



WR-12 Waveguide Low Noise Amplifier, E Band, 60 GHz to 90 GHz, 30 dB Gain, 18 dBm P1dB, UG-387/U Flange

## Waveguide Low Noise Amplifiers - PEWGA3205

### Features

- WR-12 Waveguide Low Noise Amplifier
- UG-387/U Flange
- 60 GHz to 90 GHz
- E Band
- Small Signal Gain 30 dB typ
- Noise Figure 4.2 dB typ
- VSWR 1.9:1 typ
- Output P1dB +18 dBm typ
- Output Psat +22 dBm typ
- DC Bias +6V @ 325 mA typ
- Max RF Input Power (CW) +5 dBm
- 50 Ohm Design
- RF Input and Output Waveguide Flange UG-387/U
- 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
- Military Electronic Systems
- Research & Development

### Description

The PEWGA3205 is a WR-12 Waveguide Low Noise Amplifier, operating across the E Band from 60 GHz to 90 GHz. This 50 Ohm design exhibits impressive typical performance which includes 30 dB gain, 4.2 dB noise figure, and +18 dBm P1dB. Maximum RF input power (CW) is +5 dBm, and DC bias is +6 Vdc at 325 mA typ. The rugged and small size aluminum package design is gold plated and supports a UG-387/U waveguide flange pattern at RF input and output ports. Solder pins are used for DC bias voltage and ground. The module operates across a wide temperature range from -40°C to +80°C.

### Electrical Specifications (TA = +25°C, DC Voltage = 6Vdc, DC Current = 330mA)

Description	Minimum	Typical	Maximum	Units
Frequency	60		90	GHz
Small Signal Gain		30		dB
P1 dB		18		dBm
Psat		+22		dBm
Noise Figure		4.2	4.7	dB
VSWR		1.9:1		
RF Input Power			5	dBm
Operating DC Voltage <sup>1,4</sup>	6	6	12	Volts
Operating DC Current		330		mA
Input Power (CW)			5	dBm
Operating Temperature Range	-40		80	°C

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [WR-12 Waveguide Low Noise Amplifier, E Band, 60 GHz to 90 GHz, 30 dB Gain, 18 dBm P1dB, UG-387/U Flange PEWGA3205](#)



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### Electrical Specification Notes:

- 1.) DC Supply must be able to source at least 0.55A DC at startup
- 2.) Open and short-circuit loads are not recommended at the amplifier output.
- 3.) Ensure proper 50 Ohm load before turning the amplifier "ON".
- 4.) Reverse biasing will destroy the amplifier
- 5.) Do not put any foreign objects inside the waveguide. Warranty Void.

### 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	Aluminum, Gold
Design	
DC Bias Connector	
Flange	UG-387/U

### 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

### Environmental Specifications

#### Temperature

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

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

### Plotted and Other Data

Notes:

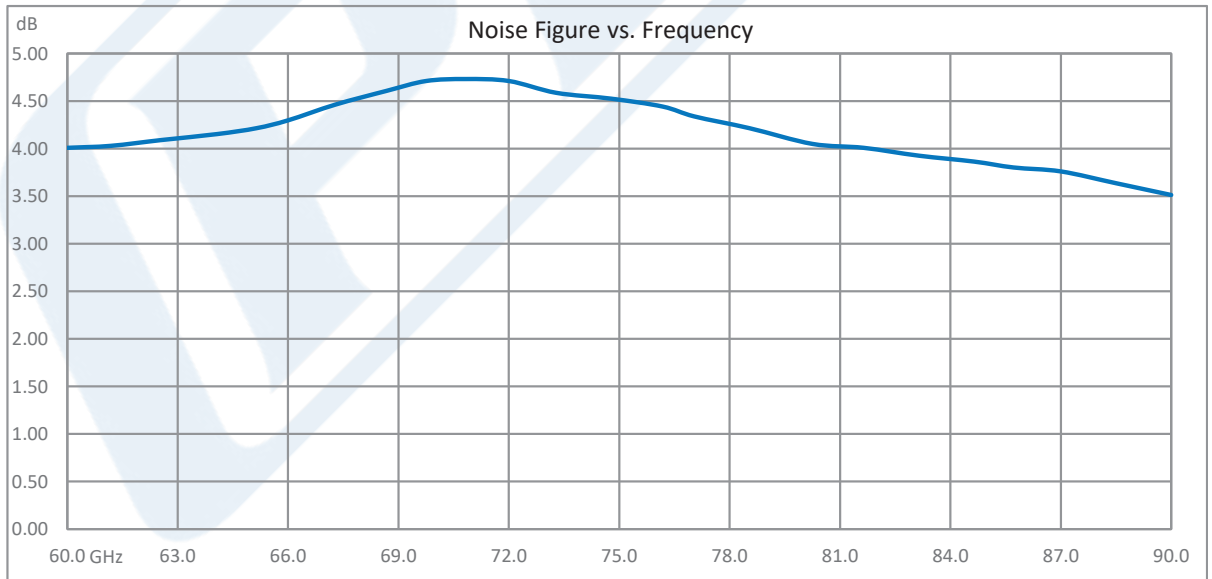
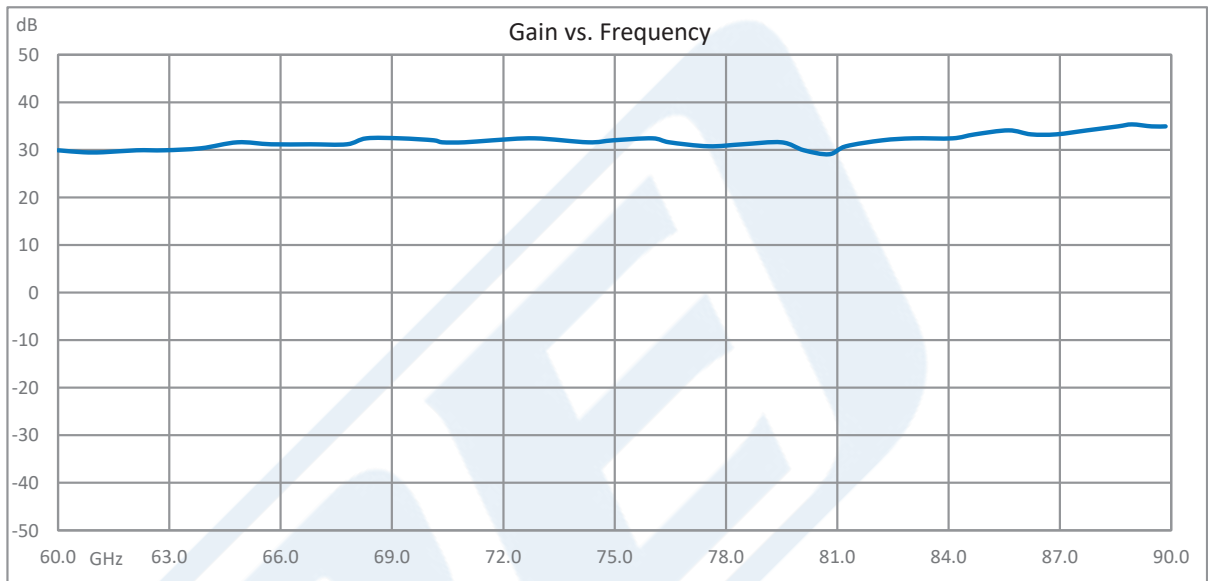
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Typical Performance Data



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## Waveguide Low Noise Amplifiers - PEWGA3205

### Absolute Maximum Rating

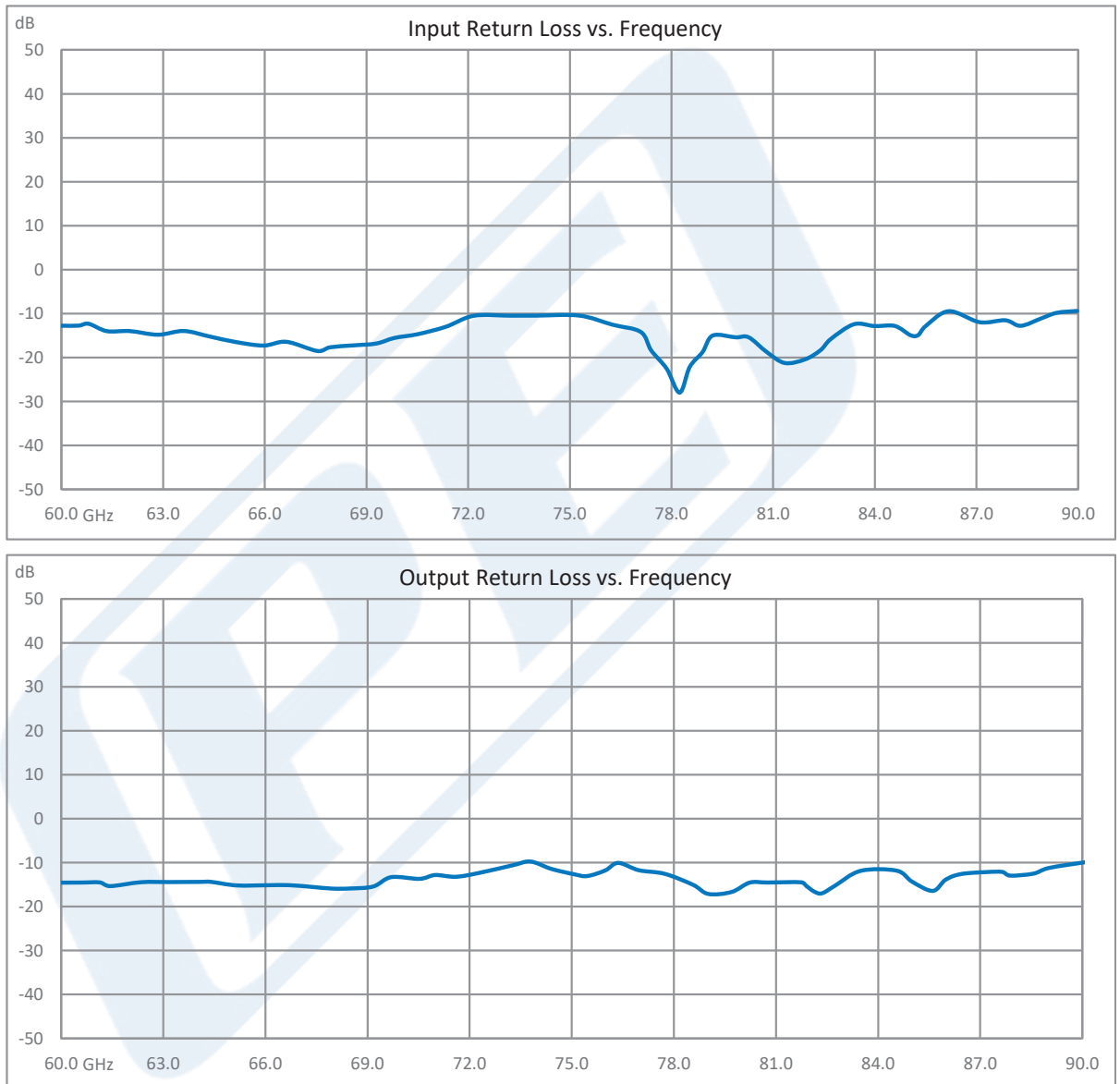
Parameter	Rating
Operating Temperature	-40°C to +80°C
Storage Temperature	-40°C to +100°C
Total Power Dissipation	4.5W
Input Power (CW)	+5dBm
DC Operating Voltage	+12Vdc

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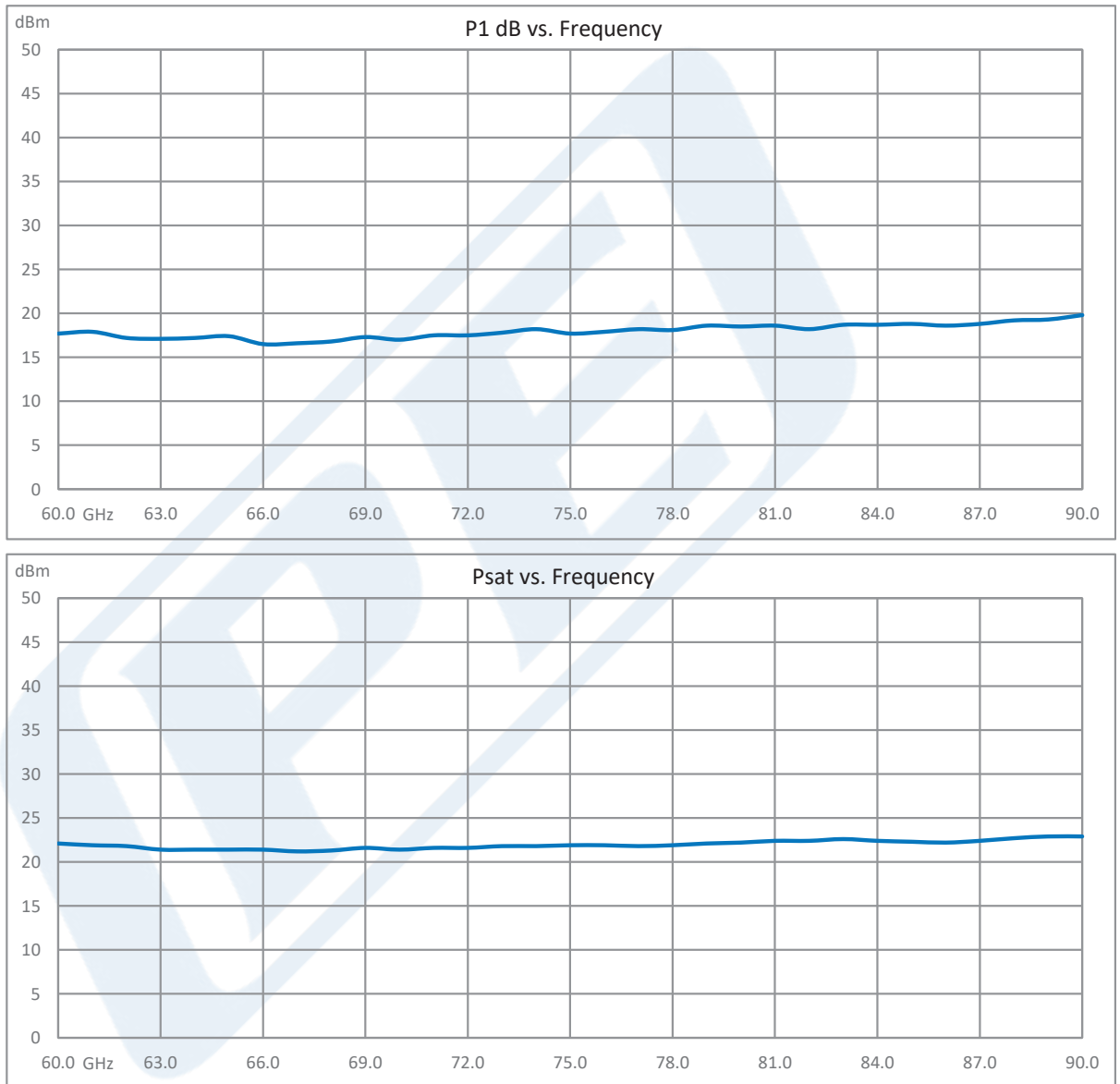


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## Waveguide Low Noise Amplifiers - PEWGA3205

WR-12 Waveguide Low Noise Amplifier, E Band, 60 GHz to 90 GHz, 30 dB Gain, 18 dBm P1dB, UG-387/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.

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URL: <https://www.pasternack.com/wr-12-waveguide-low-noise-amplifier-e-band-90-ghz-pewga3205-p.aspx>

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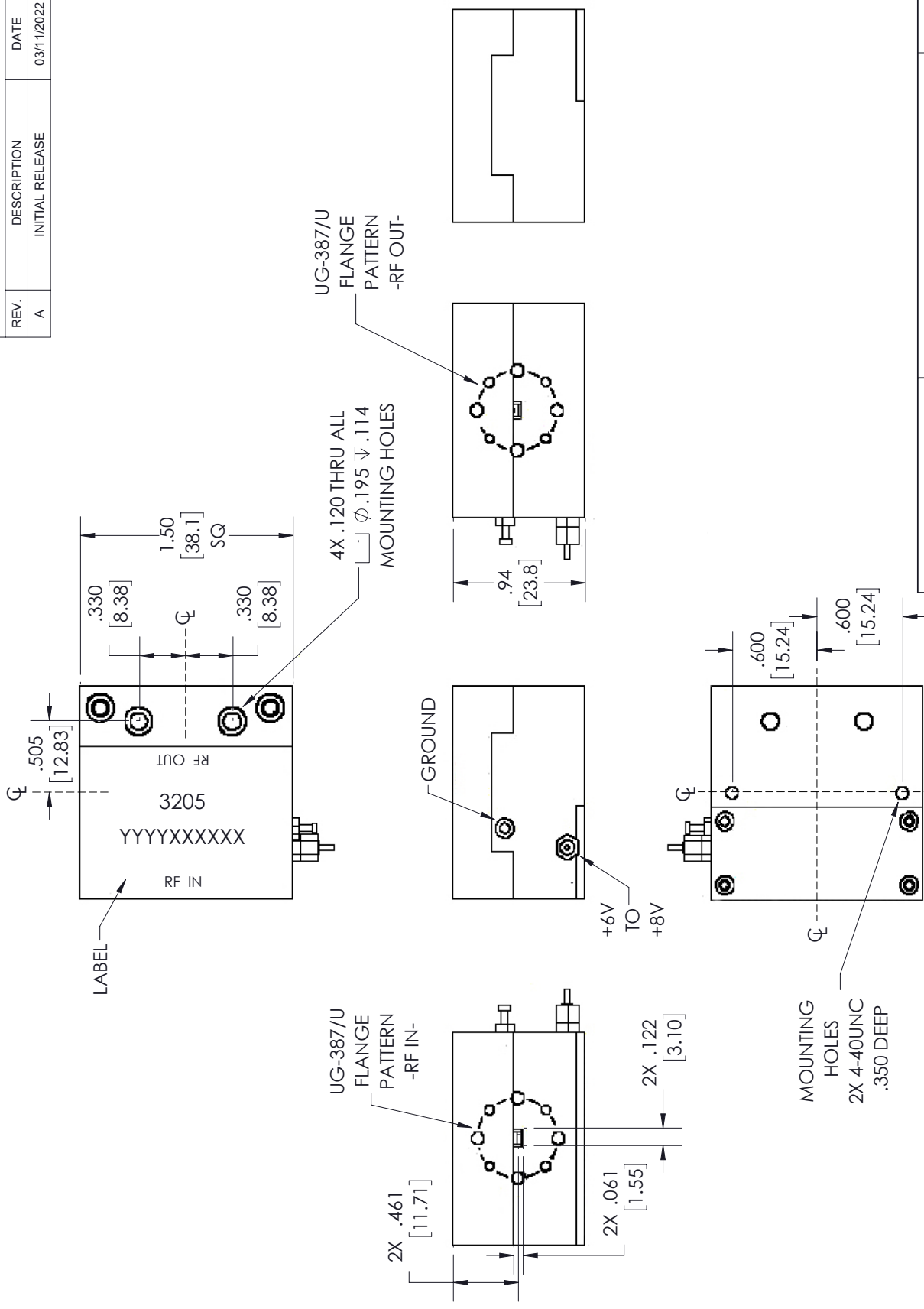
The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Pasternack reserves the right to make such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



# PEWGA3205 CAD Drawing

WR-12 Waveguide Low Noise Amplifier, E Band, 60 GHz to 90 GHz, 30 dB Gain, 18 dBm P1dB, UG-387/U Flange

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 ±.162
.XX = ±.02 [511]	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% / -0

**ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.**

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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**

SHEET 1 OF 1  
 SCALE N/A

REV	A
ITEM NO.	PEWGA3205
DRAWN BY	BPUCHASKI
CAGE CODE	53919

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