

Stereo Doppler Transceiver 24.125 GHz

Rev. V1

Features

- Low Cost
- 8.0mW Output Power
- Gold Plated Solder Pins
- Detects Direction of Motion
- Rugged Die cast Construction
- 10Hz - 5000Hz IF Bandwidth
- Lead Free (RoHS* Compliant)

Description and Applications

M/A-COM's MACS-007802-0M1R10 is a RoHS Compliant K-Band Stereo Doppler transceiver consisting of a Gunn Diode oscillator and two Schottky Diode mixers assembled into a die cast waveguide package. These Transceivers are well suited for high volume applications where small size and reliability are required. Typical applications include automatic door openers, police radar and presence sensing applications, where Direction of motion is required.

Product Specifications

| Parameter | Test Conditions | Units | Min. | Typ. | Max. |
|-------------------------|-----------------|-------------|--------|--------|--------|
| Operating Frequency | +25 °C | GHz | 24.100 | 24.125 | 24.150 |
| Output Power | +25 °C | mW | 8.0 | | |
| Operating Current | +25 °C | mA | 140 | 175 | 200 |
| Operating Voltage | +25 °C | VDC | | 5.0 | |
| Schottky Diode Noise | +25 °C | micro-Volts | | 2.5 | 5.0 |
| Transceiver Sensitivity | +25 °C | -dBc | -93 | -103 | |
| Mixer Phasing | +25 °C | Degrees | 50 | | 120 |

Operating temperature to full specification -30°C to +70°C

Absolute Maximum Ratings¹

| Parameter | Maximum Ratings |
|-------------------------|-------------------|
| Operating Temperature | -40 °C to +85 °C |
| Storage Temperature | -65 °C to +150 °C |
| Incident RF Input Power | +20 dBm |
| DC Input (Gunn Diode) | +5.5VDC |
| Soldering Temperature | +260 °C max. |

1. Exceeding these limits may cause permanent damage.

Note: Device is ESD Sensitive. Proper ESD Precautions should be used when handling this Device..

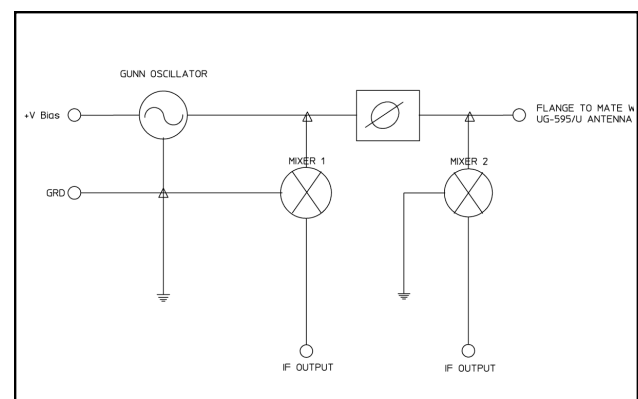
Package Outline



PIN Configuration

| PIN | Function |
|-----|---------------------|
| 1 | DC Input |
| 2 | GND |
| 3 | IF Output (Mixer 1) |
| 4 | IF Output (Mixer 2) |

Functional Block Diagram



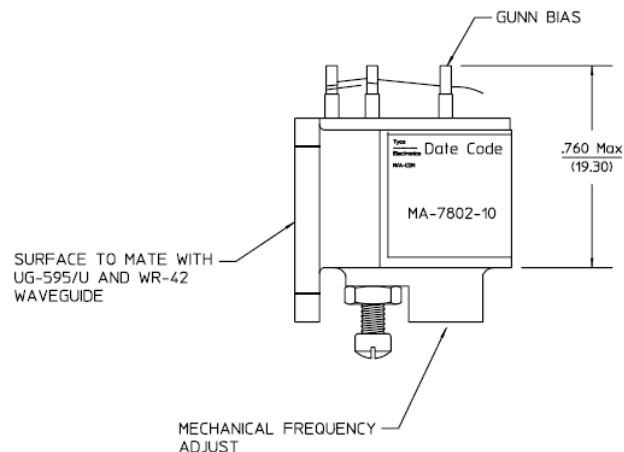
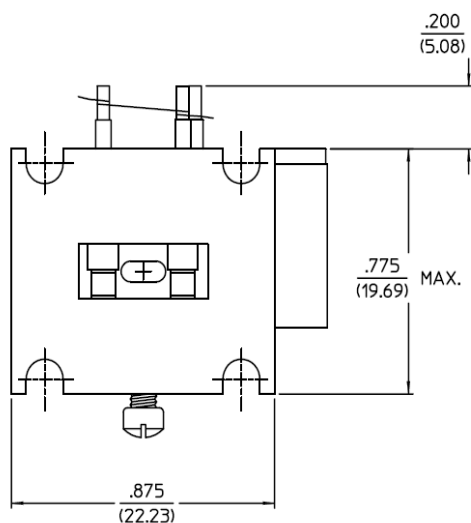
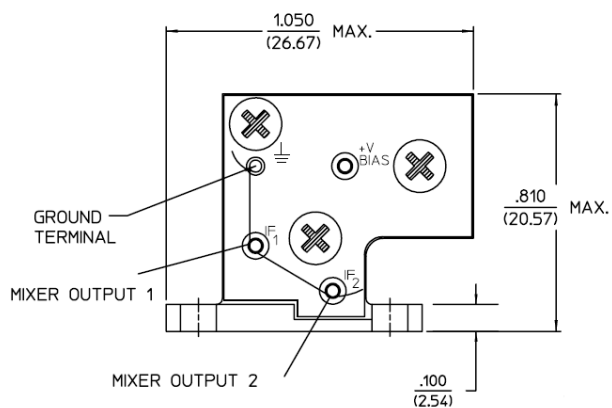
*Restrictions on Hazardous Substances, European Union Directive 2002/95/EC.

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