

**WR-19 Waveguide Voltage Variable Attenuator, U Band, 40 GHz to 60 GHz, 0 dB to 30 dB Attenuation, 3.4 dB Loss, UG-383/U-M Flange**

The FMWGA3212 is a WR-19 Waveguide Voltage Variable Attenuator, operating across the U Band from 40 GHz to 60 GHz. This 50 Ohm design has 3.4 dB typ insertion loss with a maximum (CW) input power handling of +23 dBm. The control voltage is 0 Vdc to +5 Vdc to adjust the attenuation level from 0 dB to 30 dB typ across the full frequency band. The rugged and small size aluminum package design is gold plated and supports a UG-383/U-M waveguide flange pattern at the RF input and output ports. Solder pins are used for DC voltage control and ground. The module operates across a wide temperature range from -40°C to +80°C.



**Electrical Specifications\***

| Description               | Min | Typ | Max | Units |
|---------------------------|-----|-----|-----|-------|
| Frequency Range           | 40  |     | 60  | GHz   |
| Typical Attenuation Value | 0   |     | 30  | dB    |
| Insertion Loss            | 3.1 | 3.4 | 3.7 | dB    |
| Maximum Pin (CW)          |     |     | 23  | dBm   |
| Control Voltage           | 0   |     | 5   | Vdc   |

**Electrical Notes:**

- 1.) Open and short-circuit loads are not recommended at the attenuator output.
- 2.) Ensure proper 50 Ohm load before turning the attenuator "ON".
- 3.) Do not put any foreign objects inside the waveguide. Warranty will be voided.

Values at 25°C, sea level

**Biasing Up and Power Down Procedure**

| Biasing 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              |

**Mechanical Specifications**

**Flange 1**

Interface UG-383/U-M

**Waveguide**

Interface WR-19  
Material Aluminum  
Plating Gold

**Flange 2**

Interface UG-383/U-M

**Temperature**

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

**Size**

Length 1.5 in [38.1 mm]

**Features:**

- WR-19 Waveguide Voltage Variable Attenuator
- 40 GHz to 60 GHz
- U Band
- Insertion Loss: 3.4 dB typ
- Attenuation Range: 0 dB to 30 dB typ
- DC Control Voltage: 0 Vdc to +5 Vdc
- Max RF Input Power (CW) +23 dBm
- 50 Ohm Design
- RF Input and Output Waveguide Flange UG-383/U-M
- Solder Pins for DC Control 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  
RF Wideband Front Ends  
Test Instrumentation

Fairview Microwave  
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Fax: (972) 649-6689  
www.fairviewmicrowave.com  
sales@fairviewmicrowave.com

Width 1.5 in [38.1 mm]  
 Height 1.2 in [30.48 mm]  
 Weight 0.05 lbs [22.68 g]

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

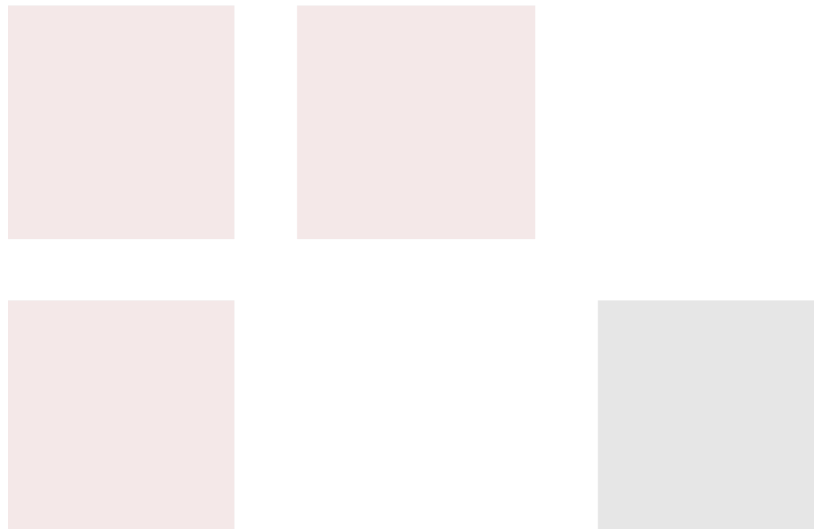
**Plotted and Other Data**

Notes:

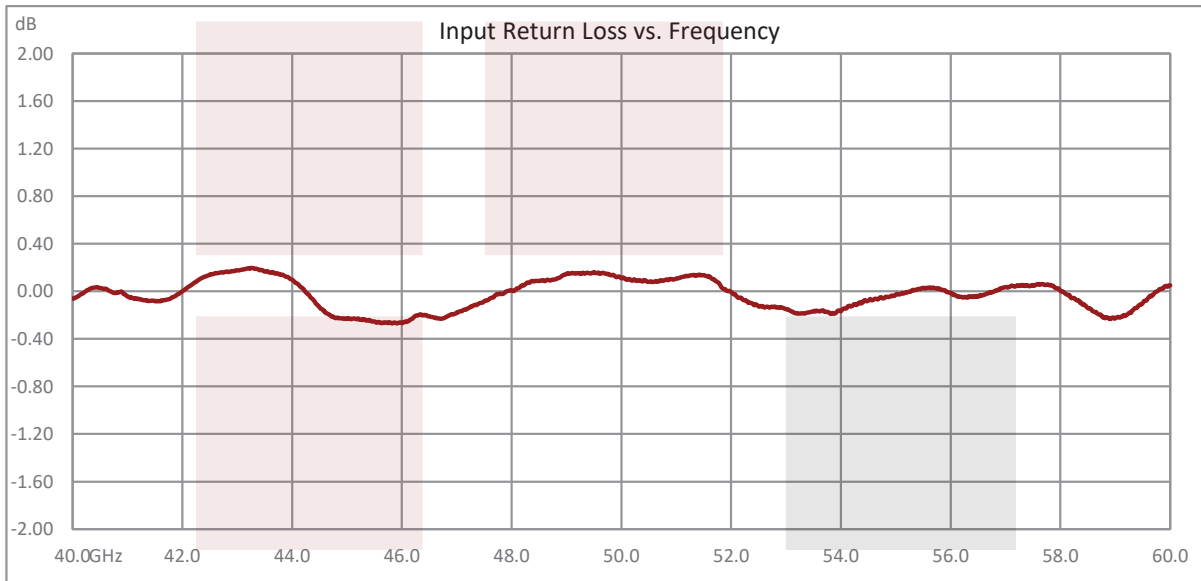
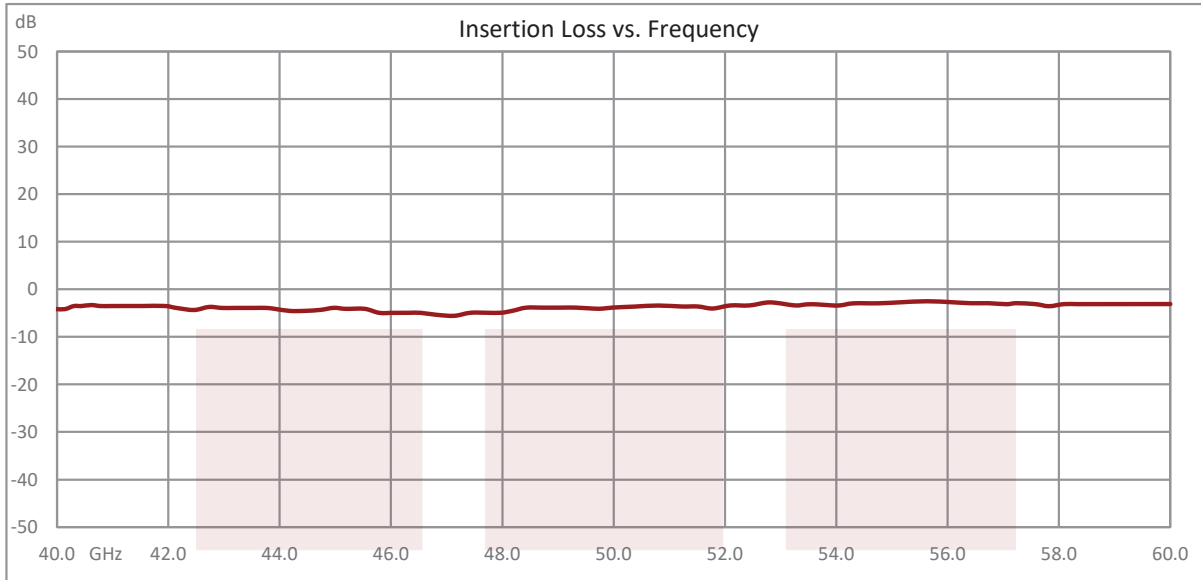
- Values at 25 °C, sea level

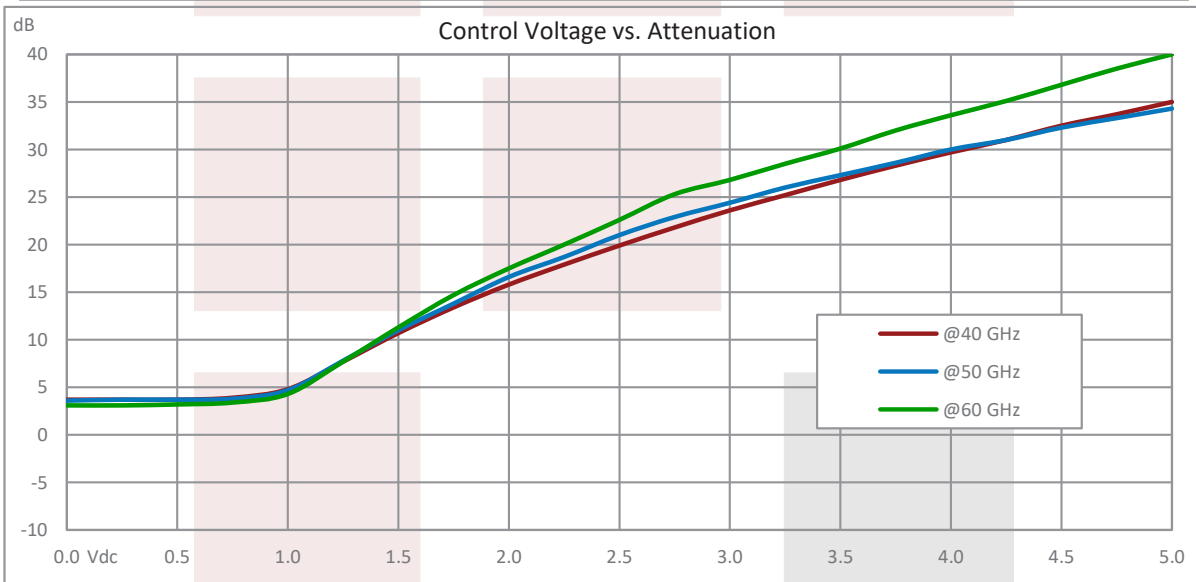
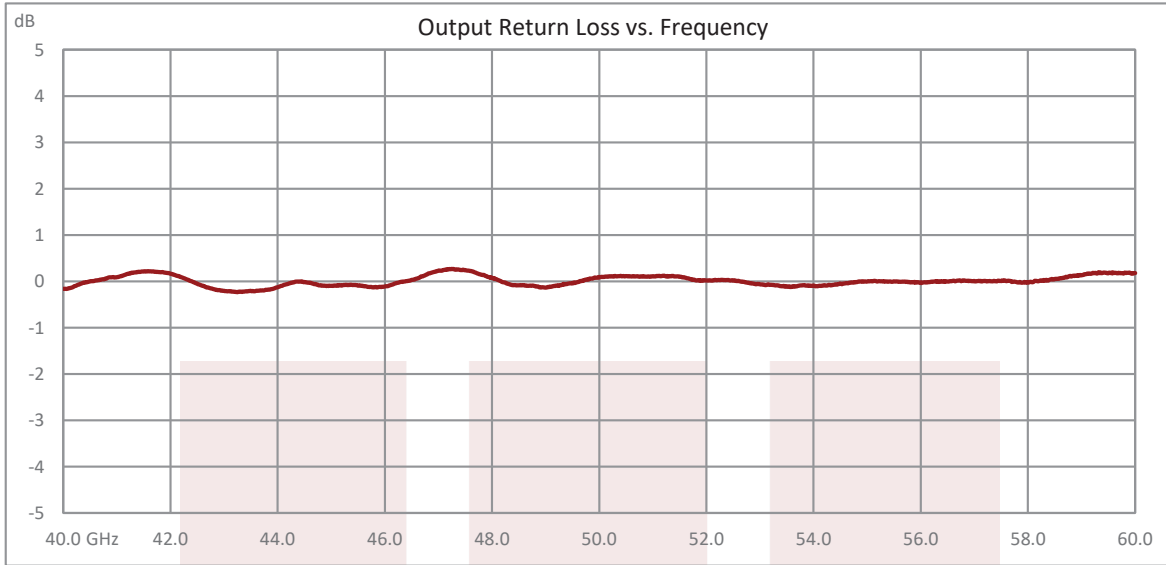
**Absolute Maximum Rating**

| Parameter               | Rating          |
|-------------------------|-----------------|
| Operating Temperature   | -40°C to +80°C  |
| Storage Temperature     | -40°C to +100°C |
| Total Power Dissipation | 0.1W            |
| Power Handling (CW)     | +23dBm          |
| Control Voltage         | +10V            |



**Typical Performance Data**





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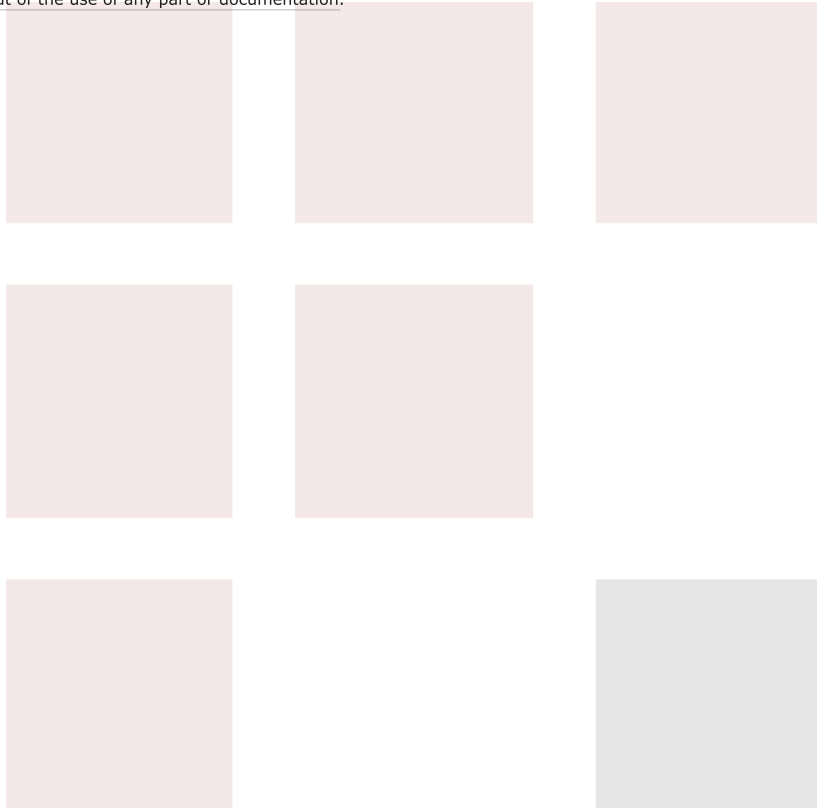
WR-19 Waveguide Voltage Variable Attenuator, U Band, 40 GHz to 60 GHz, 0 dB to 30 dB Attenuation, 3.4 dB Loss, UG-383/U-M Flange from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-

demand.

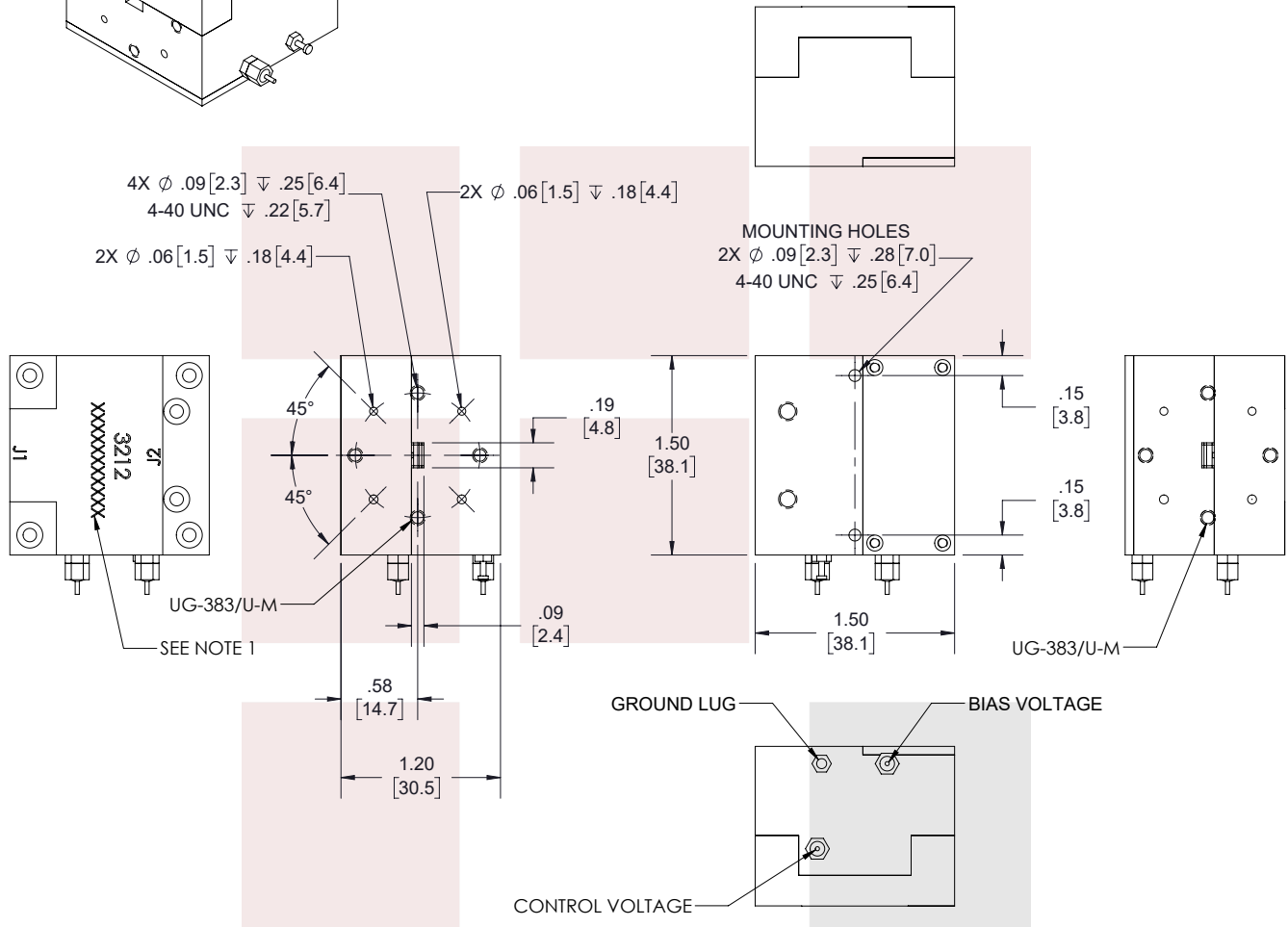
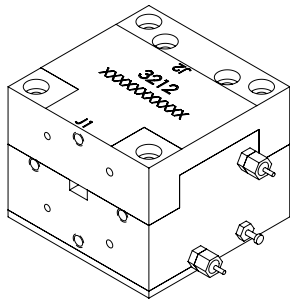
For additional information on this product, please click the following link: [WR-19 Waveguide Voltage Variable Attenuator, U Band, 40 GHz to 60 GHz, 0 dB to 30 dB Attenuation, 3.4 dB Loss, UG-383/U-M Flange FMWGA3212](#)

URL: <https://www.fairviewmicrowave.com/undefined-url-for-pn-fmwga3212-fmwga3212-p.aspx>

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| REVISIONS |                 |            |          |
|-----------|-----------------|------------|----------|
| REV.      | DESCRIPTION     | DATE       | APPROVED |
| A         | INITIAL RELEASE | 04/18/2022 | TGALLA   |



**NOTES:**

- SERIAL NUMBER AND DATE CODE ARE COMBINED. EX: 202008280001.

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TITLE

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

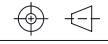
TOLERANCES:

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

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

THIRD-ANGLE PROJECTION



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SHEET 1 OF 1

ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

SCALE N/A

|           |                    |                        |                       |          |
|-----------|--------------------|------------------------|-----------------------|----------|
| SIZE<br>A | CAGE CODE<br>3FKR5 | DRAWN BY<br>VTHANGARAJ | ITEM NO.<br>FMWGA3212 | REV<br>A |
|-----------|--------------------|------------------------|-----------------------|----------|

T-Rev.D