

1. SCOPE

This specification is applied to a SAW resonator designed for the stabilization of transmitters such as garage door openers and security transmitters.

2. ELECTRICAL SPECIFICATION

2.1 Maximum Rating

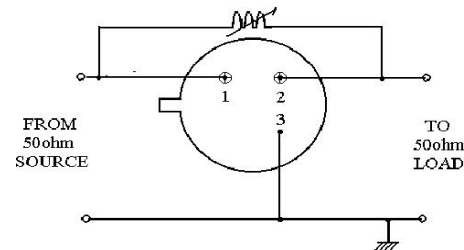
| | |
|-----------------------|-------------------|
| DC Voltage VDC | 10V |
| AC Voltage Vpp | 10V 50Hz/ 60Hz |
| Operation temperature | -40 °C to + 85 °C |
| Storage temperature | -45 °C to + 85°C |
| Max Input Power | 10 dBm |

2.2 Electronic Characteristics

| Item | | Unites | Minimum | Typical | Maximum |
|-------------------------------|-------------------------|---------------------|---------|---------|---------|
| Center Frequency | | MHz | 314.925 | 315.000 | 315.075 |
| Insertion Loss | | dB | | 1.5 | 2.2 |
| Quality Factor Unload Q | | | 8000 | 12800 | |
| 50Ω Loaded Q | | | 850 | 1500 | |
| Temperature | Turnover Temperature | °C | 10 | 25 | 40 |
| Stability | Freq.temp.Coefficient | ppm/°C ² | | 0.037 | |
| Frequency Aging | | ppm/yr | | ≤10 | |
| DC. Insulation Resistance | | MΩ | 1.0 | | |
| RF Equivalent RLC Model | Motional Resistance R1 | Ω | | 17 | 26 |
| | Motional Inductance L1 | μH | | 109.28 | |
| | Motional Capacitance C1 | fF | | 2.3357 | |
| Transducer Static Capacitance | | pF | | 2.7 | |

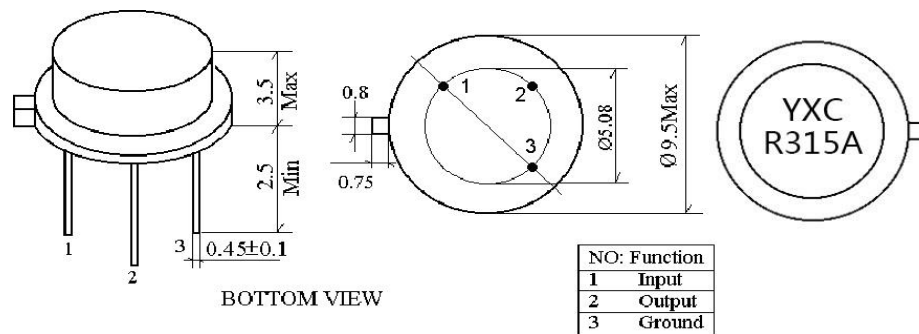


3. TEST CIRCUIT



R315 TO39 3Pin

4. DIMENSION



R315 TO39 3Pin

5. ENVIRONMENTAL CHARACTERISTICS

5-1 High temperature exposure

Subject the device to +85°C for 16 hours. Then release the resonator into the room conditions for 24 hours prior to the measurement. It shall fulfill the specifications in 2.2.

5-2 Low temperature exposure

Subject the device to -40°C for 16 hours. Then release the device into the room conditions for 24 hours prior to the measurement. It shall fulfill the specifications in 2.2.

5-3 Temperature cycling

Subject the device to a low temperature of -40°C for 30 minutes. Following by a high temperature of +85°C for 30 Minutes. Then release the device into the room conditions for 24 hours prior to the measurement. It shall meet the specifications in 2.2.

5-4 Resistance to solder heat

Dip the device terminals no closer than 1.5mm into the solder bath at 260°C ± 10°C for 10 ± 1 sec. Then release the device into the room conditions for 4 hours. The device shall meet the specifications in 2.2.

5-5 Solderability

Subject the device terminals into the solder bath at $245^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 5s, More than 95% area of the terminals must be covered with new solder. It shall meet the specifications in 2.2.

5-6 Mechanical shock

Drop the device randomly onto the concrete floor from the height of 1m 3 times. the device shall fulfill the specifications in 2.2.

5-7 Vibration

Subject the device to the vibration for 1 hour each in x, y and z axes with the the amplitude of 1.5 mm at 10 to 55Hz. The device shall fulfill the specifications in 2.2.

6. REMARK

6.1 Static voltage

Static voltage between signal load & ground may cause deterioration & destruction of the component. Please avoid static voltage.

6.2 Ultrasonic cleaning

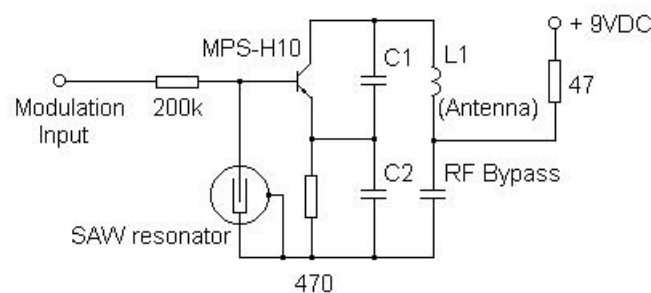
Ultrasonic vibration may cause deterioration & destruction of the component. Please avoid ultrasonic cleaning

6.3 Soldering

Only leads of component may be soldered. Please avoid soldering another part of component.

7. TYPICAL APPLICATION CIRCUITS

Typical low-power Transmitter Application



Typical Local Oscillator Application

