

## WR-15 Waveguide Low Noise Amplifier, V Band, 50 GHz to 75 GHz, 31 dB Gain, +13 dBm P1dB, UG-385/U Flange

The FMWGA3204 is a WR-15 Waveguide Low Noise Amplifier, operating across the V Band from 50 GHz to 75 GHz. This 50 Ohm design exhibits impressive typical performance which includes 31 dB gain, 4.8 dB noise figure, and +13 dBm P1dB. Maximum RF input power (CW) is -5 dBm, and DC bias is +6 Vdc at 90 mA typ. The rugged and small size aluminum package design is gold plated and supports a UG-385/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	50		75	GHz
Small Signal Gain		31		dB
P1 dB		14		dBm
Psat		13		dBm
Noise Figure		4.8	5.5	dB
VSWR		2.2:1		
RF Input Power			-5	dBm
Operating DC Voltage <sup>1,4</sup>	6	6	12	Volts
Operating DC Current		75		mA
Input Power (CW)			-5	dBm
Operating Temperature Range	-40		80	°C

### Biassing Up and Down Procedure

Biassing Up Procedure		Power Down Procedure	
Step 1	Connect Ground Pin	Step 1	Turn OFF RF input
Step 2	Apply DC Supply Voltage	Step 2	Turn OFF DC Supply Voltage
Step 3	Turn ON RF input	Step 3	Remove Ground

#### Electrical Specification Notes:

- 1.) DC Supply must be able to source at least 0.5A 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	1.5W
Input Power (CW)	-5dBm
DC Operating Voltage	+12Vdc

### Mechanical Specifications

<b>Size</b>	
Length	1.5 in [38.1 mm]

### Features:

- WR-15 Waveguide Low Noise Amplifier
- UG-385/U Flange
- 50 GHz to 75 GHz
- V Band
- Small Signal Gain 31 dB typ
- Noise Figure 4.8 dB typ
- VSWR 2.2:1 typ
- Output P1dB +13 dBm typ
- Output Psat +14 dBm typ
- DC Bias +6V @ 90 mA typ
- Max RF Input Power (CW) -5 dBm
- 50 Ohm Design
- RF Input and Output Waveguide Flange UG-385/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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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
Design	
DC Bias Connector	
Flange	UG-385/U

**Environmental Specifications**

**Temperature**

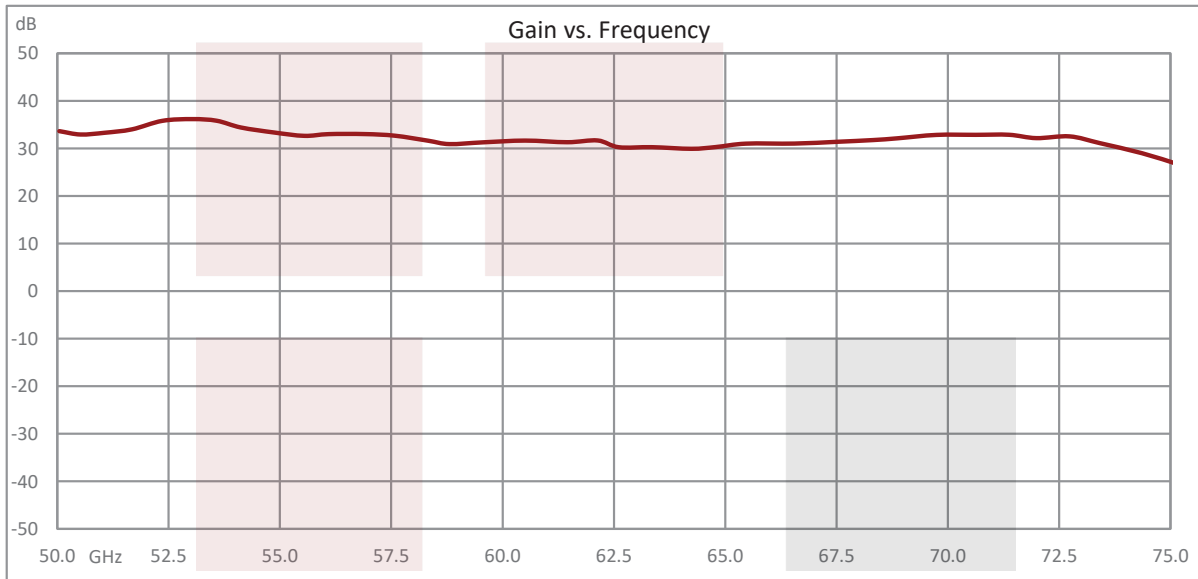
Operating Range	-40 to 80 deg C
Storage Range	-40 to 100 deg C

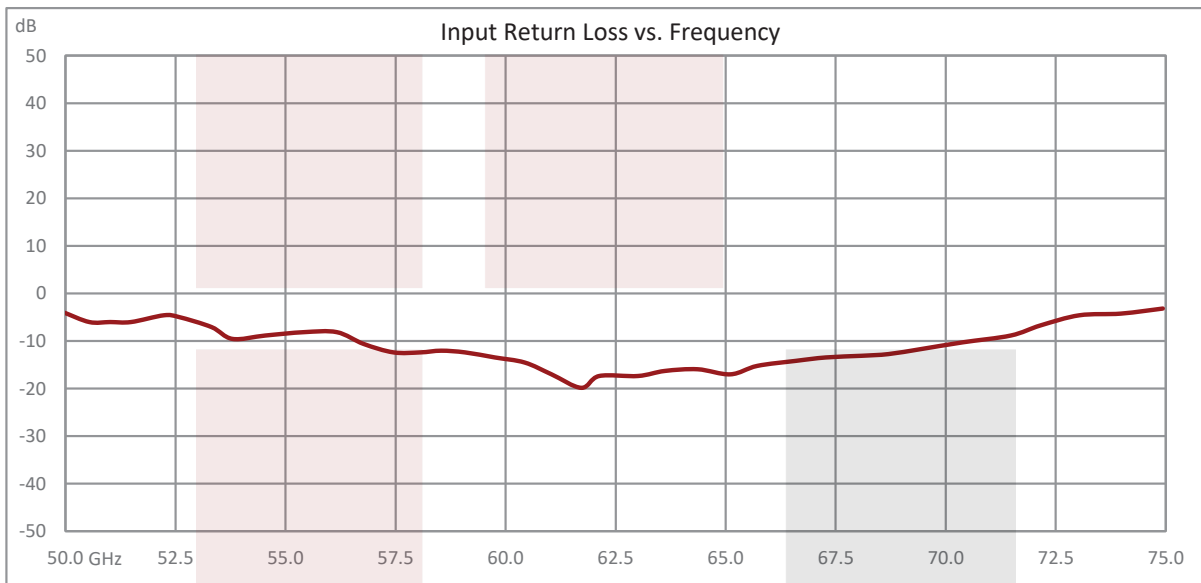
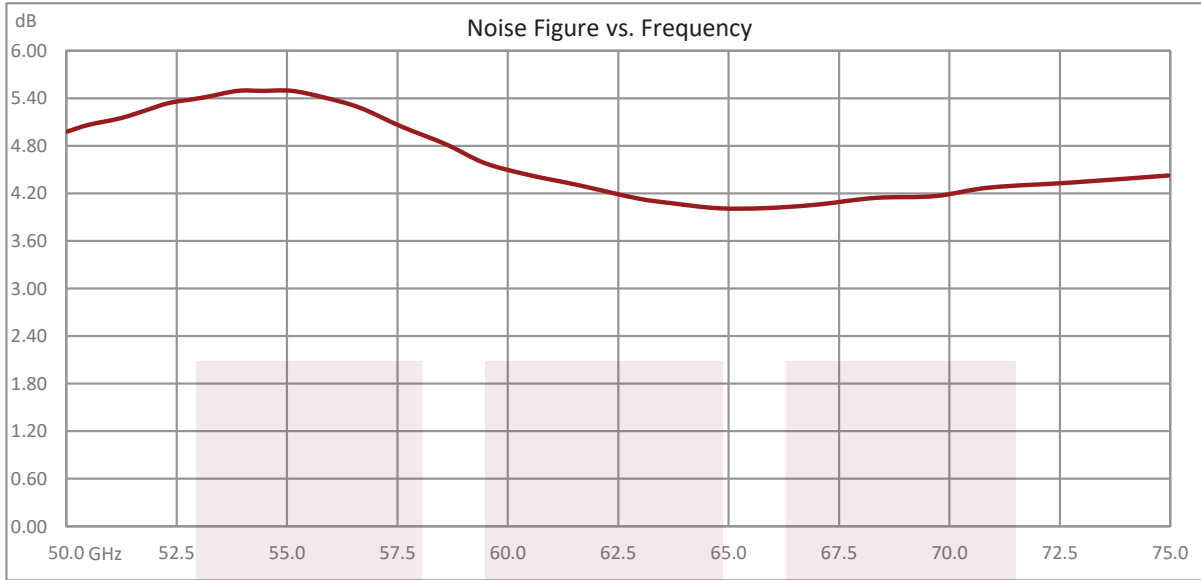
**Compliance Certifications** (see [product page](#) for current document)

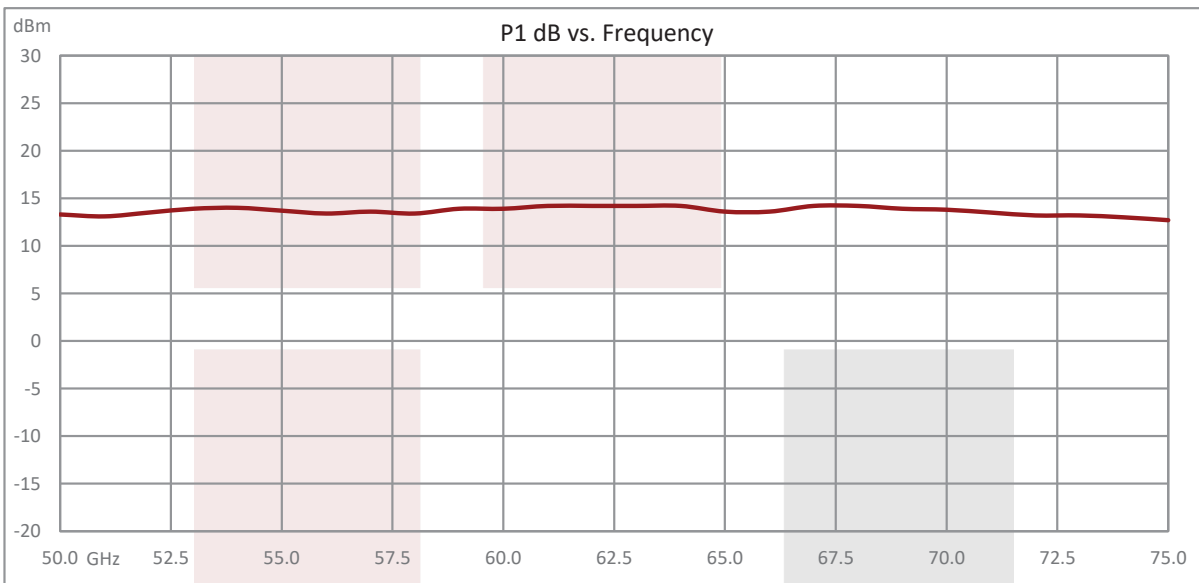
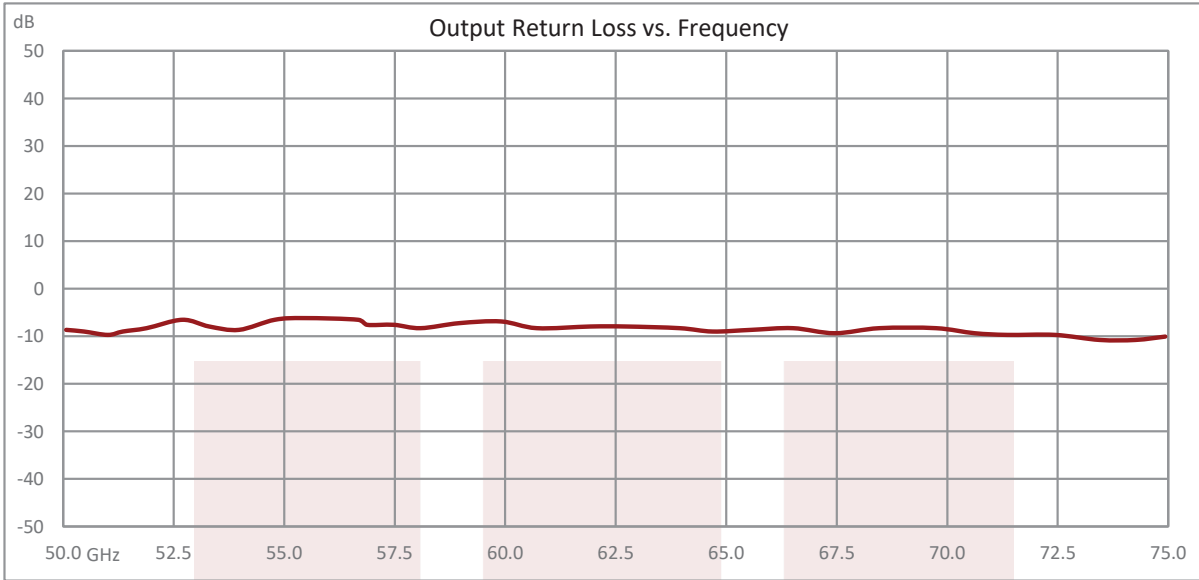
**Plotted and Other Data**

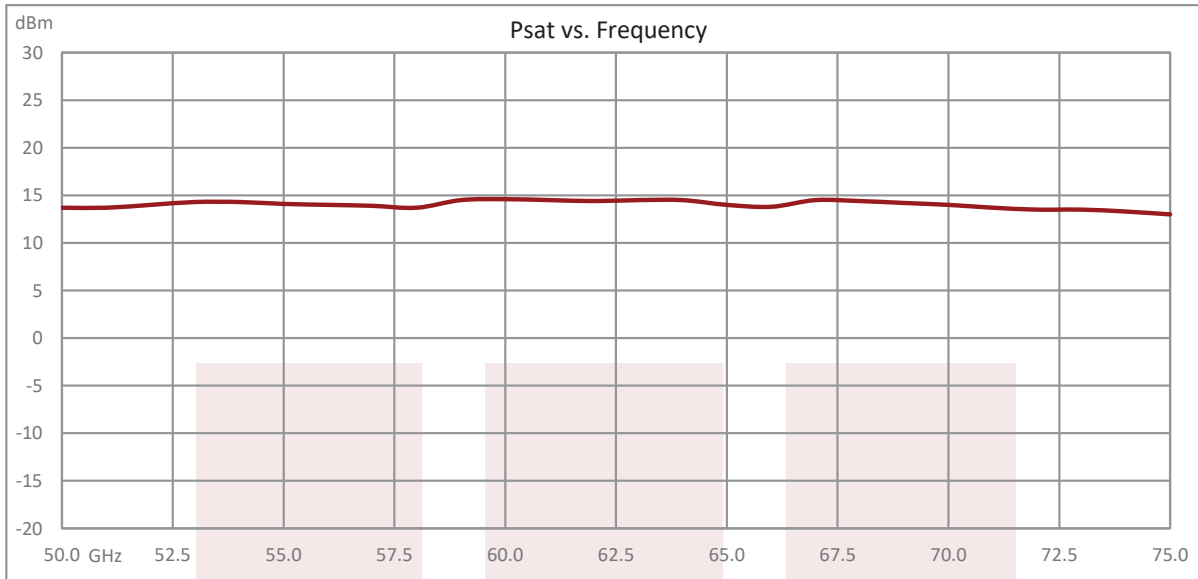
Notes:

**Typical Performance Data**







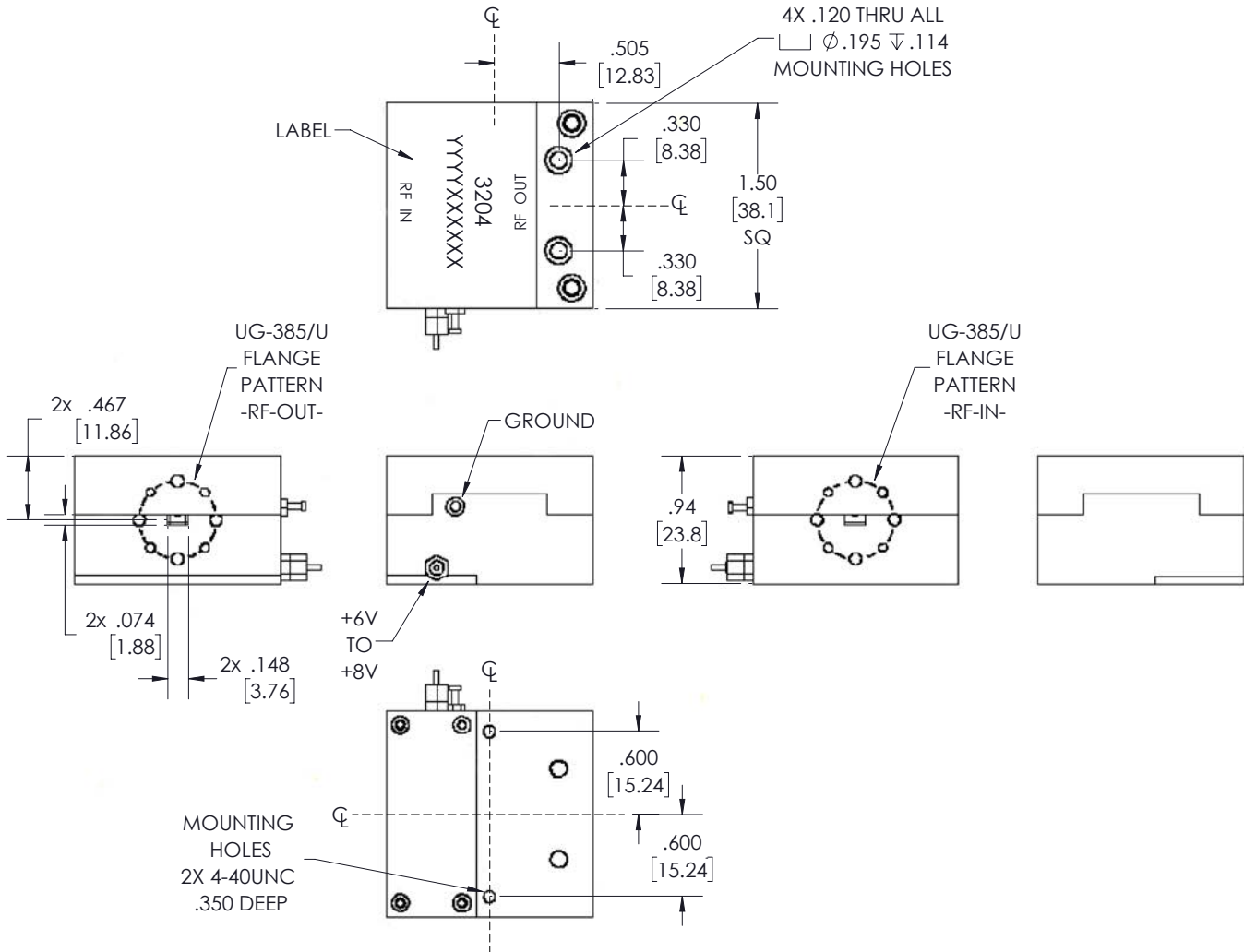


WR-15 Waveguide Low Noise Amplifier, V Band, 50 GHz to 75 GHz, 31 dB Gain, +13 dBm P1dB, UG-385/U Flange from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [WR-15 Waveguide Low Noise Amplifier, V Band, 50 GHz to 75 GHz, 31 dB Gain, +13 dBm P1dB, UG-385/U Flange FMWGA3204](https://www.fairviewmicrowave.com/wr-15-waveguide-low-noise-amplifier-75-ghz-v-band-fmwga3204-p.aspx) URL: <https://www.fairviewmicrowave.com/wr-15-waveguide-low-noise-amplifier-75-ghz-v-band-fmwga3204-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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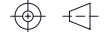
UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES  
DIMENSIONS IN [ ] ARE MILLIMETERS

TOLERANCES: CABLE LENGTH (L) TOLERANCES:

X = ±.2 [5.08] FRACTIONS ± 1/32  
XX = ±.02 [.51] ANGLES ± 1°  
XXX = ±.005 [.13]

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

THIRD-ANGLE PROJECTION



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SHEET 1 OF 1

ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

SCALE N/A

SIZE A	CAGE CODE 3FKR5	DRAWN BY BPUCHASKI	ITEM NO. FMWGA3204	REV A
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