SFU-06-N9

D-Band Balanced Up-Converter

SFU-06-N9 is a D-Band balanced up converter 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 110 to 170 GHz with an extremely broad IF output from DC to 40 GHz. The mixer offers a conversion loss of 13 dB typical and a RF to LO port isolation of 22 dB nominally. The typical input P-1dB is -3 dBm.

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Frequency Range	110 GHz		170 GHz
LO Frequency Range	110 GHz		170 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			+15 dBm
Specification Temperature		+25 °C	
Operating Temperature	0 °C		+50 °C

Mechanical Specifications:

Item	Specification
RF Port	WR-06 Waveguide with UG-387/U-M Anti-Cocking Flange
LO Port	WR-06 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-ND-A-2

ECCN

EAR99

FEATURES

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

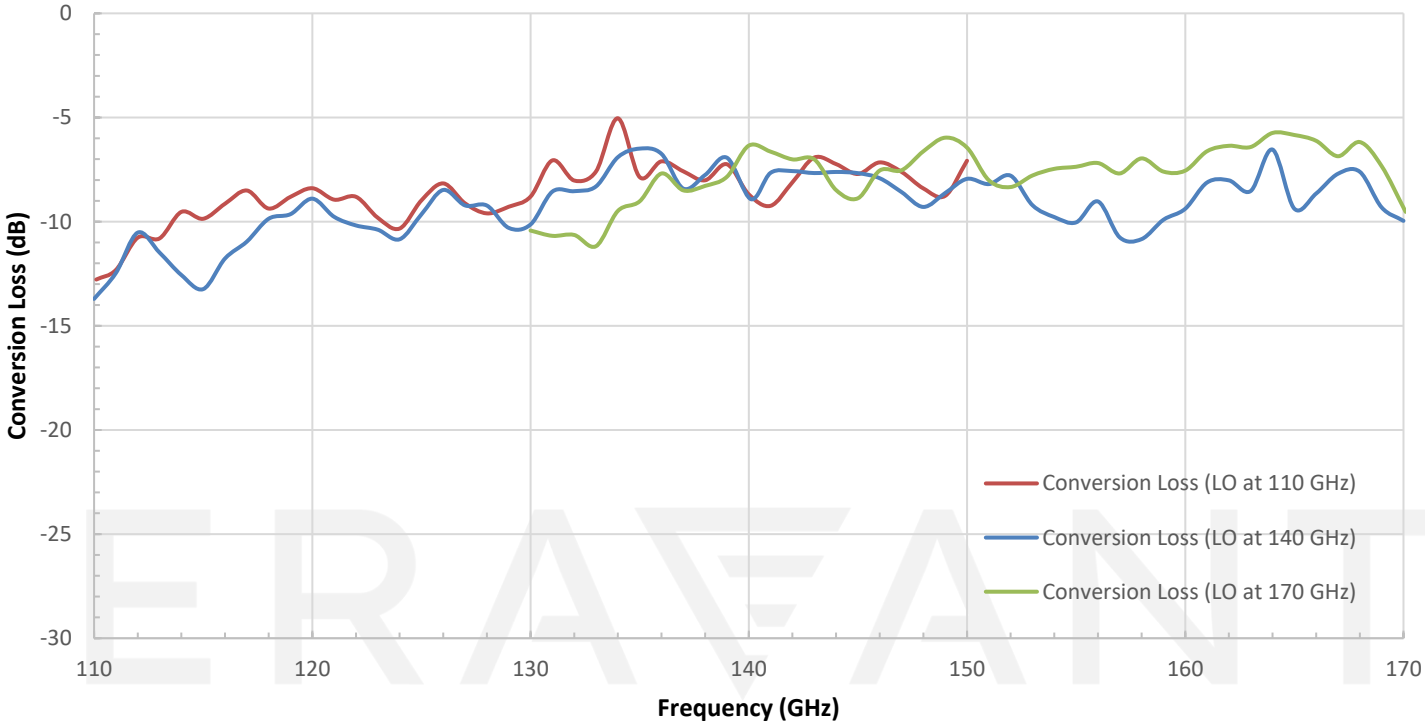
APPLICATIONS

- Radar Systems
- Communication Systems
- Test Equipment

SUPPLEMENTAL DETAILS

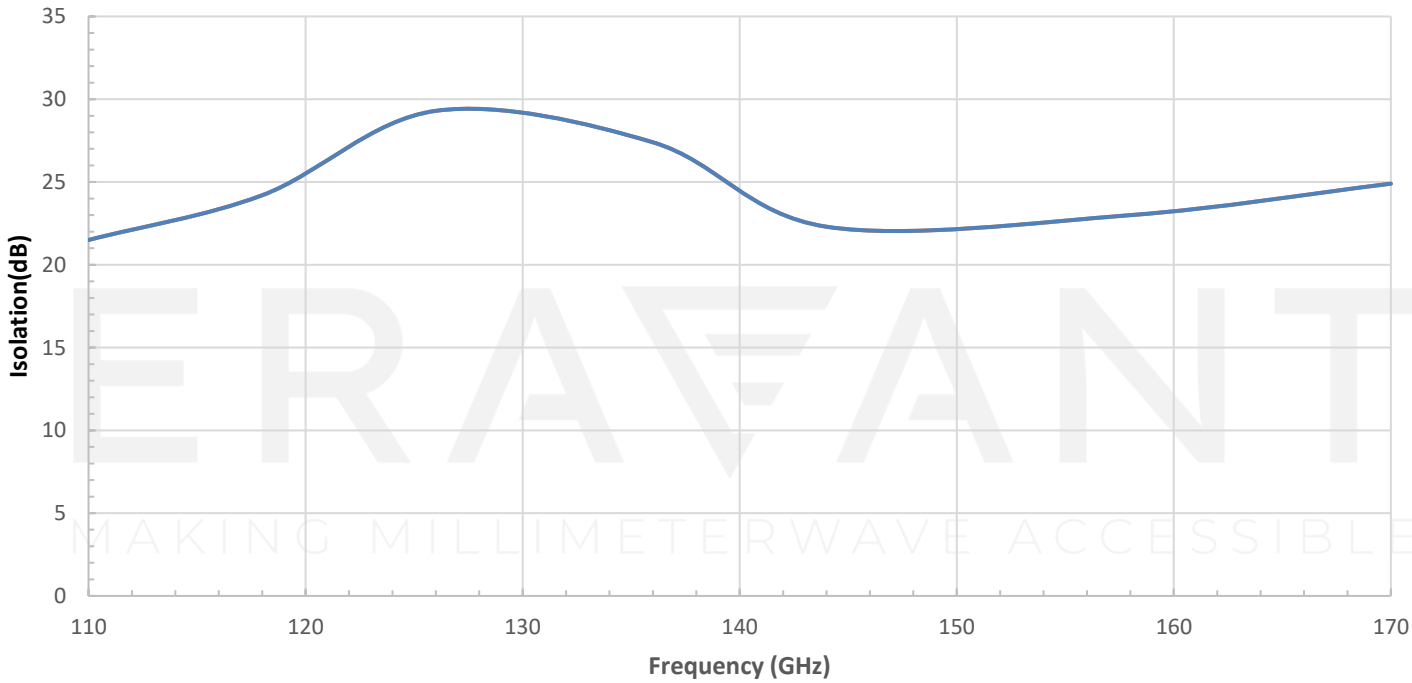
Typical Conversion Loss vs. Frequency

RF: -20 dBm; LO: +10 dBm

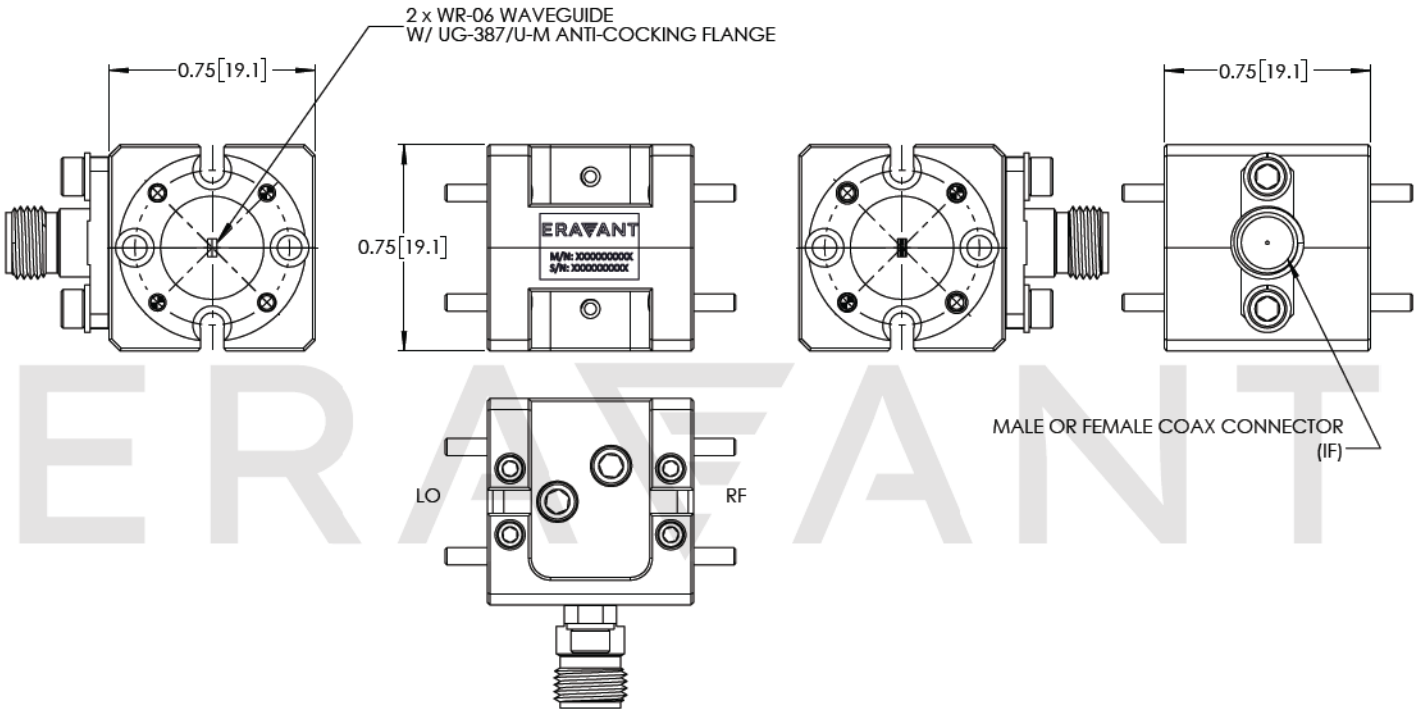


Typical RF to LO Isolation (dB)

LO: +10 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 unit to unit slightly.
- All testing was performed under +25 °C case 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.**
- **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.