

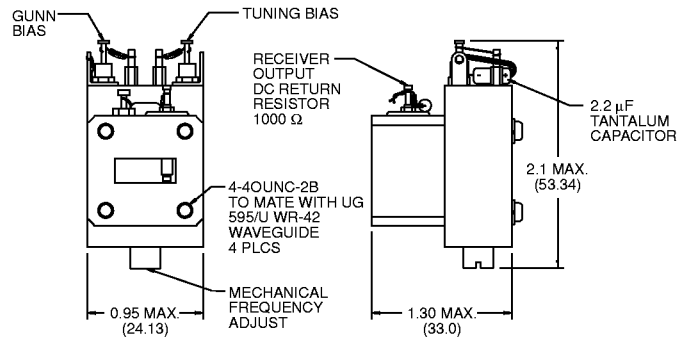
Varactor Controlled Oscillator Transceiver 24.100 - 24.150 GHz

MA87849

V3.00

Features

- Low Cost
- Suitable for Use as the Transmit/Receive Module in Inexpensive Commercial/Industrial Microwave Radios
- Can be Used for FM /CW Applications in Range Finding
- Small and Lightweight
- Mounts Directly to K-band Antennas
- High Sensitivity
- Operates with IF Bandwidths up to 70 MHz



Dimensions in () are in mm.

Description

A mechanically and electronically tunable Gunn oscillator/transceiver designed to operate in the range of 24.0 to 24.250 GHz. A Gunn diode and GaAs varactor diode are coupled in a single high Q cavity to provide low amplitude/frequency noise and reasonable frequency/power output stability with respect to change in operating temperature. A Schottky diode mixer is assembled in an attached waveguide section and performs as the receiver portion of the transceiver assembly.

Specifications @ 25°C

| Parameter | Symbol | Units | Specifications |
|--|------------------------|-------|-----------------------|
| Frequency Range (Mechanical Tuning) | F | GHz | 24.100 to 24.150 |
| Power Output | P _{OUT} | mW | 5 Min. >10 Typ. |
| Electronic Tuning Range ¹ | ΔF/ΔV | MHz | 150 |
| Voltage Operating Range (Gunn) ² | V _{OP} /GUNN | VDC | +5.0 to +8.0 |
| Operating Current (Gunn) | I _{OP} | mA | 400 Max. |
| Startup Current (Gunn) | I _{TH} | mA | 600 Max. |
| Voltage Operating Range (Tuning) ¹ | V _{OP} TUNING | VDC | +0.5 to +20.0 |
| Change Frequency vs. Temperature | ΔF/ΔT | MHz | ±25 Max. |
| Recommended Output Load Parameter | LOAD (SWR) | SWR | 1.5:1 Max., Any Phase |
| Operating Temperature Range (Ambient) ³ | T _{OP} | °C | -30 to +60 |
| IF Frequency Bandwidth | F _{IF} | | 5 Hz to 70 MHz Min. |
| Minimum Detectable Return Signal | SENS | dBc | -95 |
| Recommended DC Return (Mixer Diode) | | Ohms | 500 to 1000 |
| Waveguide Size/Flange | | | WR-42, UG-595/U |
| IF Connector (Mixer) | | | Solder Pin |

1. Additional electronic tuning and highly linear tuning available. Consult factory.
2. Specific voltage assigned by factory. Power supply should be held to ±0.10 V.

3. The ambient temperature is defined as air temperature.
4. A 2.2 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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