Varactor Controlled Oscillator
21.15 - 23.63 GHz

MA87937

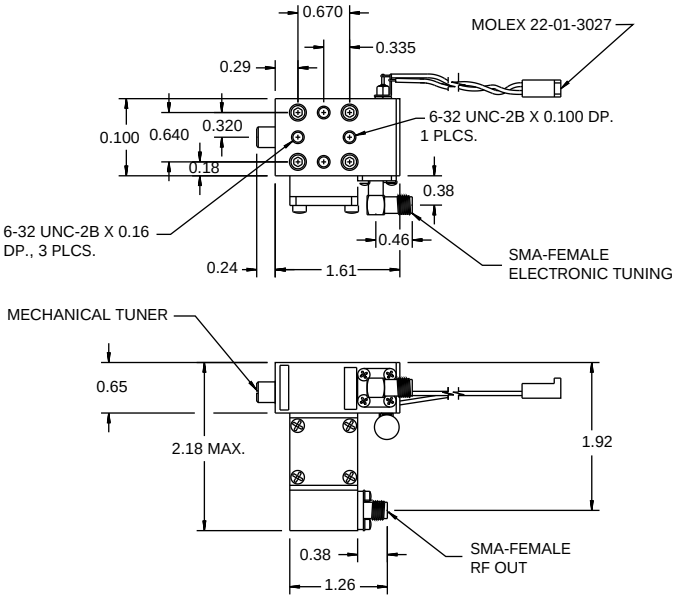
V3.00

Features

- Broadband Electronic Tuning Allows for Center Frequency Setting to Done Electronically, Alleviating the Need for "On Site" Mechanical Adjustments.
- Excellent Tuning Linearity/Modulation Sensitivity
- Small and Lightweight
- Modulation and External AFC Control can be Commonly Applied to Electronic Tuning Bias
- Integrated Isolator Increases the Oscillator's Tolerance to Load Mismatch
- Suitable for Digital or Analog Microwave Radio Applications

Description

An electrically tunable Gunn oscillator designed to generate RF power in the range of 21.2 to 23.6 GHz. A Gunn diode and GaAs hyperabrupt varactor diode are coupled in a single high Q cavity to provide low AM/FM noise, excellent frequency and power stability with respect to changes in operating temperature. This VCO is suitable for both a transmitting source, or the local oscillator in a receiver assembly in point-to-point microwave radio systems.



Dimensions are in inches: .xxx = ±0.015
.xxx = ±0.005
Dimensions in ( ) are in mm.
Wire harness is 8 inches nominal
VCC (RED)
GRD (BLACK)

Specifications @ 25°C

Parameter	Symbol	Units	Specification
Frequency Range[1]	F	GHz	21.15 to 23.63
Power Output[2]	P_{OUT}	mW	10 Min.
Electronic Tuning Ranges	$\Delta F/\Delta V$	MHz	400 Min., 600 Max.
Modulation Sensitivity	MOD/SENS	MHz/V	30 Min., 75 Max.
Voltage Operating Range (Gunn)[3]	V_{OP}/GUNN	VDC	+4.0 to +8.0
Operating Current (Gunn)	I_{OP}	mA	550 Max.
Startup Current (Gunn)	I_{TH}	mA	625 Max.
Voltage Operating Range (Tuning)	V_{OP}/TUNING	VDC	+1.0 to +13.0
Change Frequency vs. Temperature	$\Delta F/\Delta T$	MHz	See Note 5
Recommended Output Load Parameter	LOAD (SWR)	SWR	Assembly Includes Isolator
Operating Temperature Range (Ambient)[4]	T_{OP}	°C	-30 to +70
Waveguide Size/Flange			SMA-Female or WR-42, UG-595/U

1. Available in 400 MHz electronically tuned bands.
2. Other output power levels are available, consult factory.
3. Specific voltage assigned by factory. Power supply should be held to ±0.10 V.
4. The ambient temperature is defined as air temperature.
5. The frequency band end points per note 1 will be tunable within the tuning voltage range of +1.0 to +13.0 VDC, with sufficient margin to compensate for the effects of temperature, load, mismatch and aging.
6. A capacitor is supplied between the Gunn bias pin and ground to suppress bias line oscillations.
7. Tuning bias input is SMA-female, solder pin is available, consult factory.

North America: Tel. (800) 366-2266 Fax (800) 618-8883 ■ Asia/Pacific: Tel. +81 (03) 3226-1671 Fax +81 (03) 3226-1451 ■ Europe: Tel. +44 (1344) 869 595 Fax +44 (1344) 300 020