

WR-19 Waveguide Low Noise Amplifier, U Band, 40 GHz to 60 GHz, 38 dB Gain, 9.5 dBm P1dB, UG-383/U-M Flange

The FMWGA3203 is a WR-19 Waveguide Low Noise Amplifier, operating across the U Band from 40 GHz to 60 GHz. This 50 Ohm design exhibits impressive typical performance which includes 38 dB gain, 4.6 dB noise figure, and +9.5 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-383/U-M 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	40		60	GHz
Small Signal Gain		36		dB
P1 dB		14.5		dBm
Psat		9.5		dBm
Noise Figure		4.6		dB
VSWR		2.2:1		
RF Input Power			-5	dBm
Operating DC Voltage ^{1,4}	6	6	12	Volts
Operating DC Current		85		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

Size	
Length	1.5 in [38.1 mm]

Features:

- WR-19 Waveguide Low Noise Amplifier
- UG-383/U-M Flange
- 40 GHz to 60 GHz
- U Band
- Small Signal Gain 38 dB typ
- Noise Figure 4.6 dB typ
- VSWR 2.2:1 typ
- Output P1dB 9.5 dBm typ
- Output Psat +14.5 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-383/U-M
- 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:

- Military & Space
- R&D Labs
- Communicatoin Systems
- Radar Systems
- Microwave Radio Systems

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Width	1.5 in [38.1 mm]
Height	1.2 in [30.48 mm]
Weight	0.25 lbs [113.4 g]
Body Material and Plating	Aluminum, Gold
Design	
DC Bias Connector	
Flange	UG-383/U-Mod

Environmental Specifications

Temperature

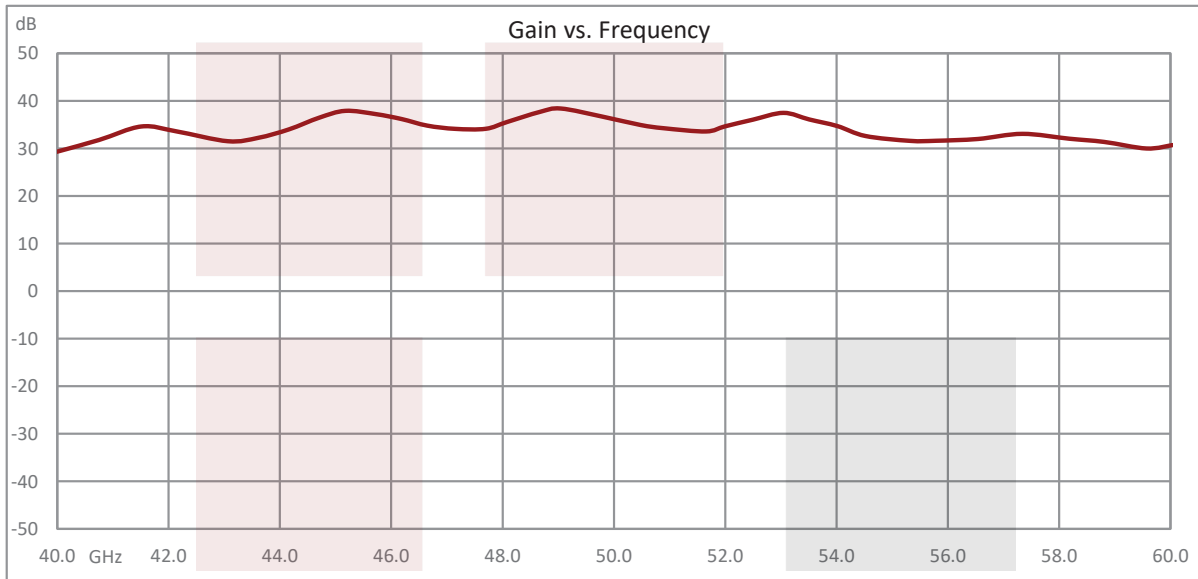
Operating Range	-40 to 80 deg C
Storage Range	-40 to 100 deg C

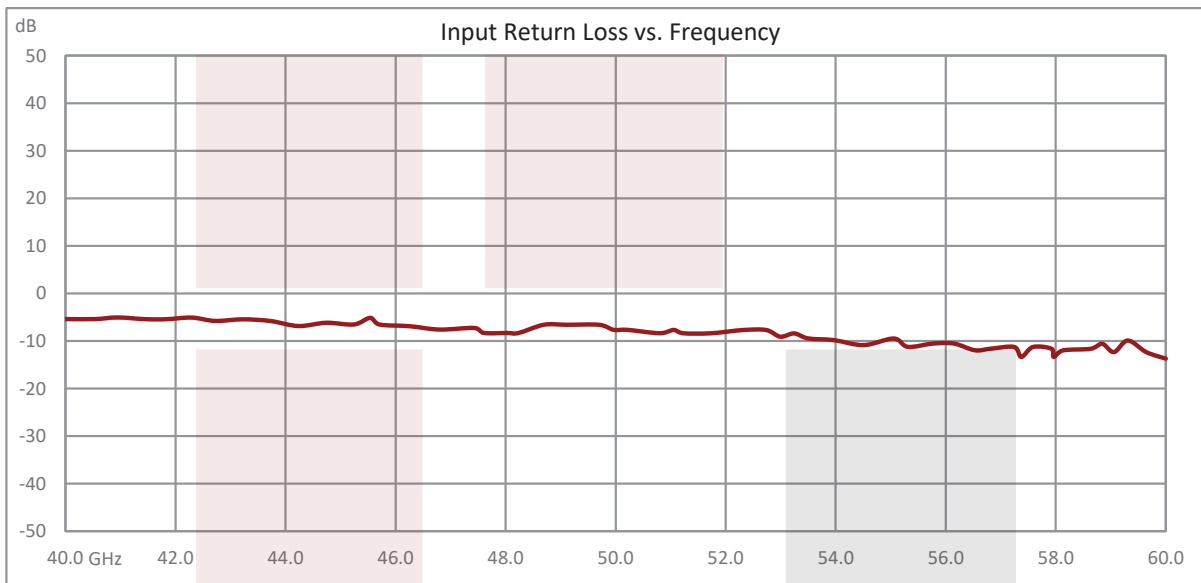
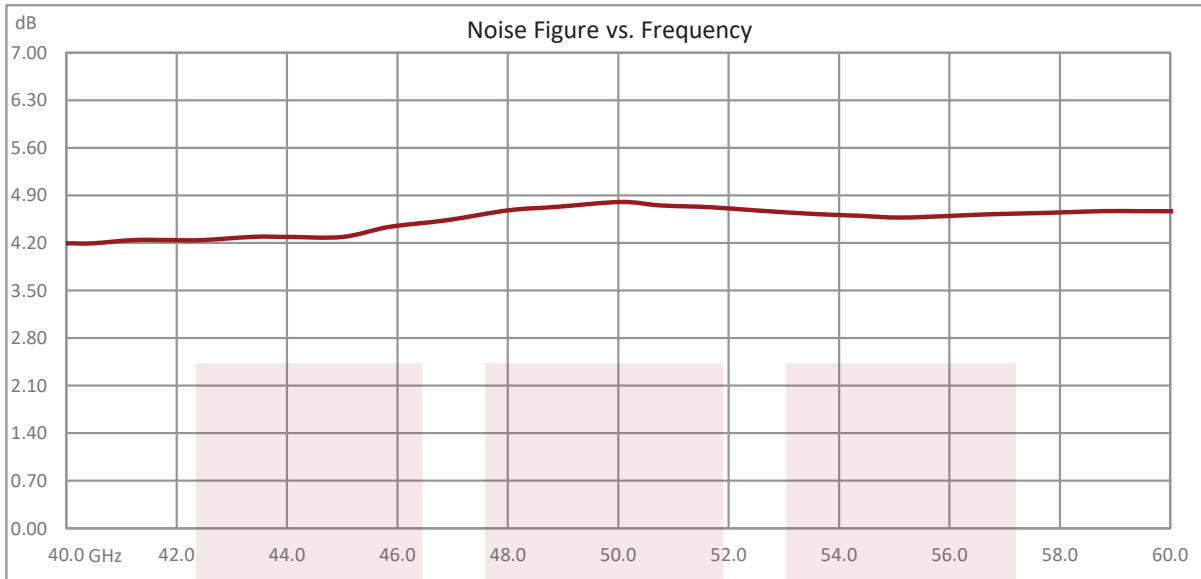
Compliance Certifications (see [product page](#) for current document)

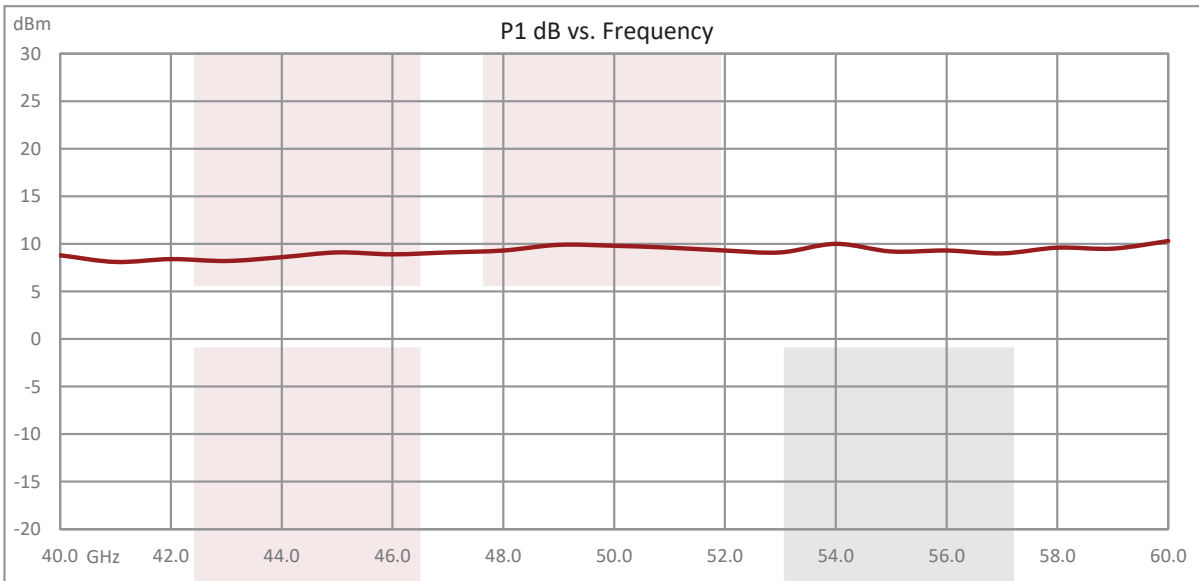
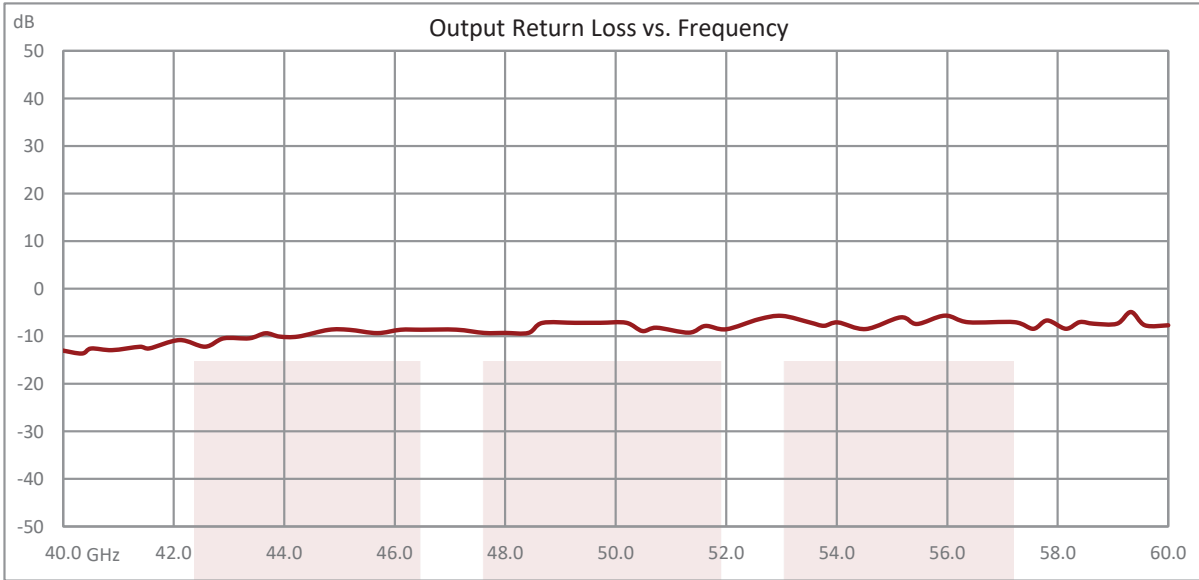
Plotted and Other Data

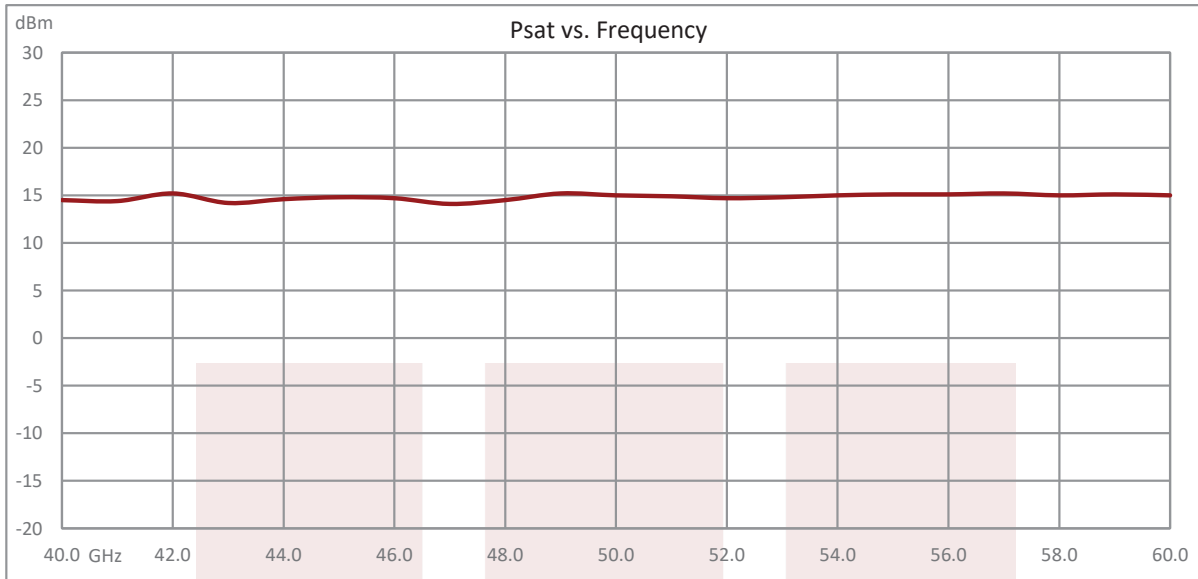
Notes:

Typical Performance Data







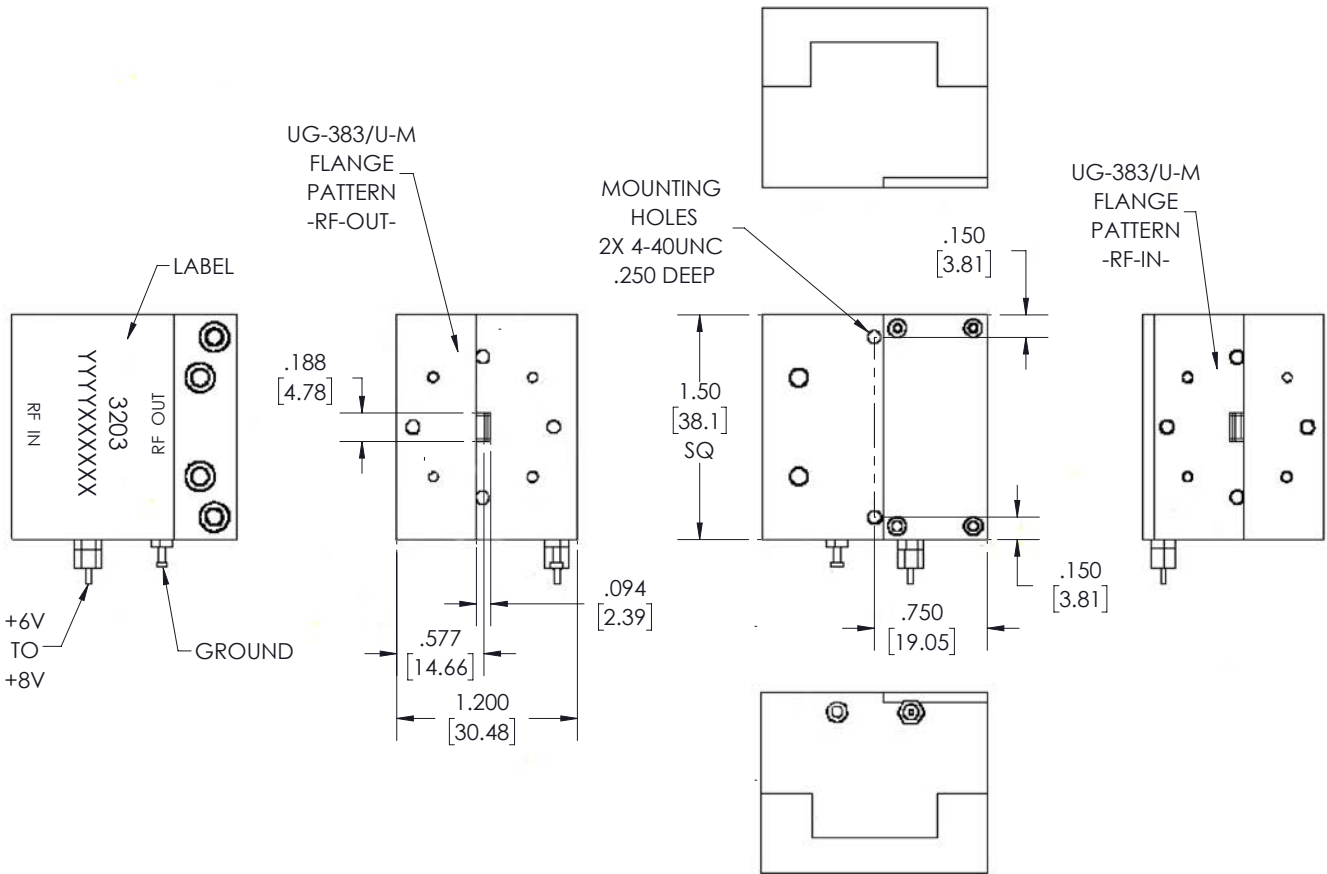


WR-19 Waveguide Low Noise Amplifier, U Band, 40 GHz to 60 GHz, 38 dB Gain, 9.5 dBm P1dB, UG-383/U-M Flange from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [WR-19 Waveguide Low Noise Amplifier, U Band, 40 GHz to 60 GHz, 38 dB Gain, 9.5 dBm P1dB, UG-383/U-M Flange FMWGA3203](https://www.fairviewmicrowave.com/wr-19-waveguide-low-noise-amplifier-60-ghz-u-band-fmwga3203-p.aspx) URL: <https://www.fairviewmicrowave.com/wr-19-waveguide-low-noise-amplifier-60-ghz-u-band-fmwga3203-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 L ≤ 12 [305] = +1 [25] / -0
 .XX = ±.02 [.51] ± 1/32 12 [305] < L ≤ 60 [1524] = +2 [51] / -0
 .XXX = ±.005 [.13] ANGLES ± 1° 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. FMWGA3203	REV A
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