



R315 TO-39



1. SCOPE

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

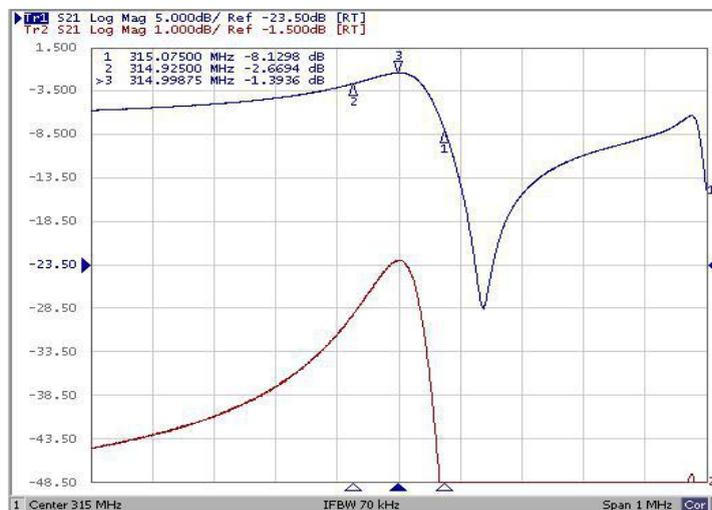
2. ELECTRICAL SPECIFICATION

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
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	

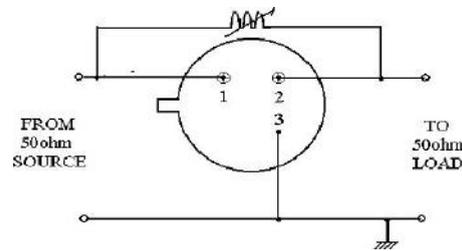




R315 TO-39

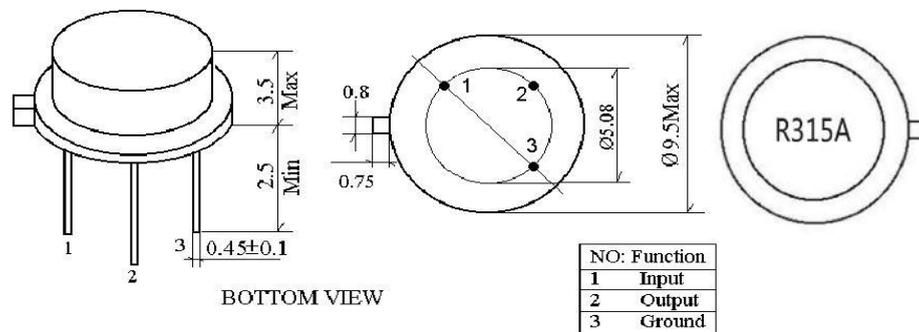


3. TEST CIRCUIT



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.



R315 TO-39



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

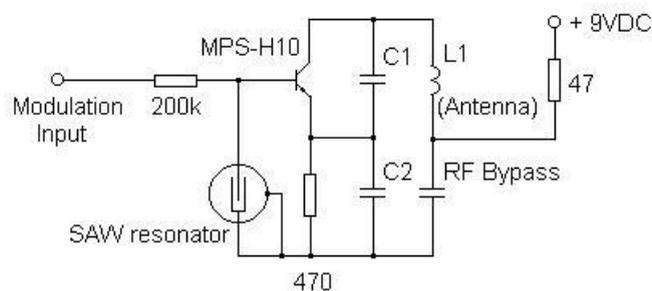
Ultrasonic vibration may cause deterioration & destruction of the component. Please avoid ultrasonic cleaning

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

