipment

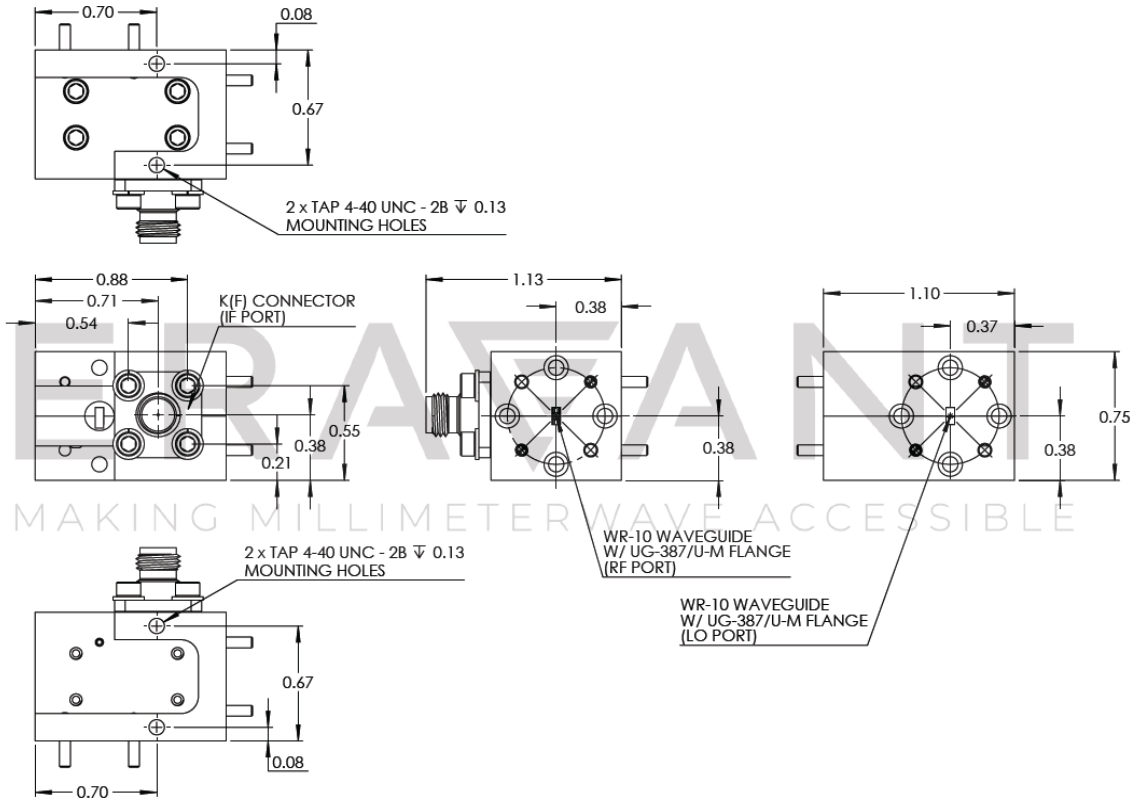
SUPPLEMENTAL DETAILS

Conversion Loss vs. Frequency

RF: -20 dBm; LO: +13 dBm



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



NOTE:

- All data presented is collected from a sample lot. Actual data may vary slightly from unit to unit. All testing is performed under +25 °C room temperature.
- 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, in which the input port is DC coupled.
- Eravant reserves the right to change the information presented without notice.

CAUTION:

- Exceeding absolute maximum rating 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.**
- **Never apply an external bias voltage to the IF port. This will damage the mixer.**
- 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.

ERAVANT
MAKING MILLIMETERWAVE ACCESSIBLE