

50 GHz to 75 GHz V-Band 4x Active Frequency Multiplier, +15 dBm Pout, WR-15 Output with UG-385/U Flange, SMA Female Input

The FMFX2023 is a WR-15 Waveguide 4x Active Frequency Multiplier that covers the full V frequency band from 50 GHz to 70 GHz with an input frequency band from 12.5 GHz to 18.75 GHz. Typical performance for the 50 ohm design includes +7 dBm input power, +15 dBm output power, and -15 dBc harmonics. Maximum input power (CW) is +10 dBm, and DC bias is +6 Vdc at 275 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-385/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 -40°C to +80°C maximum.



Electrical Specifications@ +25°C

Description	Min	Typ	Max	Units
Input Frequency Range	12.5		18.75	GHz
Output Frequency Range	50		75	GHz
Input Power	5	7	10	dBm
Output Power		15		dBm
DC Voltage	5	6	8	Volts
DC Current		275		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	1.5 in [38.1 mm]
Width	1.5 in [38.1 mm]

Features:

- WR-15 Waveguide 4x Active Frequency Multiplier
- Output Frequency 50 GHz to 70 GHz, V Band
- Input Frequency 12.5 GHz to 18.75 GHz
- Pout +15 dBm typ
- Bias Voltage Range +6 Vdc to +8 Vdc
- DC current 275 mA typ
- 50 Ohm Design
- Input RF Connector SMA Female
- Output Waveguide WR-15 with UG-385/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:

- Military & Space
- R&D Labs
- Communication Systems
- Radar Systems
- Microwave Radio Systems
- RF Wideband Front Ends
- Test Instrumentation

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Height	0.937 in [23.8 mm]
Weight	0.2 lbs [90.72 g]
Body Material and Plating	Aluminum
Finish	GLD
Input Port	SMA Female
Output Port	WR-15 Waveguide with UG-385/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)

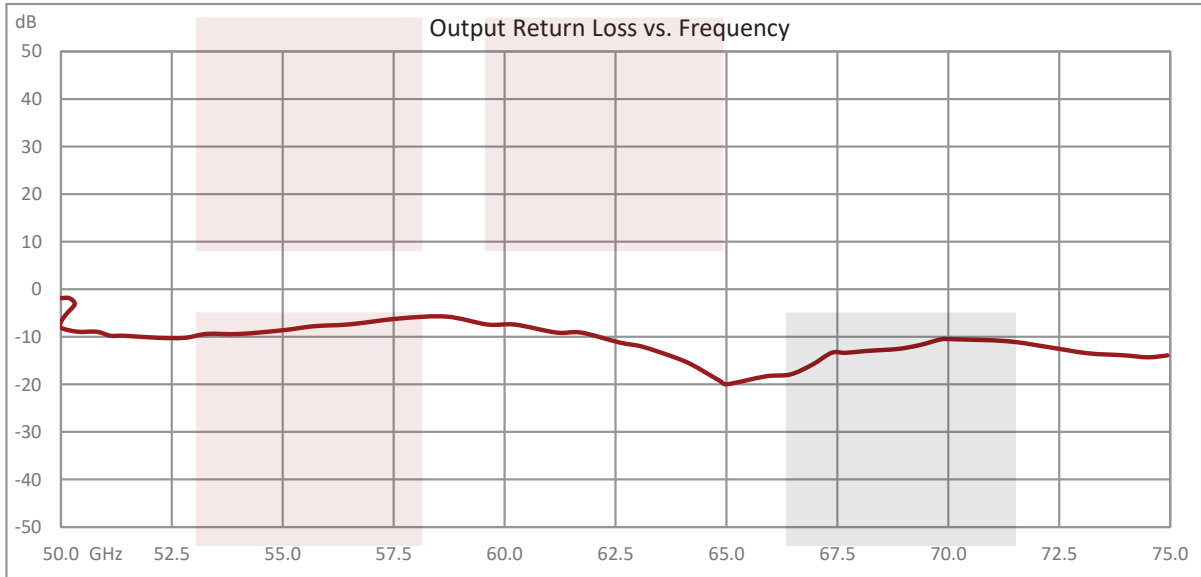
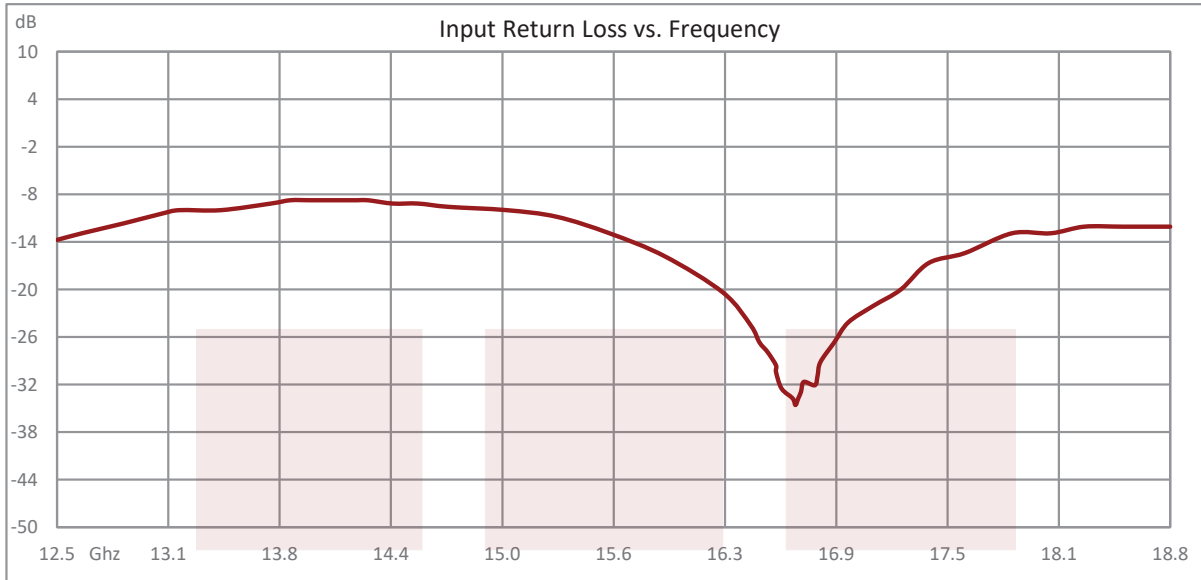
Plotted and Other Data

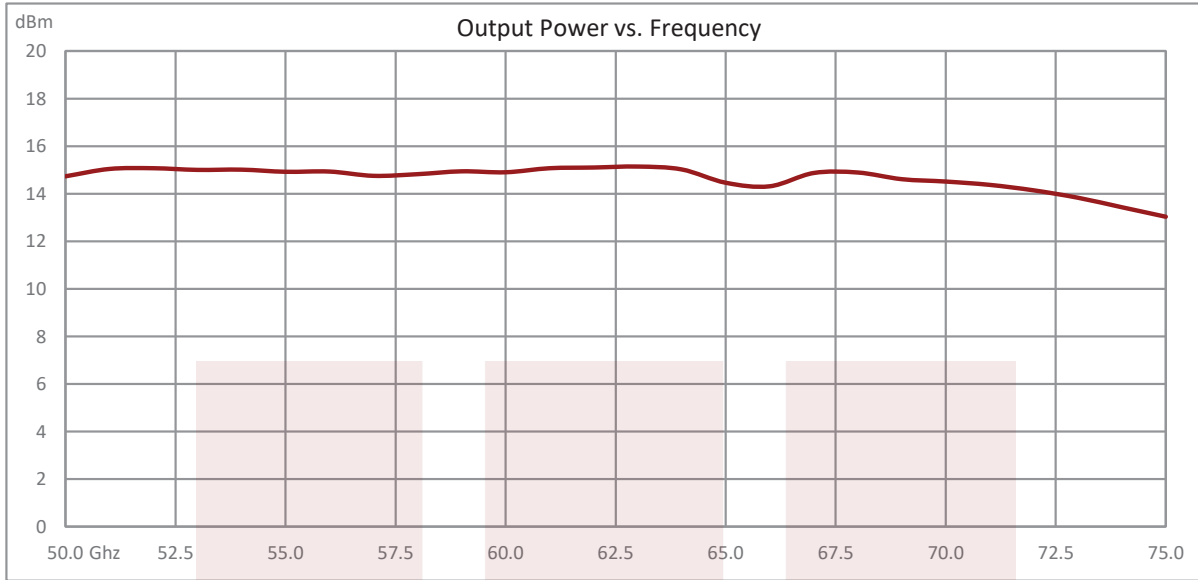
Notes:

Absolute Maximum Rating

Parameter	Rating
Operating Temperature	-40°C to +80°C
Storage Temperature	-40°C to +100°C
Total Power Dissipation	3W
Input Power (CW)	+10dBm
DC Operating Voltage	+12V

Typical Performance Data





50 GHz to 75 GHz V-Band 4x Active Frequency Multiplier, +15 dBm Pout, WR-15 Output with UG-385/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.

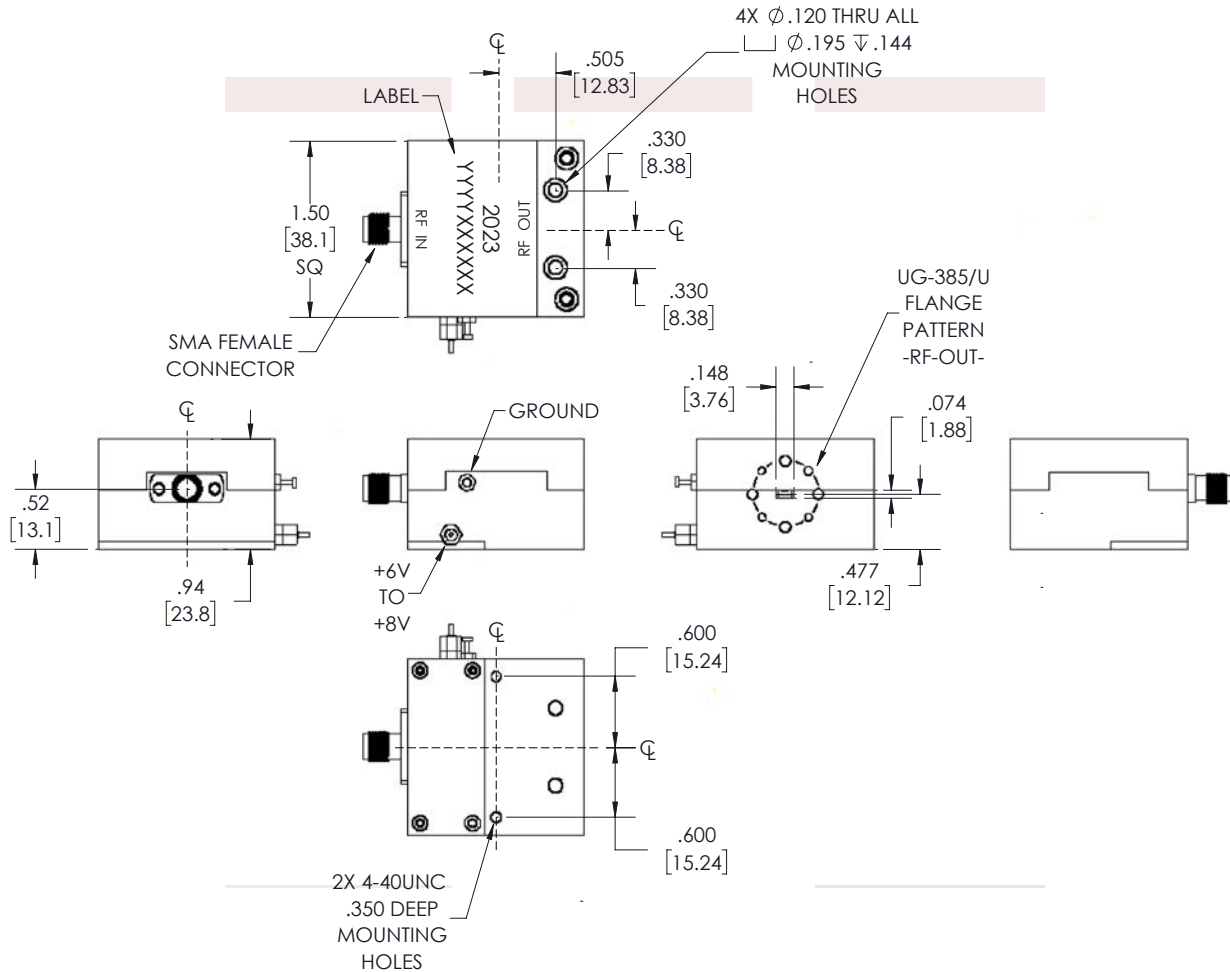
For additional information on this product, please click the following link: [50 GHz to 75 GHz V-Band 4x Active Frequency Multiplier, +15 dBm Pout, WR-15 Output with UG-385/U Flange, SMA Female Input FMFX2023](#)

URL: <https://www.fairviewmicrowave.com/wr-15-waveguide-4x-frequency-multiplier-module-v-band-50-ghz-to-75-ghz-output-frequency-+15-dbm-pout-input-sma-ug-385-u-flange-fmfx2023-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 = ± 0.02 [.51]		12 [305] < L ≤ 60 [1524] = +2 [51] / -0	
XXX = ± 0.005 [.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. FMFX2023	REV A
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