



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:

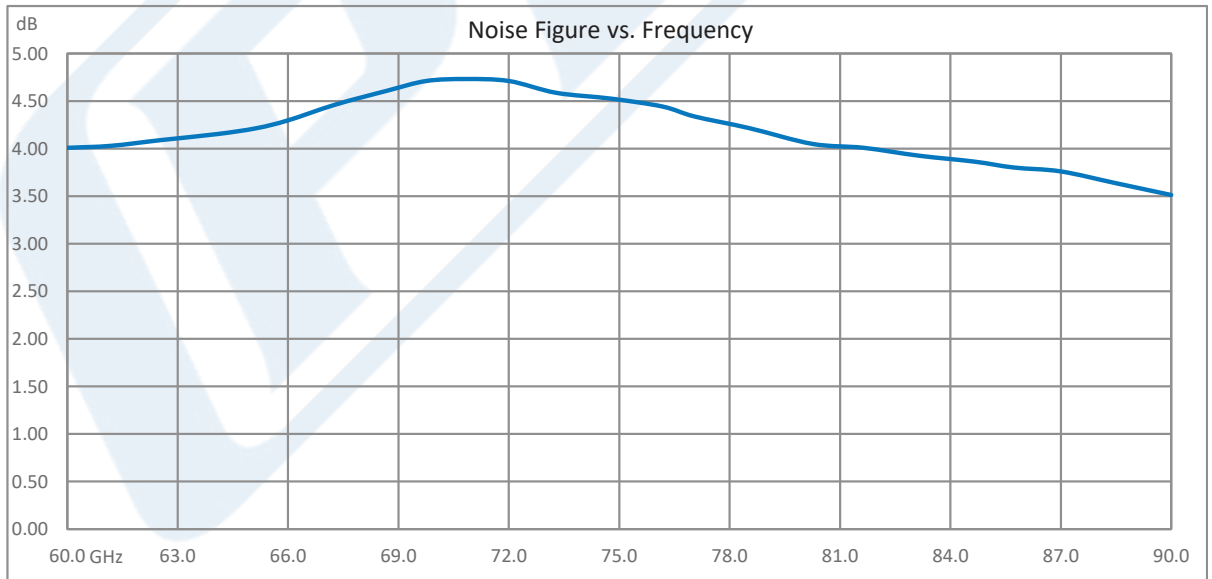
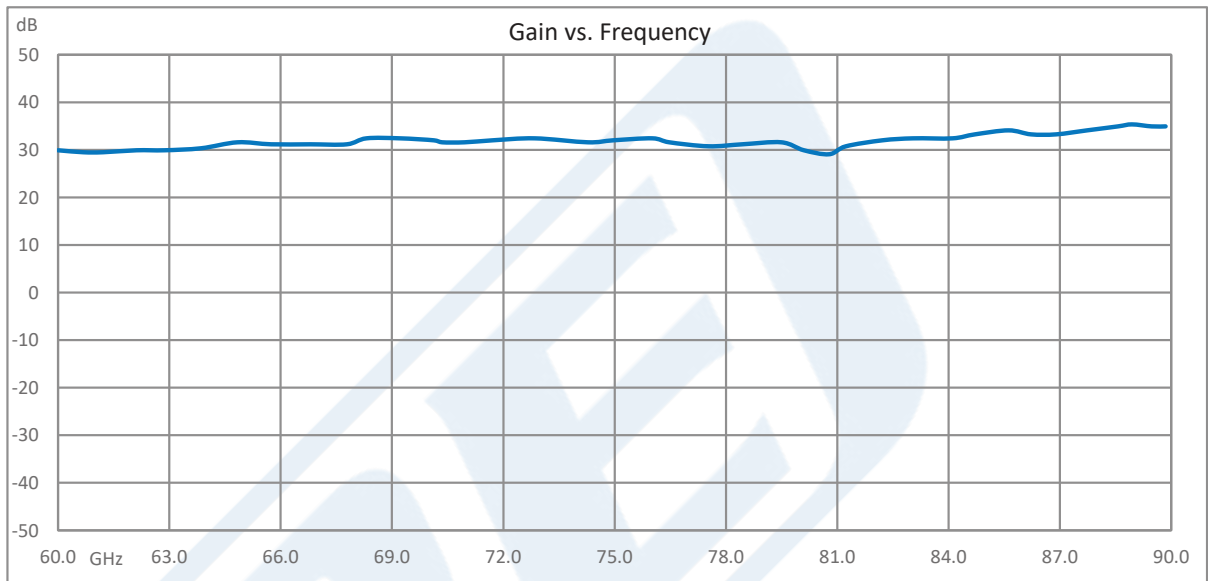
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Typical Performance Data



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## Waveguide Low Noise Amplifiers - PEWGA3205

### Absolute Maximum Rating

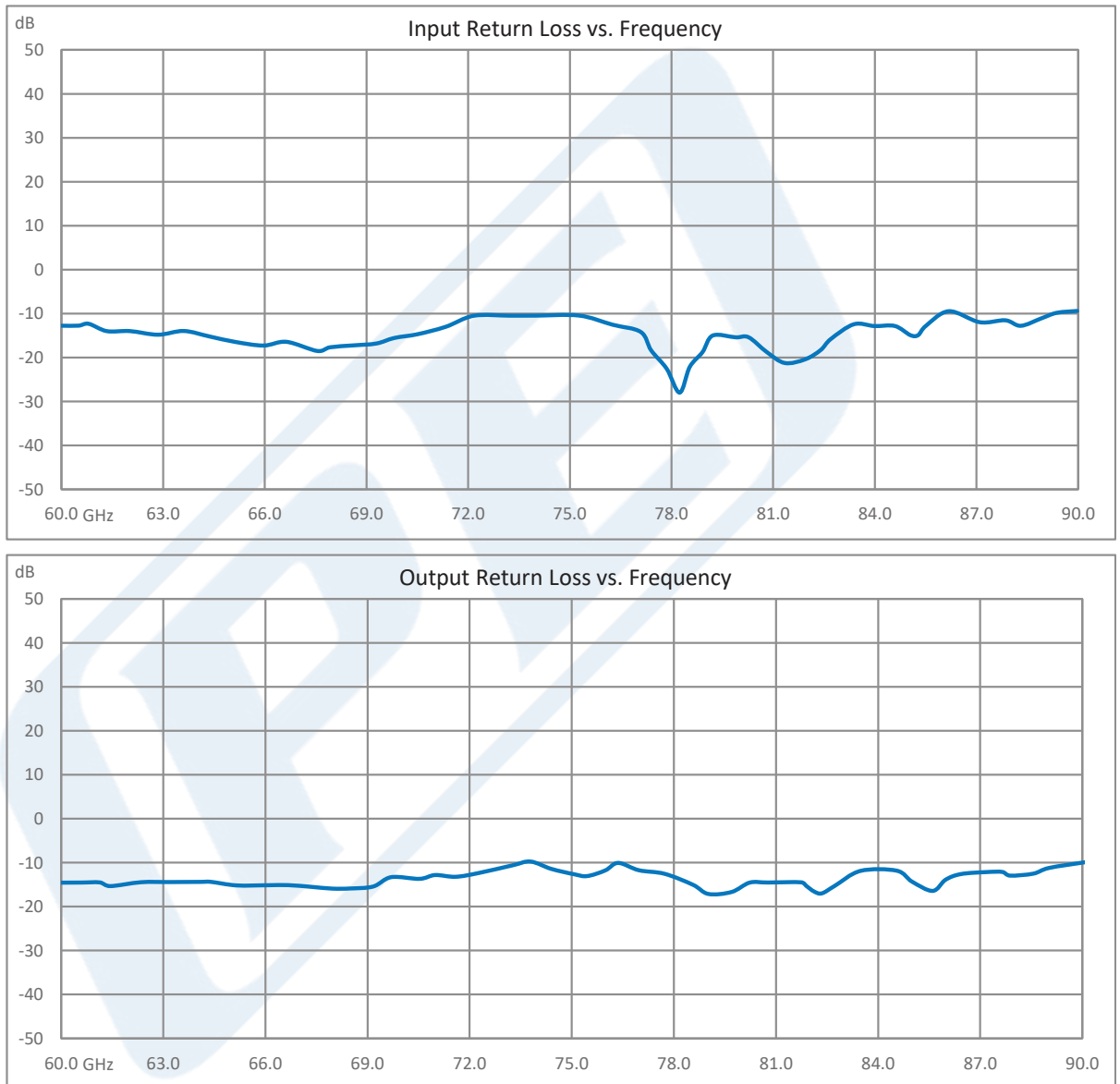
Parameter	Rating
Operating Temperature	-40°C to +80°C
Storage Temperature	-40°C to +100°C
Total Power Dissipation	4.5W
Input Power (CW)	+5dBm
DC Operating Voltage	+12Vdc

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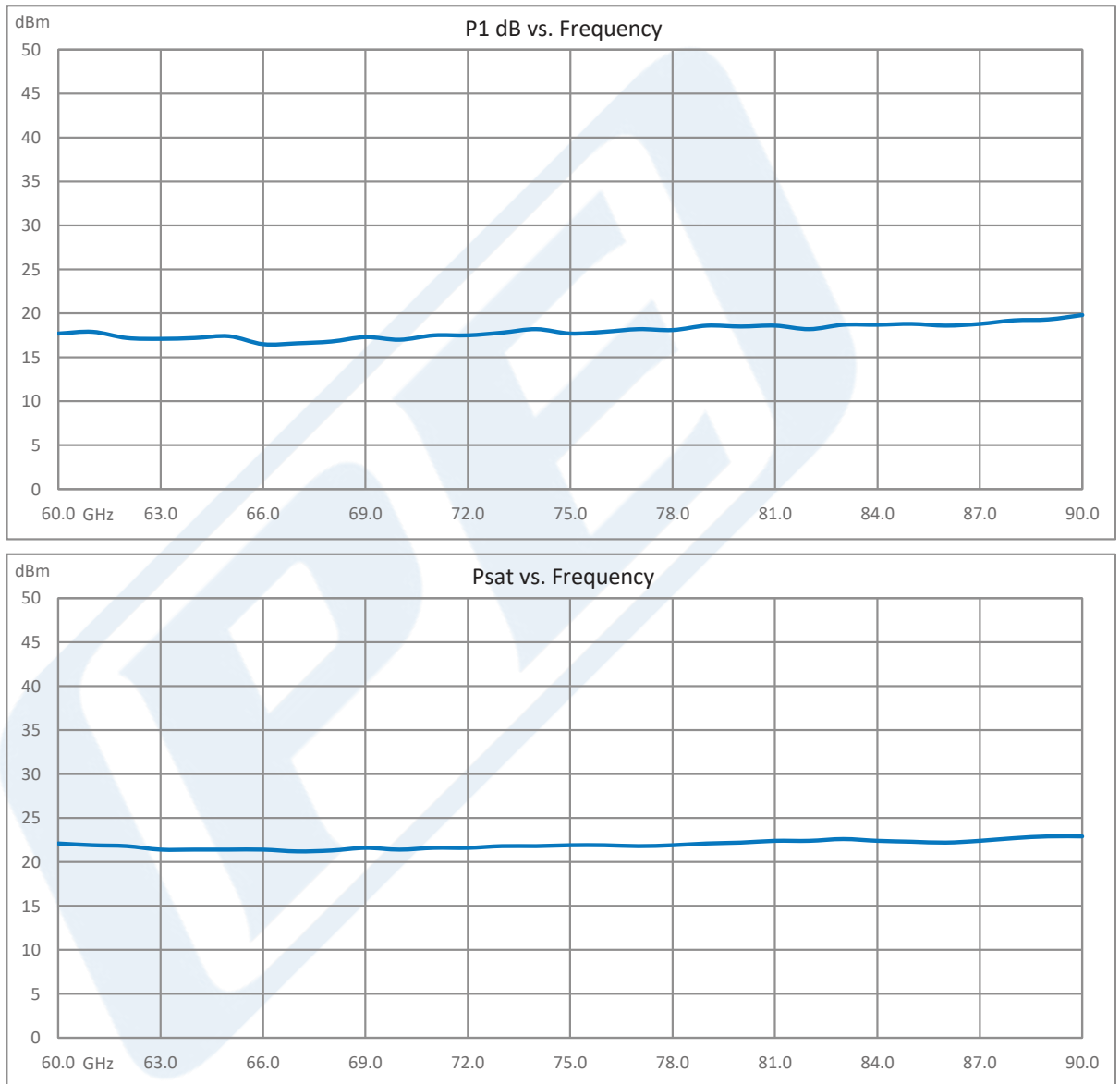


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## Waveguide Low Noise Amplifiers - PEWGA3205

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>

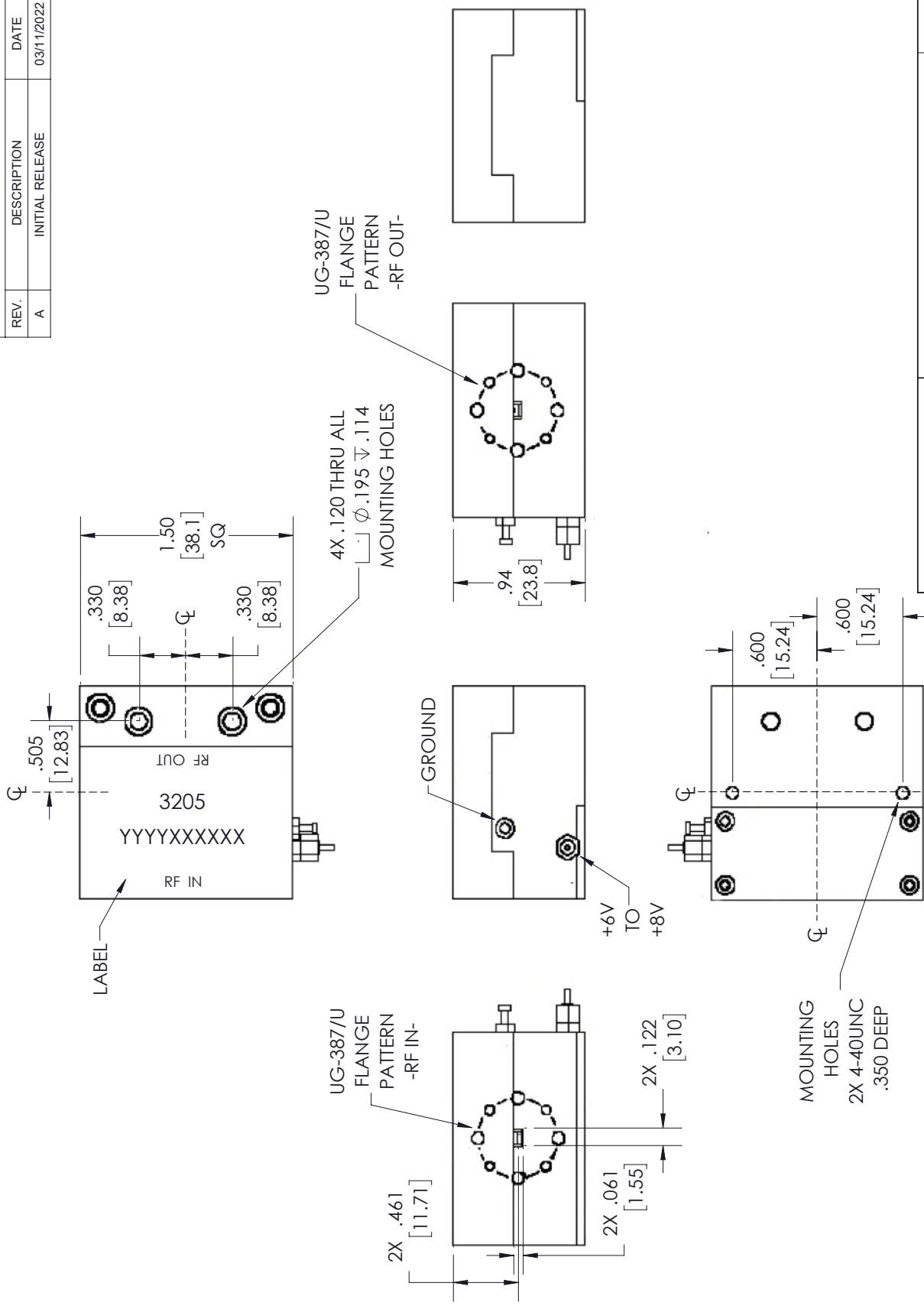
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# PEWGA3205 CAD Drawing

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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	±.162
.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.**

**THIRD-ANGLE PROJECTION**

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SHEET 1 OF 1  
SCALE N/A

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

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