



Mechanically Tuned Gunn Diode Oscillator: WR-42, CF: 24.125GHz, Output Power: +12.5dBm, Tuning Range: +/- 1GHz, UG-595/U

Waveguide Gunn Oscillators Technical Data Sheet

PEWGN1012

Features

- WR-42 Waveguide Gunn Diode Oscillator
- 24.125 GHz with a Tuning Range of +/- 1 GHz
- Pout: +12.5 dBm typ
- Harmonics: -20 dBc typ
- Phase Noise: -98 dBc/Hz typ at 100 KHz offset
- Frequency Stability: -0.8 MHz/°C max
- Power Stability: -0.02 dB/°C max
- Bias Voltage: +5 Vdc
- DC Current: 350 mA
- Waveguide Flange UG-599/U
- -40°C to +85°C Operating Temperature
- 50 Ohm Design
- Mechanical Tuning Screw
- Rugged Design meets MIL-STD-202 Test Conditions

Applications

- Aerospace & Defense
- Test & Measurement
- Microwave Radio Systems
- Doppler Sensors
- Tranceivers
- Military & Commercial Communication Systems
- Research & Development

Description

The PEWGN1012 is a Waveguide Gunn Diode Oscillator that operates in K band with a center frequency of 24.125 GHz and wide tuning range of +/- 1 GHz by use of a mechanical tuning screw. This Indium Phosphate (InP) Gunn Diode design yields higher output power, higher efficiency, and lower AM noise than GaAs counterparts. Impressive performance at 50 ohms includes an output power level of +12.5 dBm min with a harmonic response of -20 dBc typ. Additional performance includes Phase Noise of -98 dBc/Hz typical at 100 kHz offset, Frequency Stability of -0.8 MHz/°C max, and Power Stability of -0.02 dB/°C max. Nominal bias voltage is +5 Vdc at 350 mA current, and the operational temperature range is -40°C to +85°C. The compact package supports a WR-42 waveguide size with a UG-595/U flange. Also, this highly reliable oscillator module is designed to meet a variety of MIL-STD-202 test conditions including shock, vibration, altitude, and humidity.

Electrical Specifications (TA = +25°C, Bias Voltage= 5V, Bias Current= 350mA)

Description	Minimum	Typical	Maximum	Units
Center Frequency		24.125		GHz
Tuning Range	±500	±1000		MHz
Output Power	10	12.5		dBm
Frequency Stability			-0.8	MHz/deg C
Power Stability			-0.02	dB/deg C
Phase Noise @ 100kHz Offset		-98		dBc/Hz
Harmonics		-20		dBc
Bias Voltage		5	6	V
Bias Current		350		mA

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [Mechanically Tuned Gunn Diode Oscillator: WR-42, CF: 24.125GHz, Output Power: +12.5dBm, Tuning Range: +/- 1GHz, UG-595/U PEWGN1012](#)



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Mechanical Specifications

Size

Length	0.88 in [22.35 mm]
Width	0.88 in [22.35 mm]
Height	1.07 in [27.18 mm]
Weight	0.062 lbs [28.12 g]

Configuration

Waveguide Size	WR-42
Flange	UG-595/U
Bias Connector	Pin

Environmental Specifications

Temperature

Operating Range	-40 to 85 deg C
Storage Range	-40 to 100 deg C

Environment

Humidity	MIL-STD-202, Method 103B, Condition B
Shock	MIL-STD-202F, Method 213B, Condition B
Vibration	MIL-STD-202F, Method 204D, Condition B
Altitude	MIL-STD-202F, Method 105C, Condition B

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

Plotted and Other Data

Notes:

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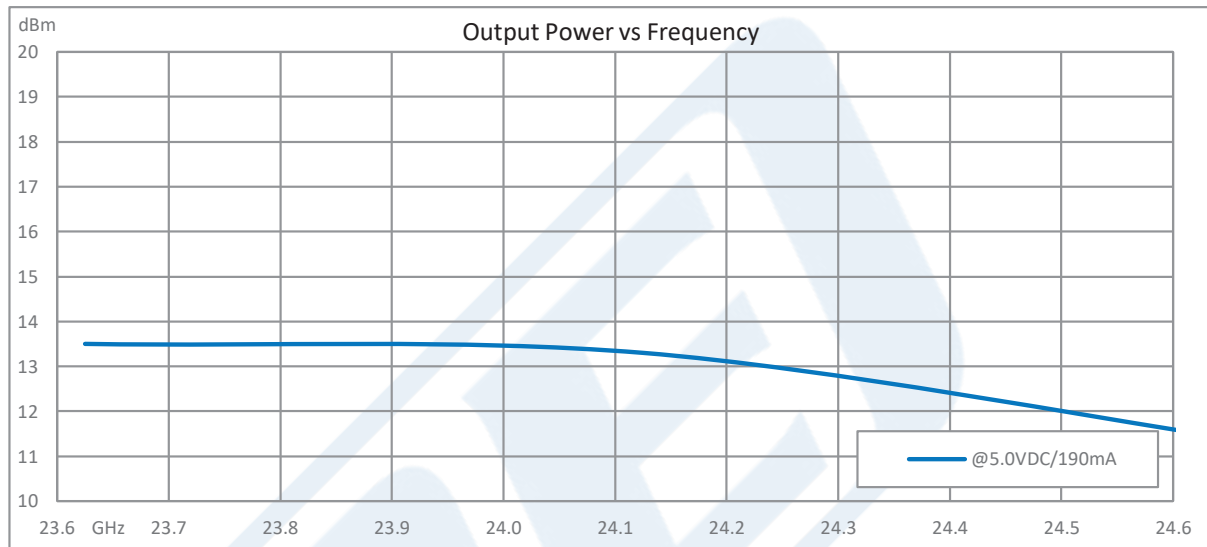


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Typical Performance Data



Mechanically Tuned Gunn Diode Oscillator: WR-42, CF: 24.125GHz, Output Power: +12.5dBm, Tuning Range: +/- 1GHz, UG-595/U 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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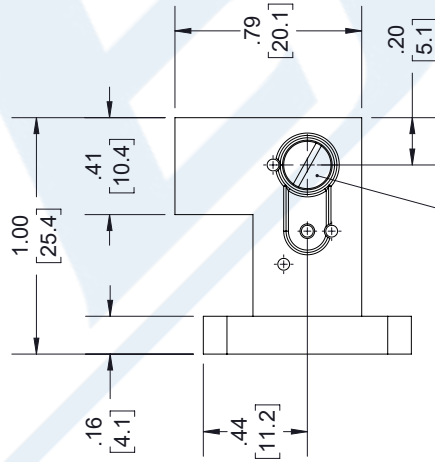
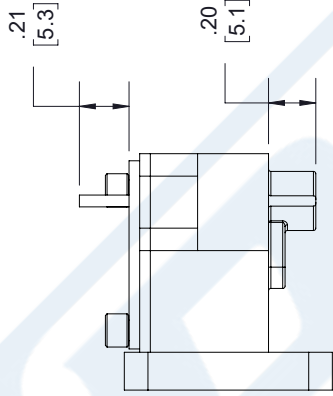
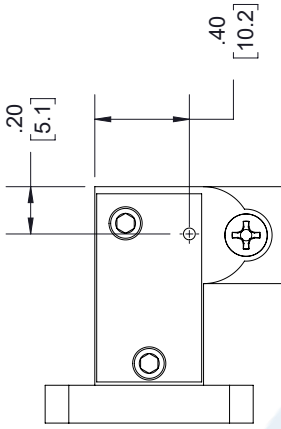
URL: <https://www.pasternack.com/waveguide-gunn-oscillator-35-ghz-tuning-range-3-ghz-pewgn1000-p.aspx>

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.

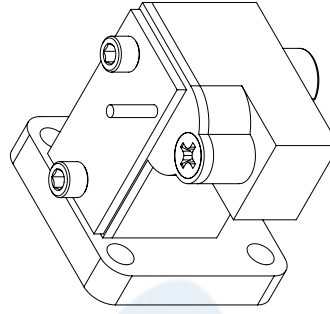
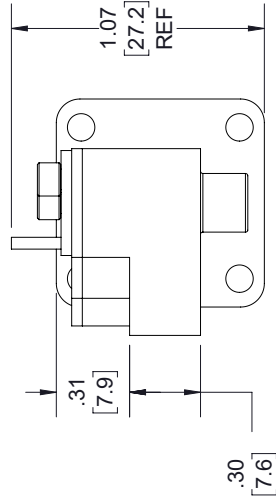
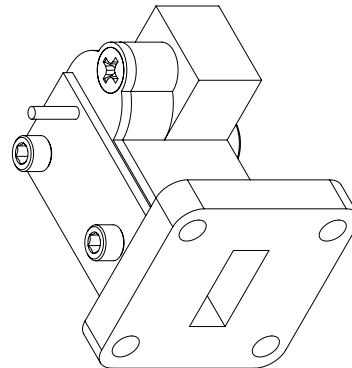
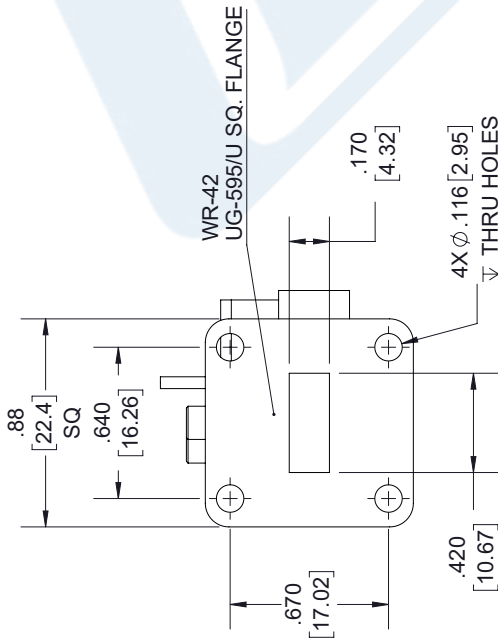
PEWGN1012 CAD Drawing

Mechanically Tuned Gunn Diode Oscillator: WR-42, CF: 24.125GHz,
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REVISIONS		
REV.	DESCRIPTION	DATE
A	INITIAL RELEASE	5/19/2021
		APPROVED
		T. GALLA



FREQUENCY SET



THIRD-ANGLE PROJECTION

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SHEET 1 OF 1

SCALE N/A

REV A

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ITEM NO PEWGN1012

SIZE A CAGE CODE 53919 DRAWN BY K.DANG

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.