

60 GHz to 90 GHz E-Band 6x Active Frequency Multiplier, +20 dBm Pout, WR-12 Output with UG-387/U Flange, SMA Female Input

The FMFX2025 is a WR-12 Waveguide 6x Active Frequency Multiplier that covers the full E frequency band from 60 GHz to 90 GHz with an input frequency band from 10 GHz to 15 GHz. Typical performance for the 50 ohm design includes +3 dBm input power, +20 dBm output power, and -15 dBc harmonics. Maximum input power (CW) is +10 dBm, and DC bias is +6V at 240 mA typ. The rugged and small size aluminum package design is gold plated and supports an SMA female connector for the RF input port and a UG-387/U waveguide flange pattern at the RF output port. Solder pins are used for DC bias voltage and ground. The module operates across a wide temperature range from of -40°C to +80°C maximum.



Electrical Specifications@ +25°C

| Description | Min | Typ | Max | Units |
|------------------------|-----|-------|-----|-------|
| Input Frequency Range | 10 | | 15 | GHz |
| Output Frequency Range | 60 | | 90 | GHz |
| Input Power | 1 | 3 | 10 | dBm |
| Output Power | | 20 | | dBm |
| DC Voltage | 5 | 6 | 8 | Volts |
| DC Current | | 251 | | mA |
| Input VSWR | | 2.5:1 | | |
| Harmonics | | -15 | | dBc |

Biasing Up and Down Procedure

| Biasing Up Procedure | |
|----------------------|----------------------------|
| Step 1 | Connect Ground Pin |
| Step 2 | Apply DC Supply Voltage |
| Step 3 | Turn ON RF input |
| Power Down Procedure | |
| Step 1 | Turn OFF RF input |
| Step 2 | Turn OFF DC Supply Voltage |
| 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 multiplier output.
- 3.) Ensure proper 50 Ohm load before turning the multiplier "ON".
- 4.) Do not put any foreign objects inside the waveguide. The warranty will be voided.

Mechanical Specifications

| | |
|-------------|---------------------|
| Size | |
| Length | 1.673 in [42.49 mm] |
| Width | 1.673 in [42.49 mm] |

Features:

- WR-12 Waveguide 6x Active Frequency Multiplier with Integrated Heatsink
- Output Frequency 60 GHz to 90 GHz, E Band
- Input Frequency 10 GHz to 15 GHz
- Pout +20 dBm typ
- Bias Voltage Range +6 Vdc to +8 Vdc
- DC current 575 mA typ
- 50 Ohm Design
- Input RF Connector SMA Female
- Output Waveguide WR-12 with UG-387/U flange
- 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 Electronic Systems
- Military & Commercial Communications
- Research & Development

Fairview Microwave
 301 Leora Ln., Suite 100
 Lewisville, TX 75056
 Tel: 1-800-715-4396 / (972) 649-6678
 Fax: (972) 649-6689
www.fairviewmicrowave.com
sales@fairviewmicrowave.com

| | |
|---------------------------|--------------------------------------|
| Height | 1.704 in [43.28 mm] |
| Weight | 0.2 lbs [90.72 g] |
| Body Material and Plating | Aluminum |
| Finish | GLD |
| Input Port | SMA Female |
| Output Port | WR-12 Waveguide with UG-387/U Flange |
| DC Bias | Feed-thru Pin |

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)

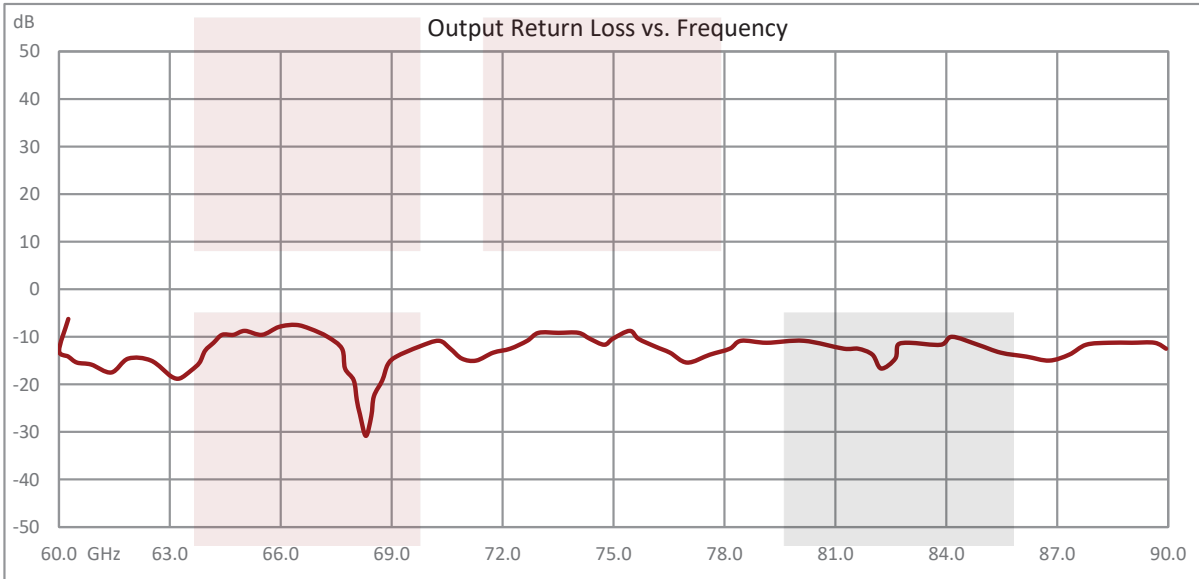
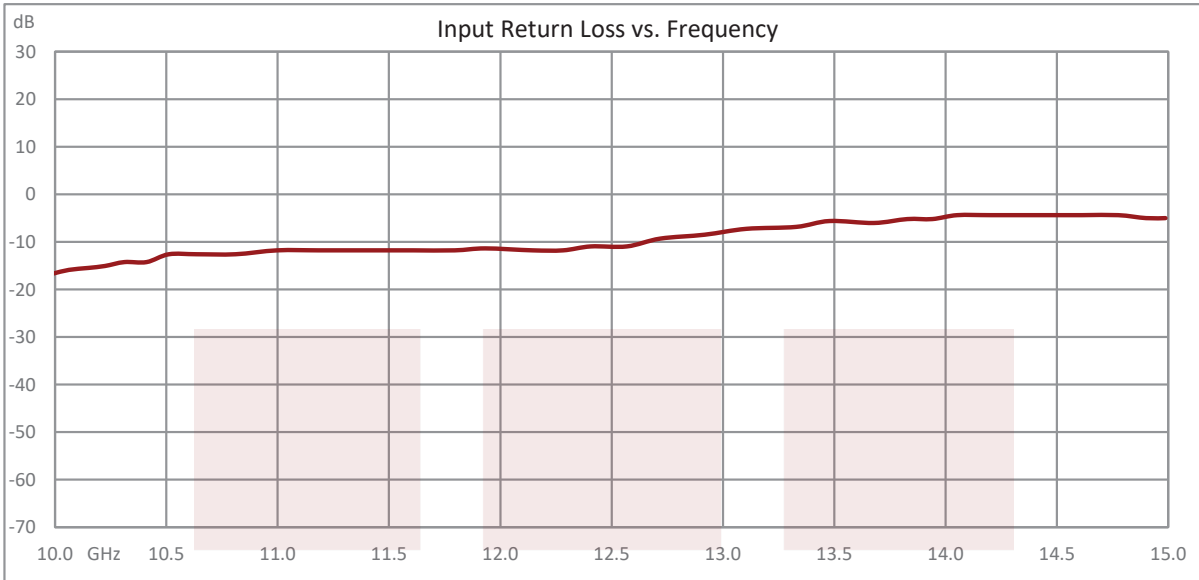
Plotted and Other Data

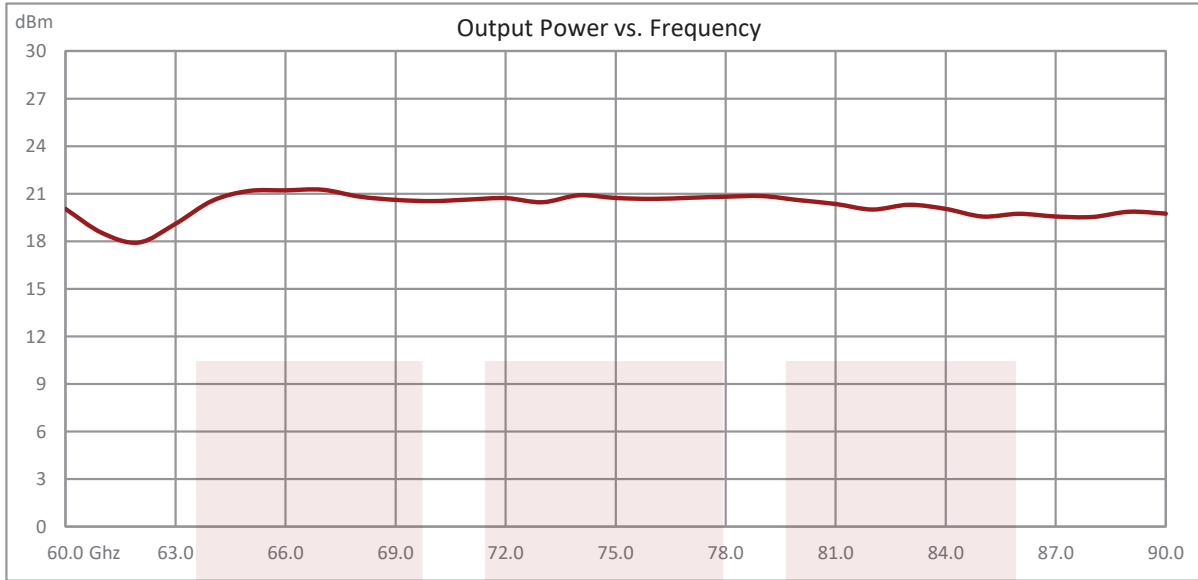
Notes:

Absolute Maximum Rating

| Parameter | Rating |
|-------------------------|-----------------|
| Operating Temperature | -40°C to +80°C |
| Storage Temperature | -40°C to +100°C |
| Total Power Dissipation | 4W |
| Input Power (CW) | +10dBm |
| DC Operating Voltage | +12V |

Typical Performance Data





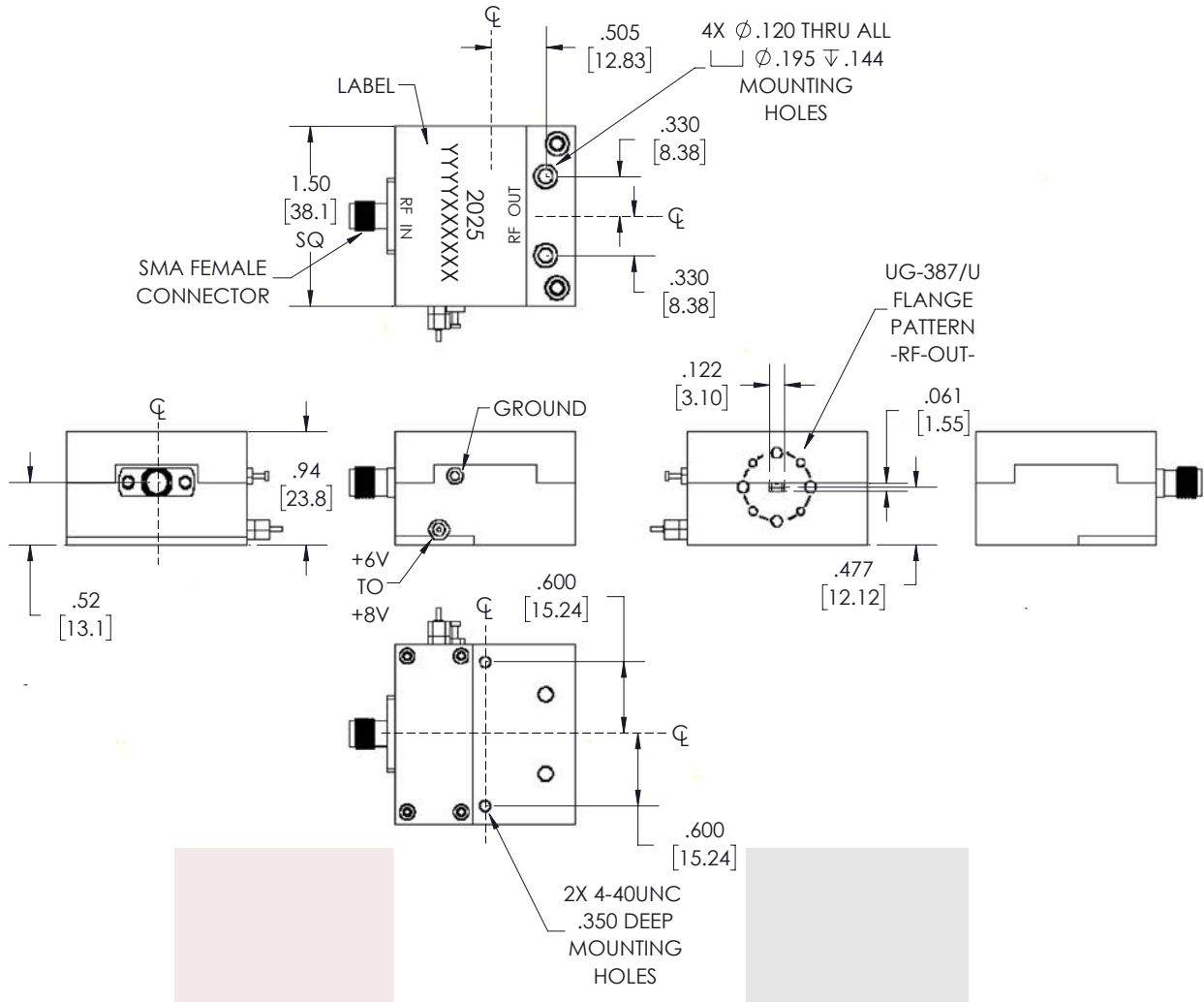
60 GHz to 90 GHz E-Band 6x Active Frequency Multiplier, +20 dBm Pout, WR-12 Output with UG-387/U Flange, SMA Female Input from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [60 GHz to 90 GHz E-Band 6x Active Frequency Multiplier, +20 dBm Pout, WR-12 Output with UG-387/U Flange, SMA Female Input FMFX2025](https://www.fairviewmicrowave.com/wr-12-waveguide-6x-frequency-multiplier-w-heatsink-e-band-60-ghz-to-90-ghz-output-frequency-+20-dbm-pout-input-sma-ug-387-u-flange-fmfx2025-p.aspx)

URL: <https://www.fairviewmicrowave.com/wr-12-waveguide-6x-frequency-multiplier-w-heatsink-e-band-60-ghz-to-90-ghz-output-frequency-+20-dbm-pout-input-sma-ug-387-u-flange-fmfx2025-p.aspx>

The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Fairview Microwave reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Fairview Microwave does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Fairview Microwave does not assume any liability arising out of the use of any part or documentation.

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



THESE COMMODITIES, TECHNOLOGY OR SOFTWARE WERE EXPORTED FROM THE UNITED STATES IN ACCORDANCE WITH THE EXPORT ADMINISTRATION REGULATIONS. DIVERSION CONTRARY TO U.S. LAW PROHIBITED.

TITLE

60 GHz to 90 GHz E-Band 6x Active Frequency Multiplier, +20 dBm Pout, WR-12 Output with UG-387/U Flange, SMA Female Input

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

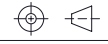
TOLERANCES:

.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



THE INFORMATION AND DESIGN IN THIS DOCUMENT IS THE PROPERTY OF FAIRVIEW MICROWAVE CORPORATION. ALL RIGHTS RESERVED.

SHEET 1 OF 1

ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

SCALE

N/A

| | | | | |
|-----------|--------------------|-----------------------|----------------------|----------|
| SIZE A | CAGE CODE 3FKR5 | DRAWN BY BPUCHASKI | ITEM NO. FMFX2025 | REV A |
|-----------|--------------------|-----------------------|----------------------|----------|

PEPERFORMANCE
T-Rev.D