

WR-90 Waveguide Gunn Oscillator at a 9.375 GHz Center Frequency with 250 MHz Tuning Range and -105 dBc/Hz Phase Noise, X Band, UG-39/U

The FMWGN1013 is a Waveguide Gunn Diode Oscillator that operates in X band with a center frequency of 9.375 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 +18.5 dBm typical with a harmonic response of -20 dBc typical. Additional typical performance includes Phase Noise of -105 dBc/Hz at 100 kHz offset, Frequency Stability of -0.1 MHz/°C, and Power Stability of -0.01 dB/°C. Nominal bias voltage is +8.5 Vdc at 200 mA current, and the operational temperature range is -40°C to +85°C. The compact package supports a WR-90 waveguide size with a UG-39/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= 8.5V, Bias Current= 200mA)

Description	Min	Typ	Max	Units
Center Frequency		9.375		GHz
Tuning Range	±0	±250		kHz
Output Power	10	18.5		dBm
Frequency Stability		-0.1		MHz/deg C
Power Stability		-0.01		dB/deg C
Phase Noise @100kHz Offset		-105		dBc/Hz
Harmonics		-20		dBc
Bias Voltage		8.5	10	V
Bias Current		200		mA

Mechanical Specifications

Size	
Length	1.62 in [41.15 mm]
Width	1.62 in [41.15 mm]
Height	0.7 in [17.78 mm]
Weight	0.25 lbs [113.4 g]

Configuration

Waveguide Size	WR-90
Flange	UG-39/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



Features:

- WR-90 Waveguide Gunn Diode Oscillator
- 9.375 GHz with a Tuning Range of +/- 250 MHz
- Pout: +18.5 dBm typ
- Harmonics: -20 dBc typ
- Phase Noise: -105 dBc/Hz typ at 100 KHz offset
- Frequency Stability: -0.1 MHz/°C
- Power Stability: -0.01 dB/°C
- Bias Voltage: +8.5 Vdc
- DC Current: 200 mA
- Waveguide Flange UG-39/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

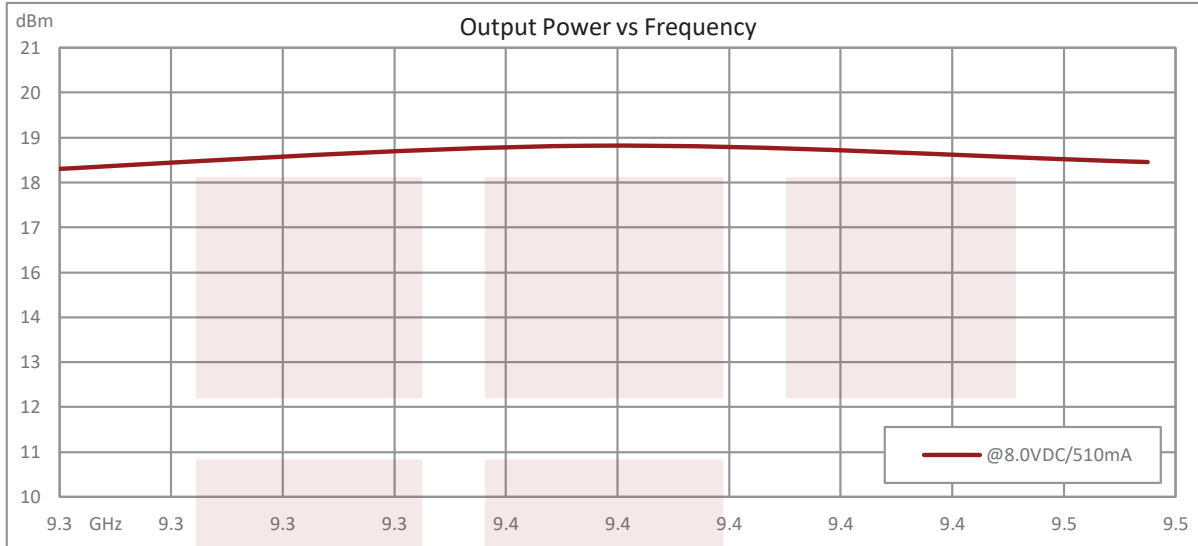
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Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

Notes:

Typical Performance Data



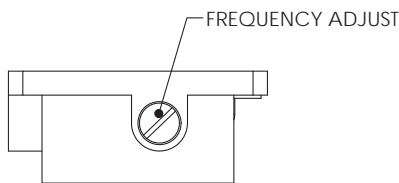
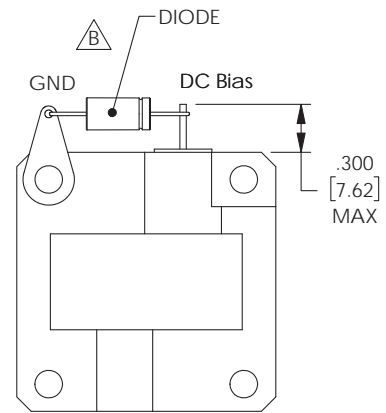
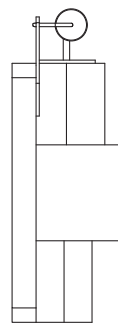
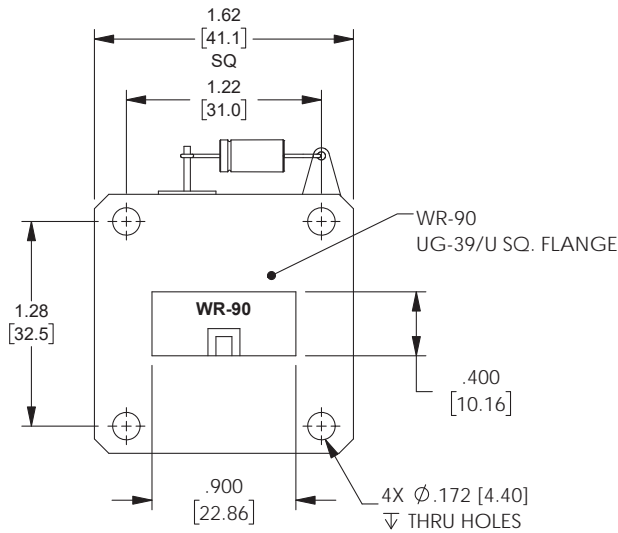
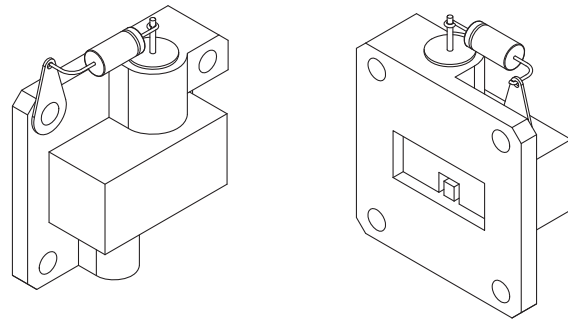
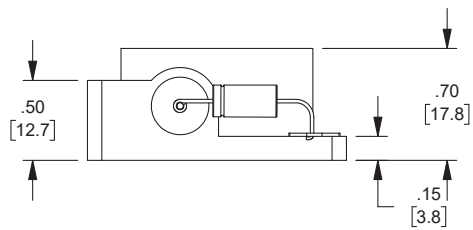
WR-90 Waveguide Gunn Oscillator at a 9.375 GHz Center Frequency with 250 MHz Tuning Range and -105 dBc/Hz Phase Noise, X Band, UG-39/U from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [WR-90 Waveguide Gunn Oscillator at a 9.375 GHz Center Frequency with 250 MHz Tuning Range and -105 dBc/Hz Phase Noise, X Band, UG-39/U FMWGN1013](#)

URL: <https://www.fairviewmicrowave.com/wr90-waveguide-gunn-oscillator-9.375-ghz-center-frequency-band-ug39-fmw-gn1013-p.aspx>

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
B	PCR FMWGN1013 20220617	06/27/2022	TGALLA



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TITLE
WR-90 Waveguide Gunn Oscillator at a 9.375 GHz Center Frequency with 250 MHz Tuning Range and -105 dBc/Hz Phase Noise, X Band, UG-39/U

UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES DIMENSIONS IN [] ARE MILLIMETERS		THIRD-ANGLE PROJECTION	
TOLERANCES:		CABLE LENGTH (L) TOLERANCES:	
.X = ± 2 [5.08] FRACTIONS	12 [305] < L ≤ 60 [1524] = +2 [51] / -0	<p>THE INFORMATION AND DESIGN IN THIS DOCUMENT IS THE PROPERTY OF FAIRVIEW MICROWAVE CORPORATION. ALL RIGHTS RESERVED.</p>	
.XX = ± .02 [.51] ± 1/32	60 [1524] < L ≤ 120 [3048] = +4 [102] / -0		
.XXX = ± .005 [.13] ANGLES ± 1°	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 3FKR5	DRAWN BY KDANG	ITEM NO. FMWGN1013
SHEET 1 OF 1			SCALE N/A
REV B			

T-Rev.D