

# Varactor Controlled Oscillator

## 17.63 - 19.63 GHz

# MA87842

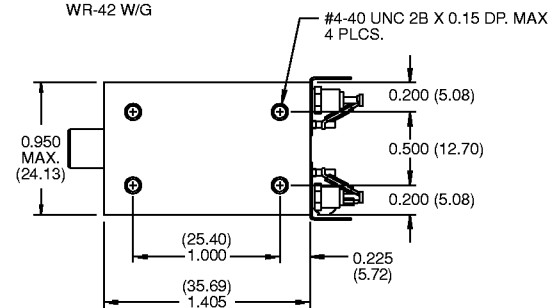
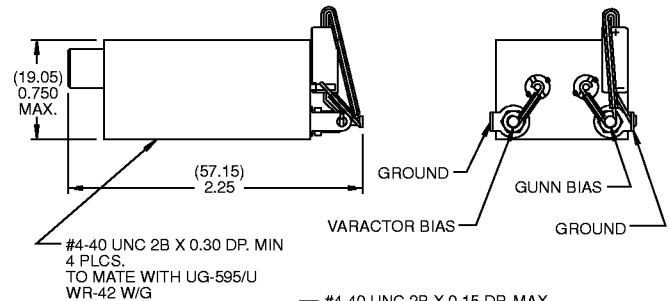
V3.00

### Features

- Low Cost
- Small and Lightweight
- Low AM and FM Noise
- Electronic Tuning Allows AFC

### Description

A mechanically and electronically tunable Gunn oscillator designed to generate RF power in the range of 17.60 to 19.70 GHz. This VCO is suitable as the local oscillator in a receiver assembly for a point-to-point microwave radio. A Gunn diode and GaAs abrupt varactor diode are coupled in a single high Q cavity to provide low AM and FM noise and excellent frequency and power stability with respect to changes in operating temperature.



Dimensions in ( ) are in mm.  
Body is electrical ground

### Specifications

Parameter	Symbol	Units	Specifications
Frequency Range <sup>1</sup>	F	GHz	17.63 to 19.63
Power Output	P <sub>OUT</sub>	mW	10 Min.
Electronic Tuning Ranges <sup>2</sup>	$\Delta F/\Delta V$	MHz	20 Min.
Voltage Operating Range (Gunn) <sup>3</sup>	V <sub>OP</sub> /GUNN	VDC	+5.0 to +8.5
Operating Current (Gunn)	I <sub>OP</sub>	mA	500 Max.
Startup Current (Gunn)	I <sub>TH</sub>	mA	650 Max.
Voltage Operating Range (Tuning) <sup>2</sup>	V <sub>OP</sub> /TUNING	VDC	+2.0 to +7.0
Change Frequency vs. Temperature <sup>4</sup>	$\Delta F/\Delta T$	MHz	$\pm 10$ Max.
Recommended Output Load Parameter	LOAD (SWR)	SWR	< 1.25:1 Max., Any Phase
Operating Temperature Range (Ambient) <sup>5</sup>	T <sub>OP</sub>	°C	-30 to +70
Waveguide Size/Flange			WR-42, UG-595/U

1. Available in 400 MHz mechanically tuned bands.
2. Wider electronic tuning ranges available with application of higher tuning bias voltage.
3. Specific voltage assigned by factory. Power supply should be held to  $\pm 0.10$  V.

4. The frequency reference is the frequency at 25°C.
5. The ambient temperature is defined as air temperature.
6. A 6.8 microfarad capacitor is supplied between the Gunn bias pin and ground to suppress bias line oscillations.

Specifications Subject to Change Without Notice.

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