SSR-7930330020-12-S1

Rev 1.1

E-Band Receiver, 76 to 81 GHz, 20 dB Gain

Description:

Model SSR-7930330020-12-S1 is an E-Band receiver. The receiver has a typical conversion gain of 20 dB with a typical RF input power of -40 dBm in the frequency range of 76 to 81 GHz and a IF output frequency range of 1 to 6 GHz. The required LO power and frequency range are +7 dBm and 12.5 GHz . The LO and IF port are both equipped with female SMA connectors and the RF port is a WR-12 waveguide with a UG-387/U flange.

Features:

- Compact Size
- Fully Integrated Module

Applications:

- Radar Systems
- Communication Systems
- Passive Camera Systems

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
RF Input Frequency	76 GHz		81 GHz
RF Input Power		-40 dBm	
Damage RF Power		-5 dBm	
IF Output Frequency	1 GHz		6 GHz
RF to IF Conversion Gain		20 dB	
RF Port Return Loss		7 dB	
LO Frequency		12.5 GHz	
LO Input Power		+7 dBm	+12 dBm
DC Bias Voltage	+8 V_{DC}	+12 V_{DC}	+15 V_{DC}
DC Bias Current		300 mA	
Specification Temperature		+ 25 °C	
Operating Temperature	0 °C		+ 50 °C

Mechanical Specifications:

Item	Specification
RF Port	WR-12 Waveguide with UG-387/U Flange
IF Port	SMA(F)
LO Port	SMA(F)
Bias	Solder Pin
Housing Material	Aluminum
Finishing	Gold Plated
Weight	2.5 Oz
Size	0.50” (W) X 1.80” (L) X 1.10” (H)
Outline	SR-SE

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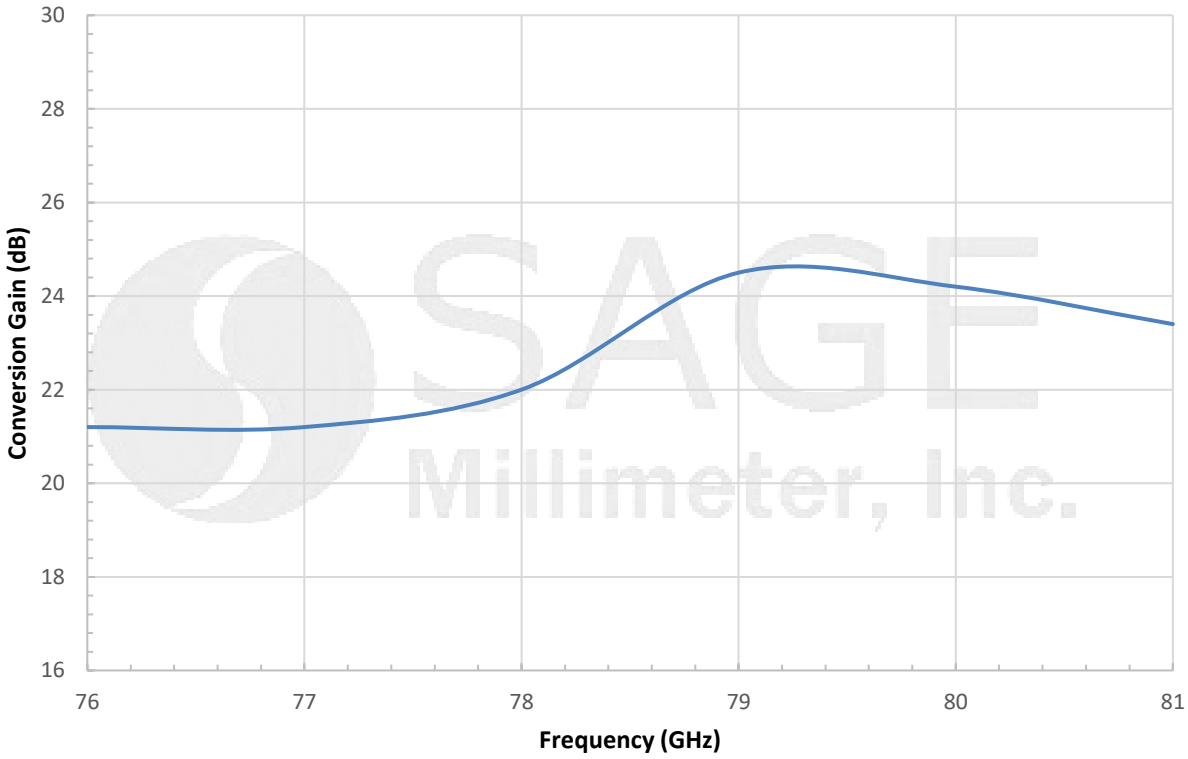
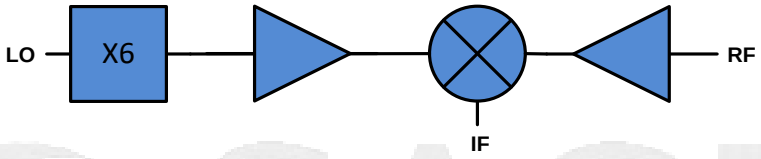
Conversion Gain vs. Frequency

Bias: +12 V_{DC}/300 mA



Block Diagram:



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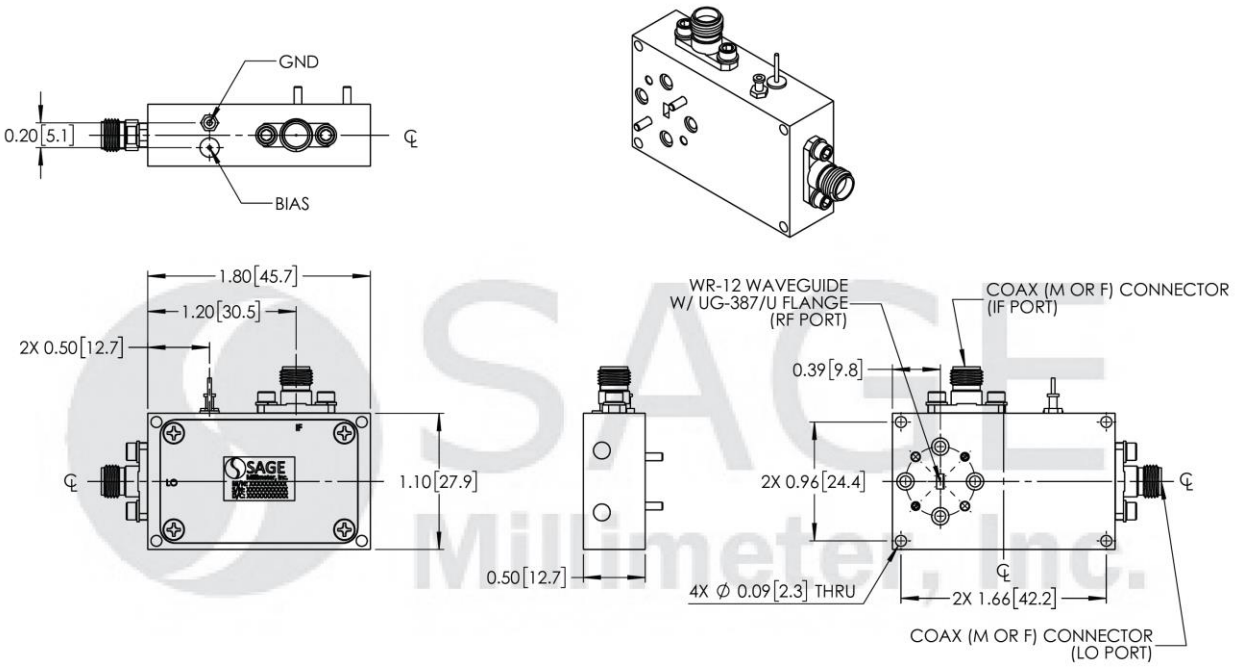
Mechanical Outline: (Unless otherwise specified, all dimensions are in inches [millimeters])



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.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.
- Other mechanical configurations are available under different model numbers.

Caution:

- Exceeding absolute maximum ratings shown will damage the device.
- The device is static sensitive. Always follow ESD rules when working with the device.
- Any foreign objects into the waveguide will cause performance degradation and possible device damage.
- Proper torque, 8.0 ± 0.4 inch-pounds (0.90 ± 0.02 Nm), should be applied. **SAGE Millimeter torque wrench, model SCH-08008-S1, is highly recommended.**
- The case temperature of the device shall never exceed +50 ˚C. Use proper Heatsink or fan if necessary.

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