



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

Waveguide Frequency Multipliers Technical Data

PE88X2023

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
- Communicatoin Systems
- Radar Systems
- Microwave Radio Systems
- RF Wideband Front Ends
- Test Instrumentation

Description

The PE88X2023 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	Minimum	Typical	Maximum	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

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [WR-15 Waveguide 4x Active Frequency Multiplier, V-Band, 50 GHz to 75 GHz Output Frequency, +15 dBm Pout, Input SMA, UG-385/U Flange PE88X2023](#)



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Biasing Up and Power 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]
Height	0.937 in [23.8 mm]
Weight	0.2 lbs [90.72 g]

Body Material and Plating

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:

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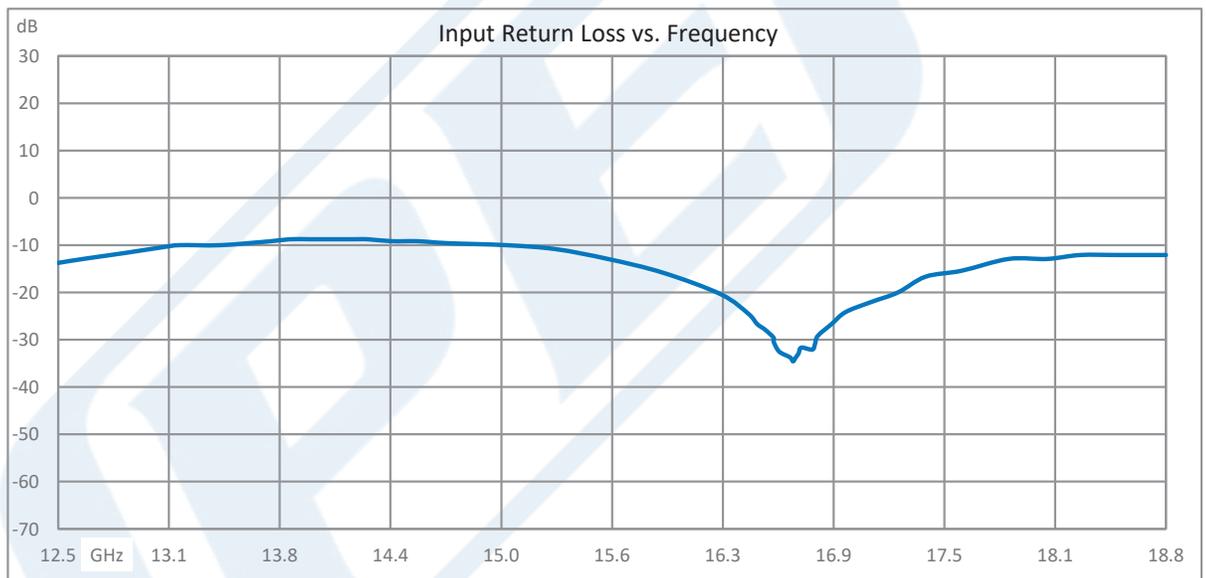
Waveguide Frequency Multipliers Technical Data

PE88X2023

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



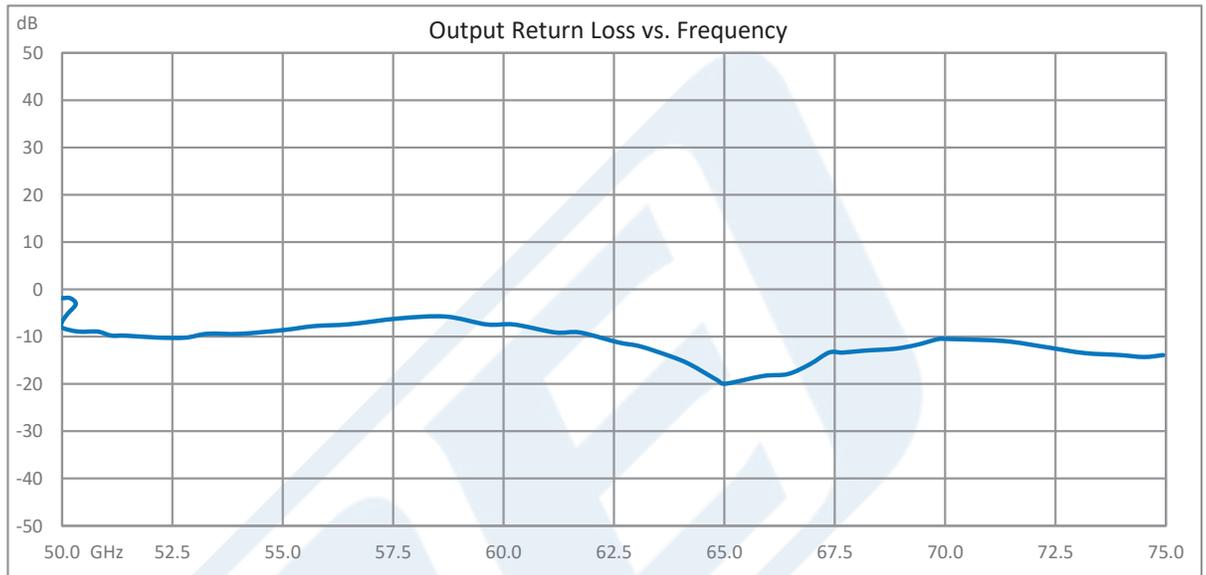
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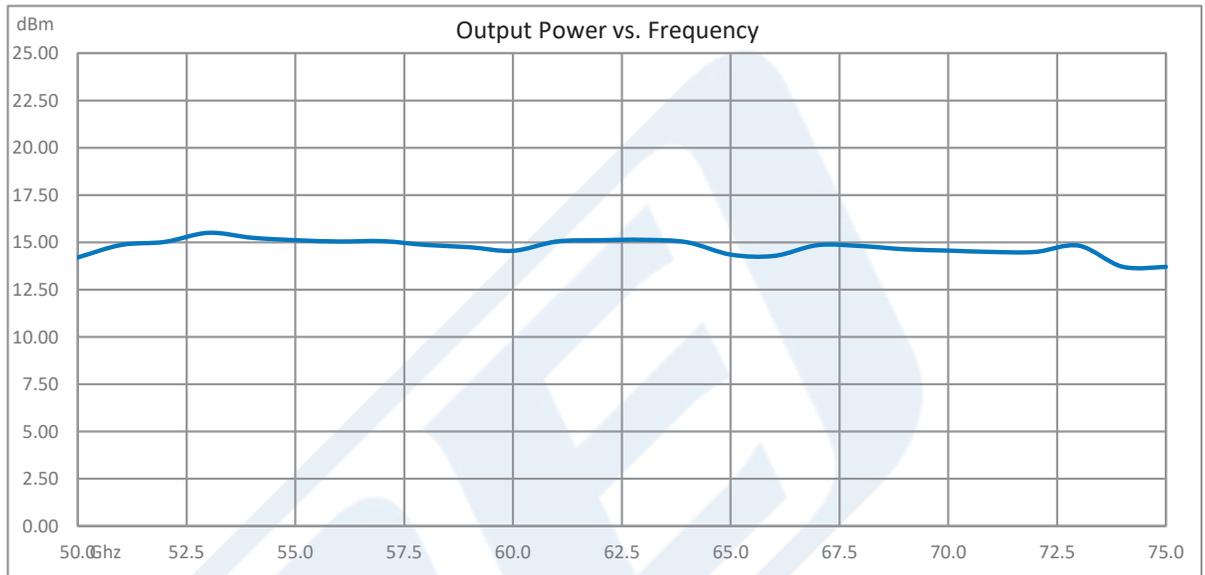
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WR-15 Waveguide 4x Active Frequency Multiplier, V-Band, 50 GHz to 75 GHz Output Frequency, +15 dBm Pout, Input SMA, UG-385/U Flange from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% availability and are part of the broadest selection in the industry.

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [WR-15 Waveguide 4x Active Frequency Multiplier, V-Band, 50 GHz to 75 GHz Output Frequency, +15 dBm Pout, Input SMA, UG-385/U Flange PE88X2023](https://www.pasternack.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-pe88x2023-p.aspx)

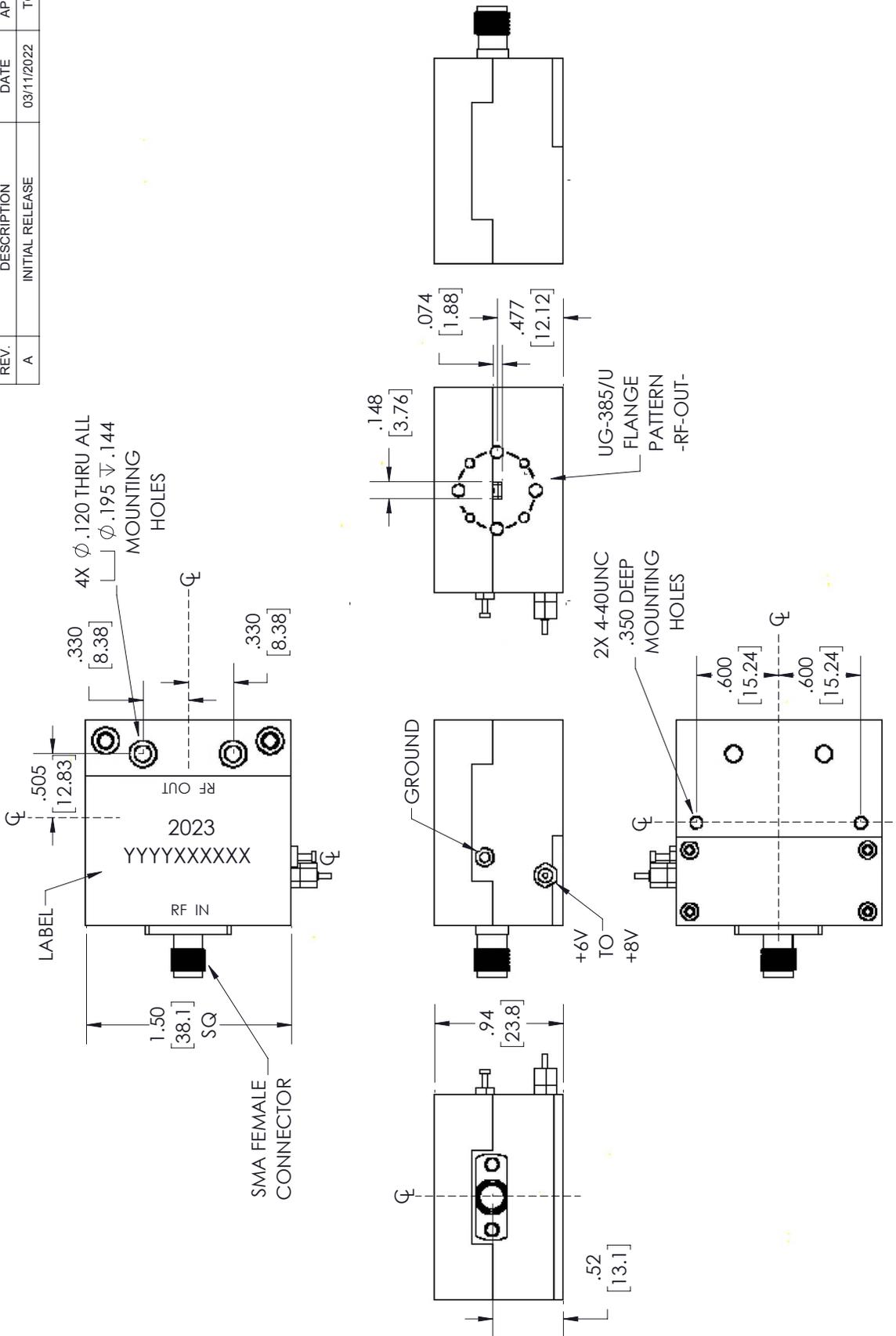
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PE88X2023 CAD Drawing

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



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Pasternack Enterprises, Inc.
P.O. Box 16759, Irvine, CA 92623.
Phone: 1.949.261.1920 | 1.866.727.8376
Fax: 1.949.261.7451
Website: www.pasternack.com
E-mail: sales@pasternack.com

THIRD-ANGLE PROJECTION

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SHEET 1 OF 1

SCALE N/A

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

ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

SIZE A CAGE CODE A DRAWN BY BPUCHASKI ITEM NO. PE88X2023