

WR-12 Waveguide Low Noise Figure Amplifier at 4.7 dB from 60 GHz to 90 GHz Frequency in E band with 30 dB Gain, Using UG-387/U Flanges

The FMWGA3205 is a WR-12 Waveguide Low Noise Amplifier, operating across the E Band from 60 GHz to 90 GHz. This 50 Ohm design exhibits impressive typical performance which includes 30 dB gain, 4.2 dB noise figure, and +18 dBm P1dB. Maximum RF input power (CW) is +5 dBm, and DC bias is +6 Vdc at 325 mA typ. The rugged and small size aluminum package design is gold plated and supports a UG-387/U waveguide flange pattern at RF input and output ports. Solder pins are used for DC bias voltage and ground. The module operates across a wide temperature range from -40°C to +80°C.



Electrical Specifications

Description	Min	Typ	Max	Units
Frequency	60		90	GHz
Small Signal Gain		30		dB
P1 dB		18		dBm
Psat		22		dBm
Noise Figure		4.2	4.7	dB
VSWR		1.9:1		
RF Input Power			5	dBm
Operating DC Voltage ^{1,4}	6	6	12	Volts
Operating DC Current		320		mA
Input Power (CW)			5	dBm
Operating Temperature Range	-40		80	°C

Biasing Up and Down Procedure

Electrical Specification Notes:

- 1.) DC Supply must be able to source at least 0.55A DC at startup
- 2.) Open and short-circuit loads are not recommended at the amplifier output.
- 3.) Ensure proper 50 Ohm load before turning the amplifier "ON".
- 4.) Reverse biasing will destroy the amplifier
- 5.) Do not put any foreign objects inside the waveguide. Warranty Void.

Absolute Maximum Rating

Parameter	Rating
Operating Temperature	-40°C to +80°C
Storage Temperature	-40°C to +100°C
Total Power Dissipation	4.5W
Input Power (CW)	+5dBm
DC Operating Voltage	+12Vdc

Mechanical Specifications

Size	
Length	1.5 in [38.1 mm]
Width	1.5 in [38.1 mm]
Height	0.937 in [23.8 mm]
Weight	0.2 lbs [90.72 g]
Body Material and Plating	Aluminum, Gold

Features:

- WR-12 Waveguide Low Noise Amplifier
- UG-387/U Flange
- 60 GHz to 90 GHz
- E Band
- Small Signal Gain 30 dB typ
- Noise Figure 4.2 dB typ
- VSWR 1.9:1 typ
- Output P1dB +18 dBm typ
- Output Psat +22 dBm typ
- DC Bias +6V @ 325 mA typ
- Max RF Input Power (CW) +5 dBm
- 50 Ohm Design
- RF Input and Output Waveguide Flange UG-387/U
- Solder Pins for DC Bias Voltage and Ground
- Operational Temperature Range -40°C to +80°C
- Rugged and Compact Aluminum Gold Plated Package Design

Applications:

- Test & Measurement
- Military & Commercial Communications
- Military Electronic Systems
- Research & Development

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Configuration

Design Waveguide Low Noise
DC Bias Connector
Flange UG-387/U

Environmental Specifications

Temperature

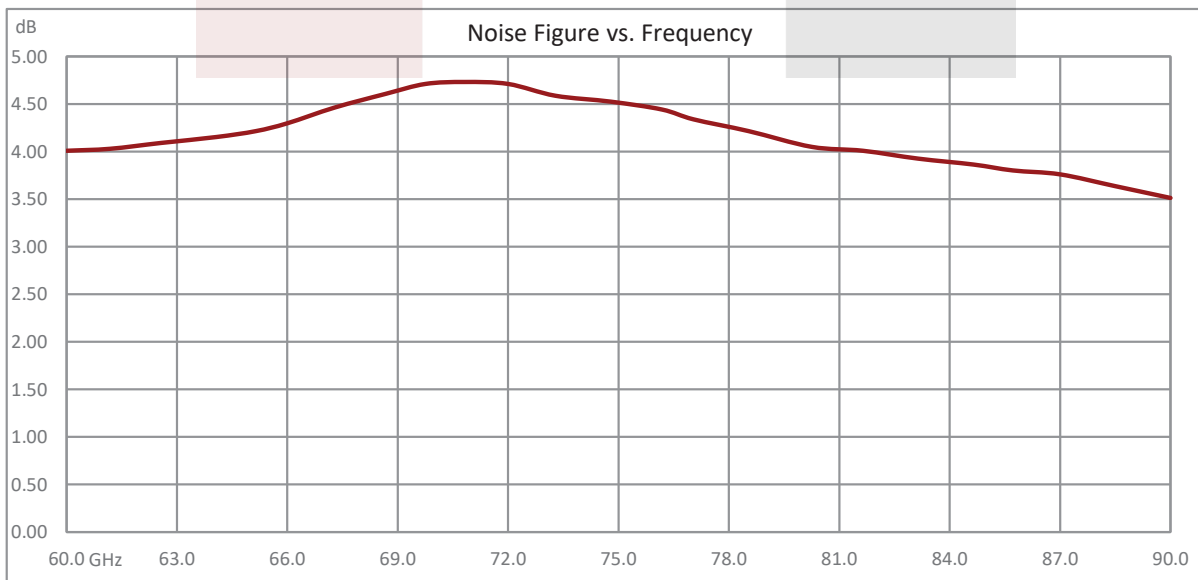
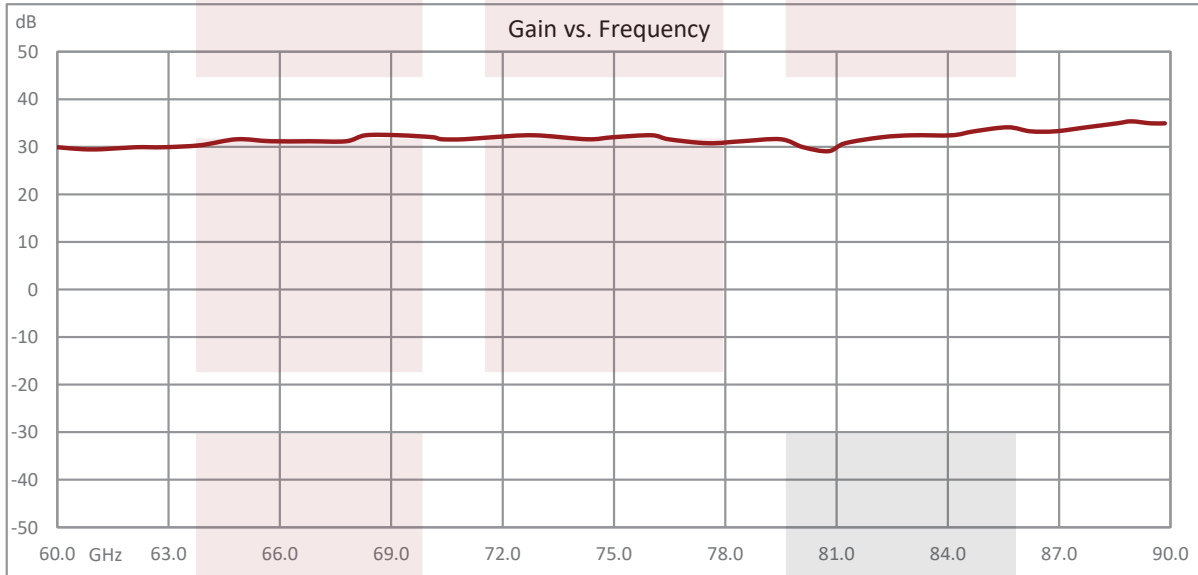
Operating Range -40 to 80 deg C
Storage Range -40 to 100 deg C

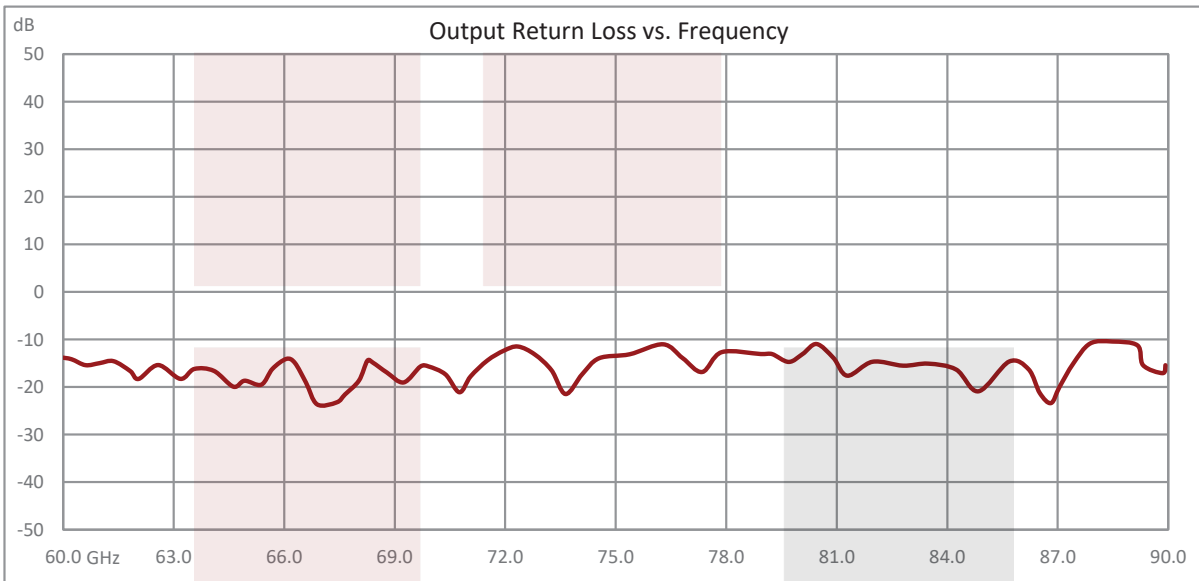
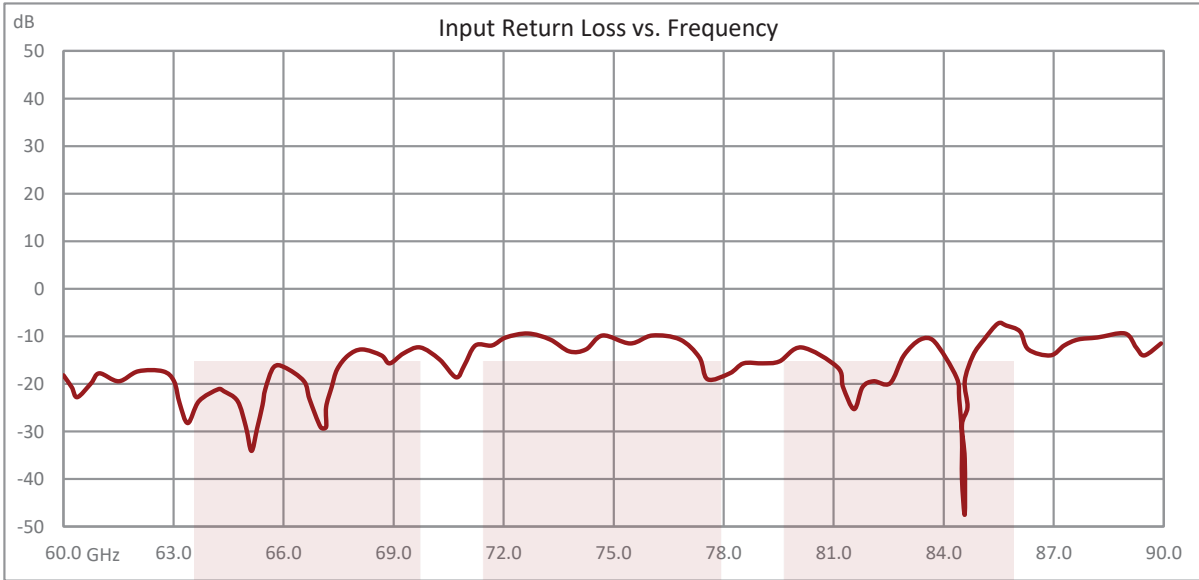
Compliance Certifications (see [product page](#) for current document)

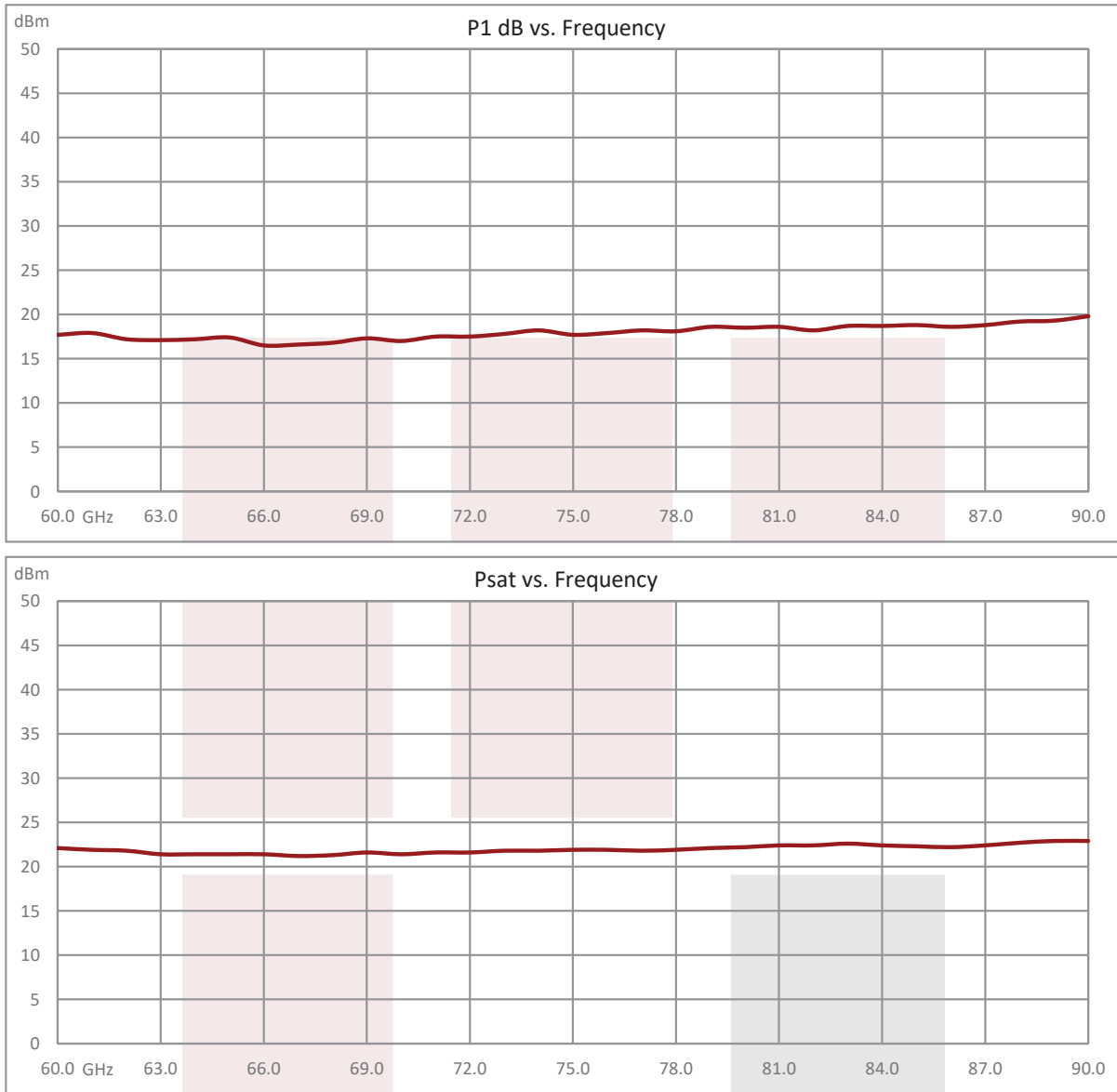
Plotted and Other Data

Notes:

Typical Performance Data





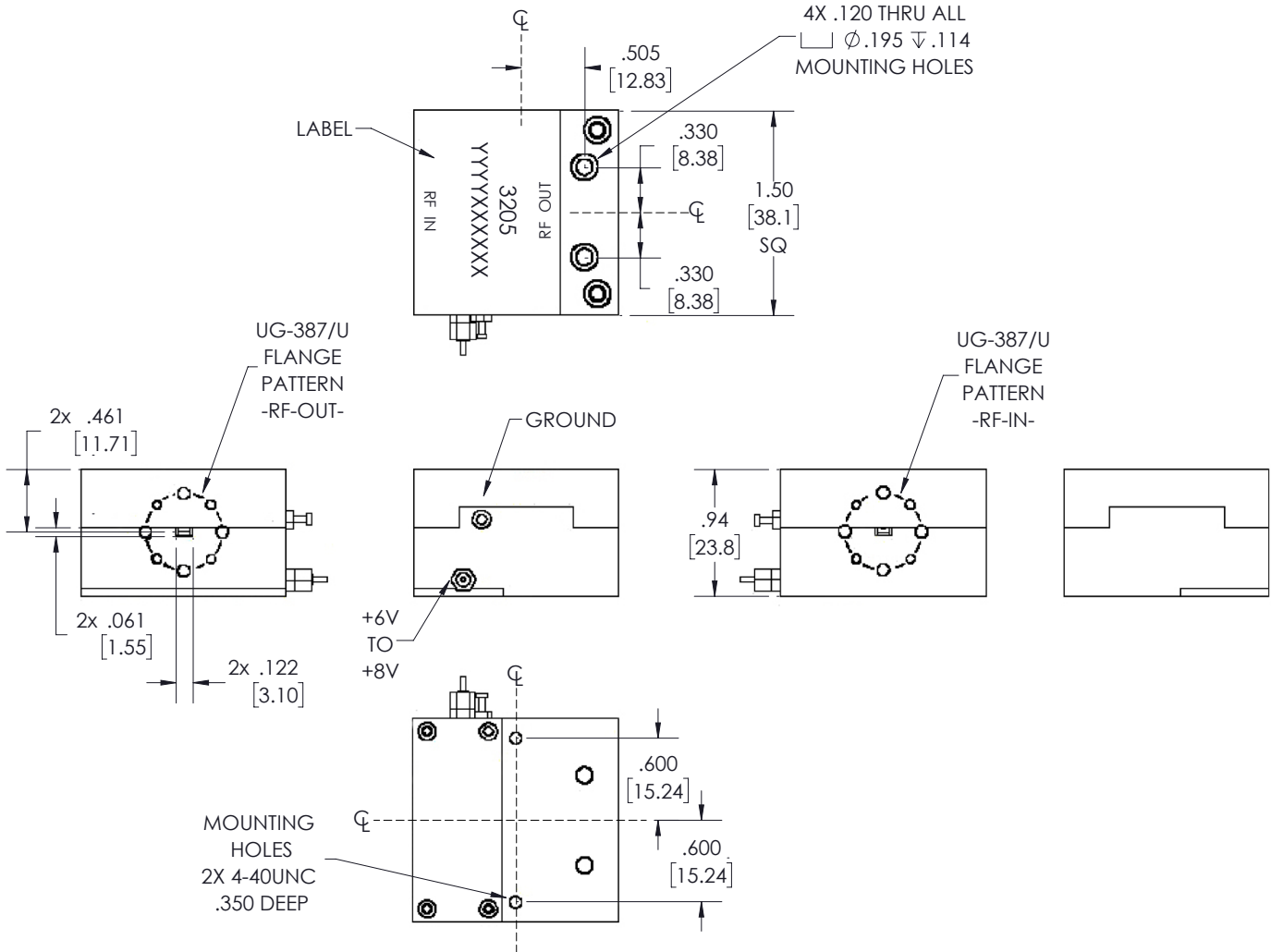


WR-12 Waveguide Low Noise Figure Amplifier at 4.7 dB from 60 GHz to 90 GHz Frequency in E band with 30 dB Gain, Using UG-387/U Flanges from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [WR-12 Waveguide Low Noise Figure Amplifier at 4.7 dB from 60 GHz to 90 GHz Frequency in E band with 30 dB Gain, Using UG-387/U Flanges FMWGA3205](https://www.fairviewmicrowave.com/wr-12-waveguide-low-noise-figure-amplifier-at-4.7-db-from-60-ghz-to-90-ghz-frequency-in-e-band-with-30-db-gain-using-ug-387-u-flanges-fmwga3205-p.aspx) URL: <https://www.fairviewmicrowave.com/wr-12-waveguide-low-noise-figure-amplifier-at-4.7-db-from-60-ghz-to-90-ghz-frequency-in-e-band-with-30-db-gain-using-ug-387-u-flanges-fmwga3205-p.aspx>

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	03/11/2022	TGALLA



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TITLE
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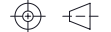
UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES DIMENSIONS IN [] ARE MILLIMETERS

TOLERANCES: CABLE LENGTH (L) TOLERANCES:

L ≤ 12 [305] = +1 [25] / -0
 12 [305] < L ≤ 60 [1524] = +2 [51] / -0
 60 [1524] < L ≤ 120 [3048] = +4 [102] / -0
 120 [3048] < L ≤ 300 [7620] = +6 [152] / -0
 300 [7620] < L = +5%L / -0

ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

THIRD-ANGLE PROJECTION



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SHEET 1 OF 1

SCALE N/A

SIZE A	CAGE CODE 3FKR5	DRAWN BY BPUCHASKI	ITEM NO. FMWGA3205	REV A
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