



Q-Band, X4 Active Frequency Multiplier, 33 to 50 GHz, +20 dBm

Description:

Model SFA-224SF-S1 is an active X4 frequency multiplier. The multiplier has an input frequency of 8.25 to 12.50 GHz with a typical input power of +5 dBm and an output frequency of 33 to 50 GHz with a typical output power of +20 dBm. The multiplier also has a typical harmonic suppression of -15 dBc. The DC power requirement for the multiplier is +8 V_{DC}/600 mA. The input port configuration is a SMA connector and the output is a WR-22 waveguide with a UG-383/U flange. Other port configurations are available under different model numbers.



Features:

- Low Harmonic Emission
- High Output Power
- Low Harmonic Components

Applications:

- Frequency Extenders
- Source Module
- Communication Systems

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Input Frequency	8.25 GHz		12.50 GHz
Input Power		+5 dBm	+10 dBm
Output Frequency	33 GHz		50 GHz
Output Power		+20 dBm	
Harmonic Suppression		-15 dBc	
Spurious		-60 dBc	
Port Return Loss		10 dB	
DC Voltage	+6 V _{DC}	+8 V _{DC}	+15 V _{DC}
DC Supply Current		600 mA	
Specification Temperature		+25°C	
Operating Temperature	0°C		+50°C

Mechanical Specifications:

Item	Specification
Input	SMA (F)
Output	WR-22 Waveguide with UG-383/U Flange
Bias	Solder Pin
Case Material	Aluminum
Finish	Gold Plated
Weight	1.6 Oz
Size	1.20" (W) X 2.00" (L) X 0.50" (H)
Outline	FA-SQ-1-A



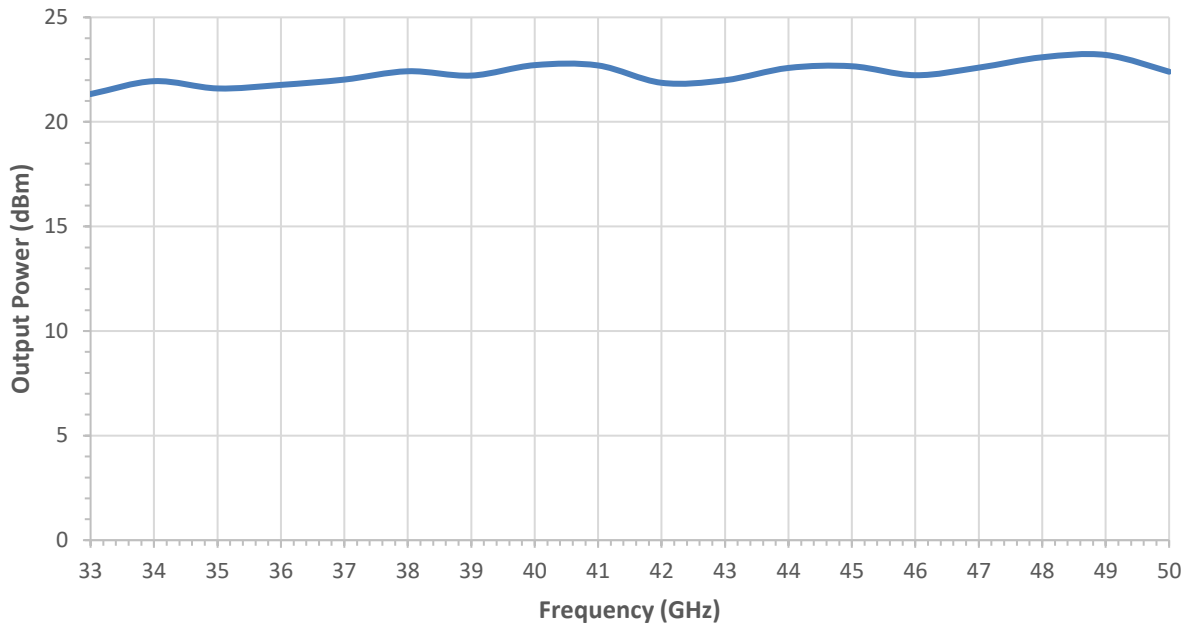


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Output Power vs. Frequency

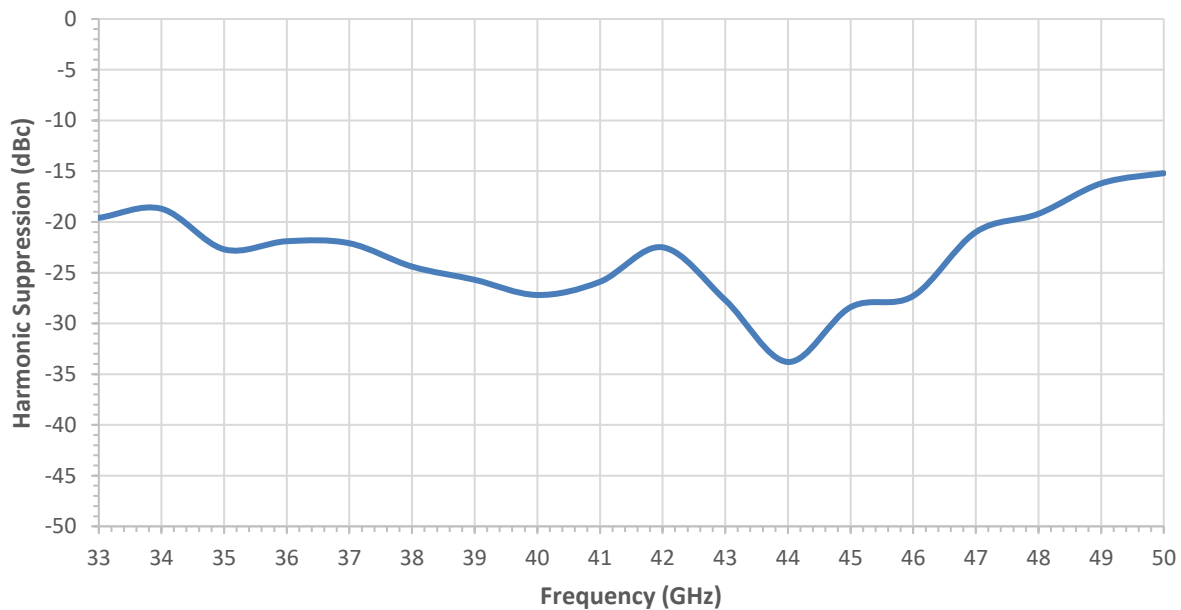
Bias: +8V_{DC}/607 mA; Input Power = +5 dBm

RFsat:+8 Vdc/890 mA



Harmonic Suppression vs. Frequency

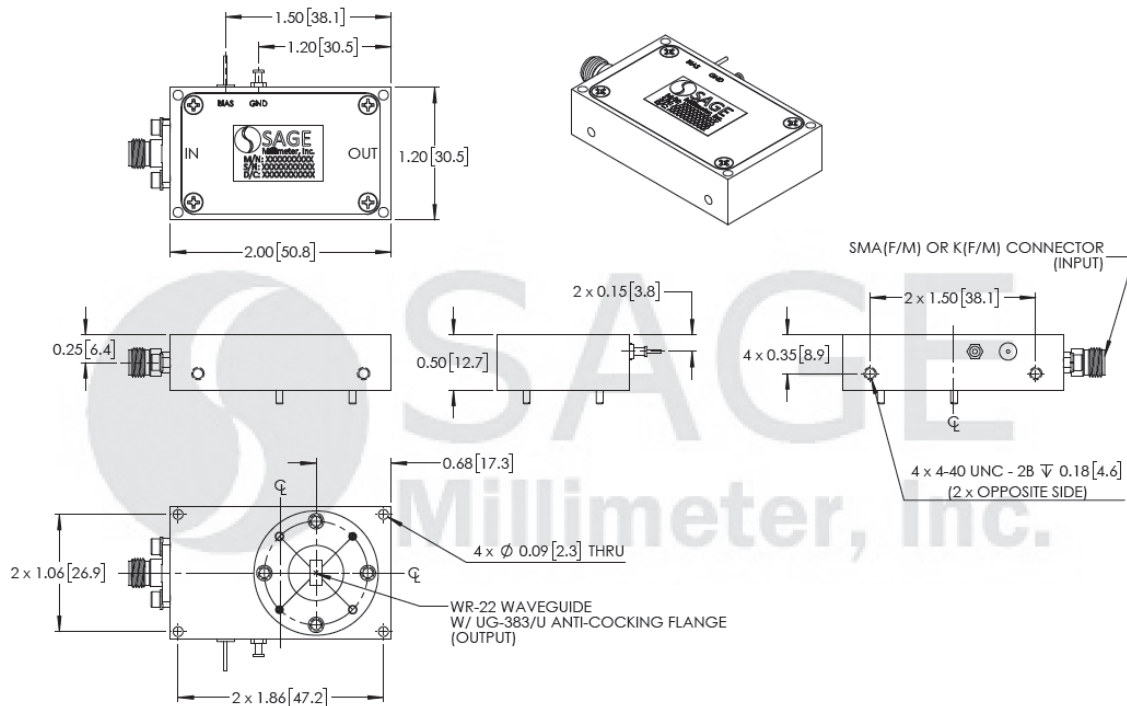
Bias: +8V_{DC}/607 mA; Input Power = +5 dBm





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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.
- 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.
- The case temperature of the device shall never exceed +50 °C. Use proper heatsink or fan if necessary.
- Any foreign objects in the waveguide will cause performance degradation and may damage the device.
- Proper torque, 8.0 ± 0.15 inch-pounds (0.90 ± 0.02 Nm), should be applied. **SAGE Millimeter torque wrench, model SCH-08008-S1, is highly recommended.**

