



WR-19 Waveguide 4x Active Frequency Multiplier,
U-Band, 40 GHz to 60 GHz Output Frequency,
+10 dBm Pout, Input SMA, UG383/U-M Flange

Waveguide Frequency Multipliers Technical Data

PE88X2022

Features

- WR-19 Waveguide 2x Active Frequency Multiplier
- Output Frequency 40 GHz to 60 GHz, U band
- Input Frequency 10 GHz to 15 GHz
- Pout +10 dBm typ
- Bias Voltage Range +6 Vdc to +8 Vdc
- DC current 150 mA typ
- 50 Ohm Design
- Input RF Connector SMA Female
- Output Waveguide WR-19 with UG-383/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 & Commercial Communications
- Research & Development
- Military Electronic Systems

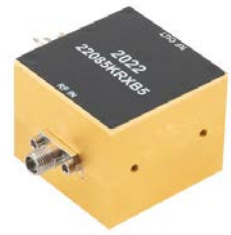
Description

The PE88X2022 is a WR-19 Waveguide 4x Active Frequency Multiplier that covers the full U frequency band from 40 GHz to 60 GHz with an input frequency band from 10 GHz to 15 GHz. Typical performance for the 50 ohm design includes +3 dBm input power, +10 dBm output power, and -15 dBc harmonics. Maximum input power (CW) is +10 dBm, and DC bias is +6 Vdc at 153 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-383/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	10		15	GHz
Output Frequency Range	40		60	GHz
Input Power	0	3	10	dBm
Output Power		10		dBm
DC Voltage	5	6	8	Volts
DC Current		153		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-19 Waveguide 4x Active Frequency Multiplier, U-Band, 40 GHz to 60 GHz Output Frequency, +10 dBm Pout, Input SMA, UG383/U-M Flange PE88X2022](#)



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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	1.213 in [30.81 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-19 Waveguide with UG-383/U-M 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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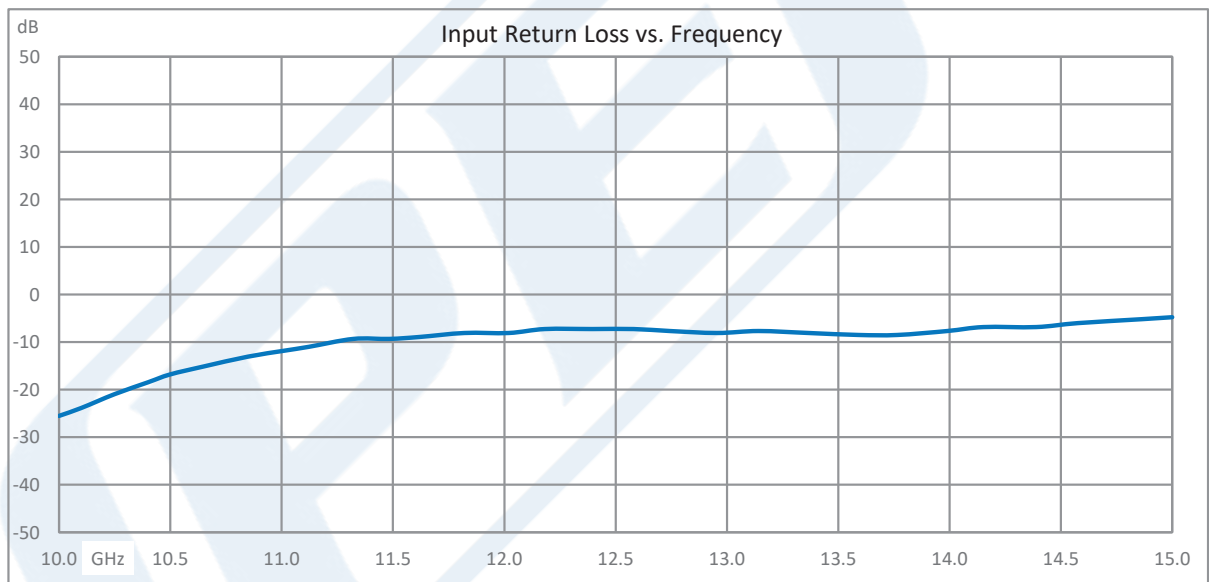
Waveguide Frequency Multipliers Technical Data

PE88X2022

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



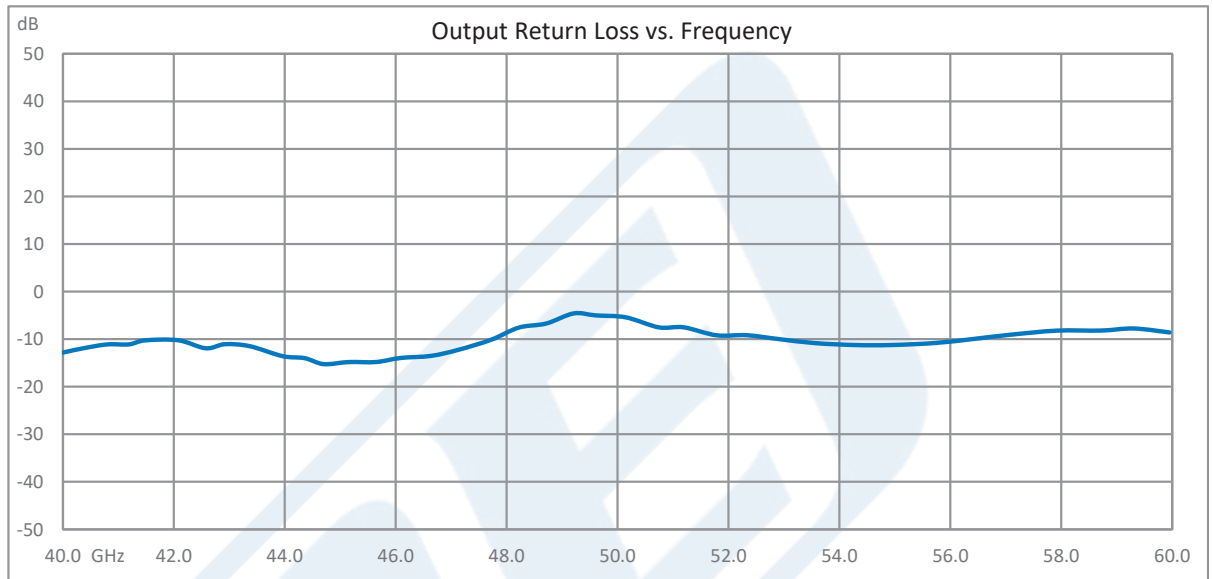
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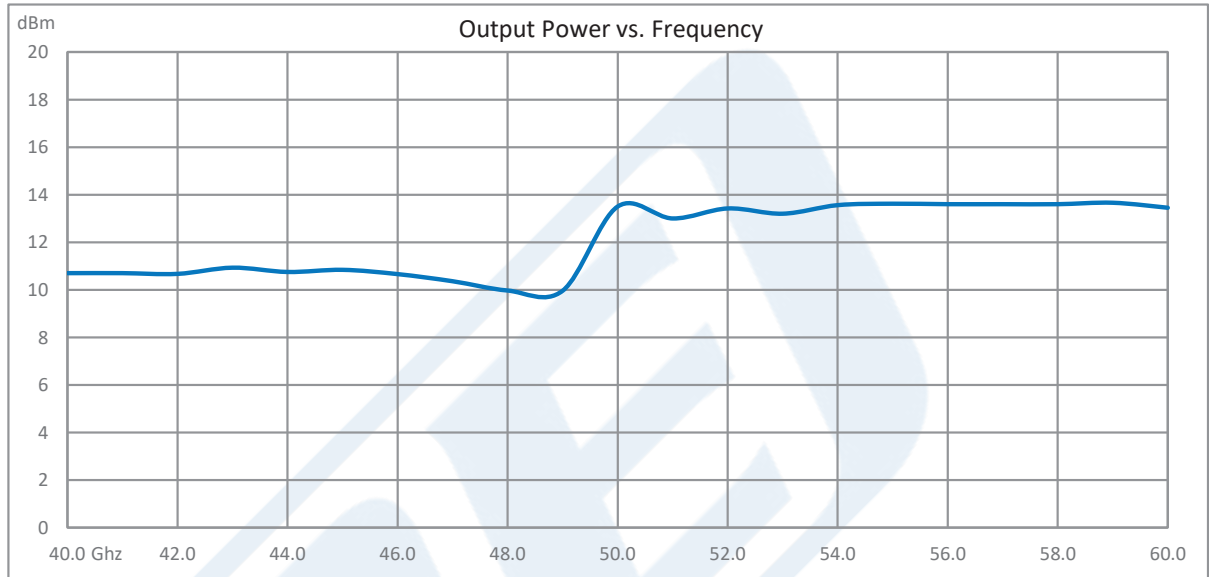
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WR-19 Waveguide 4x Active Frequency Multiplier, U-Band, 40 GHz to 60 GHz Output Frequency, +10 dBm Pout, Input SMA, UG383/U-M Flange from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% availability and are part of the broadest selection in the industry.

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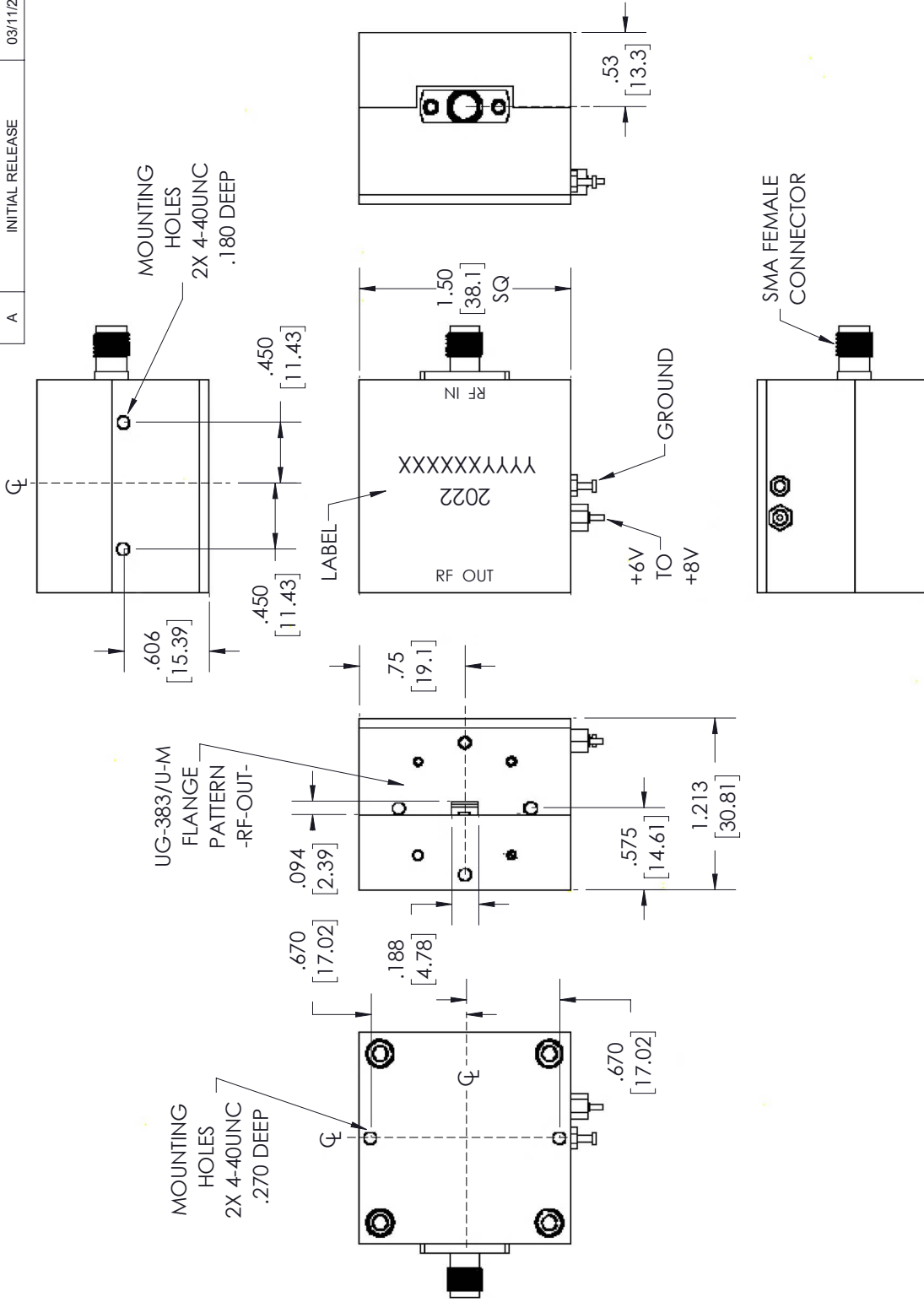
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PE88X2022 CAD Drawing

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



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

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

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THIRD-ANGLE PROJECTION

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SHEET 1 OF 1
SCALE N/A

SIZE A CAGE CODE 53919 DRAWN BY BPUCHASKI ITEM NO. PE88X2022 REV A