Fairview Microwave
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FMWGN1012
DATA SHEET

WR-42 Waveguide Gunn Oscillator at a 24.125 GHz Center Frequency with 1 GHz Tuning Range and -98 dBc/Hz Phase Noise, K Band, UG-595/U

The FMWGN1012 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 mechancial 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	Min	Typ	Max	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

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	0.0625 lbs [28.35 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

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

Fairview Microwave
301 Leora Ln., Suite 100
Lewisville, TX 75056
Tel: 1-800-715-4396 / (972) 649-6678
Fax: (972) 649-6689
www.fairviewmicrowave.com
sales@fairviewmicrowave.com

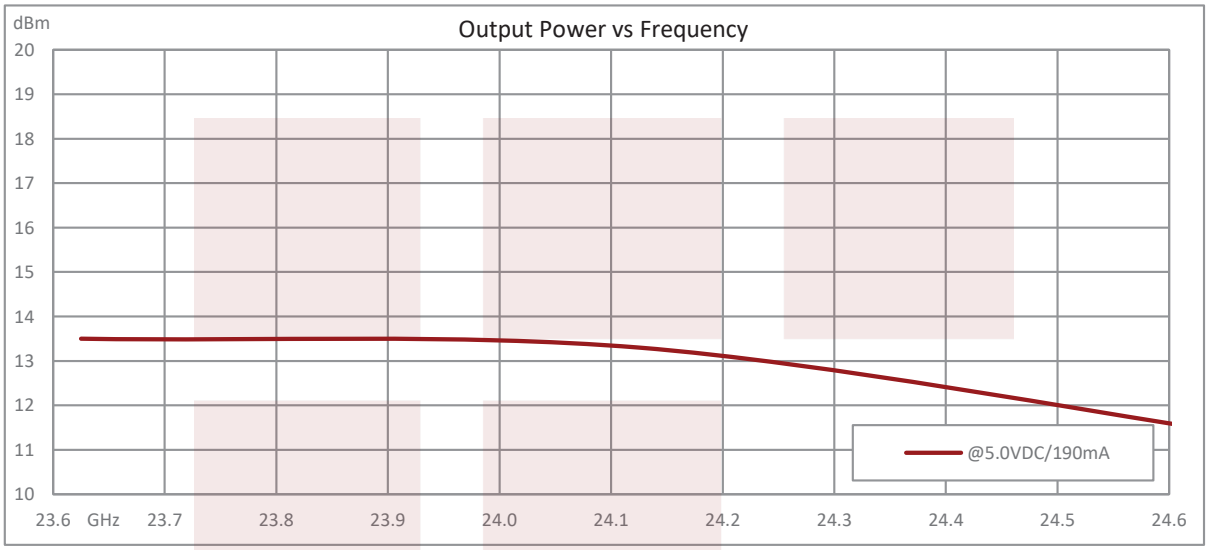
Altitude	MIL-STD-202F, Method 105C, Condition B

Compliance Certifications (see product page for current document)

Plotted and Other Data

Notes:

Typical Performance Data

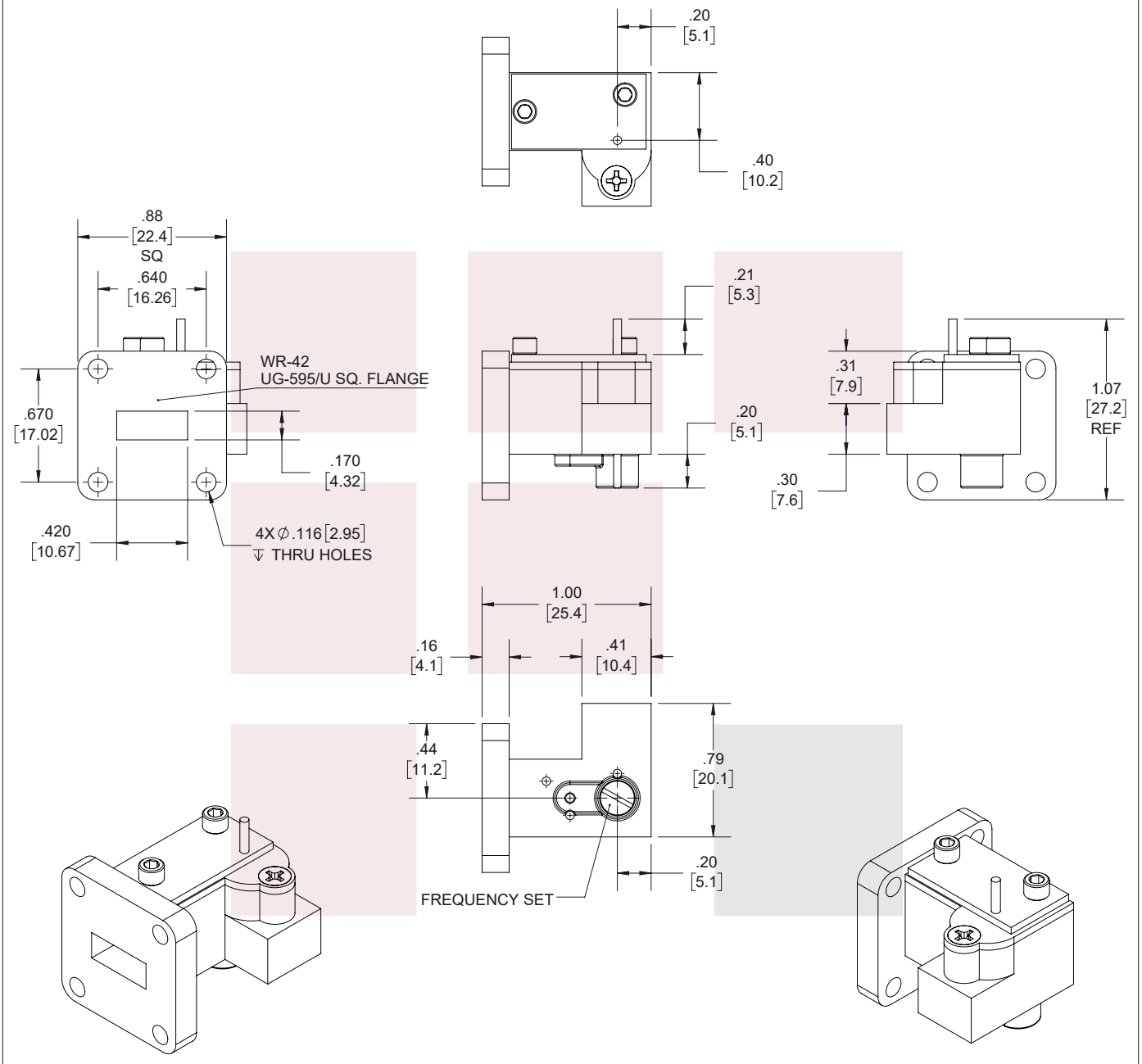


WR-42 Waveguide Gunn Oscillator at a 24.125 GHz Center Frequency with 1 GHz Tuning Range and -98 dBc/Hz Phase Noise, K Band, UG-595/U from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: WR-42 Waveguide Gunn Oscillator at a 24.125 GHz Center Frequency with 1 GHz Tuning Range and -98 dBc/Hz Phase Noise, K Band, UG-595/U FMWGN1012

URL: https://www.fairviewmicrowave.com/wr42-waveguide-gunn-oscillator-24.125-ghz-center-frequency-band-ug595-fmwgn1012-p.aspx

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	5/19/2021	T.GALLA



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TITLE

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

TOLERANCES:

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

THIRD-ANGLE PROJECTION

SHEET 1 OF 1

ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

SCALE N/A

SIZE	CAGE CODE	DRAWN BY	ITEM NO.	REV
A	3FKR5	K.DANG	FMWGN1012	A

T-Rev.D

301 Leora Ln., Suite 100, Lewisville, TX 75056 | Tel: 1-800-715-4396 / (972) 649-6678 / Fax: (972) 649-6689