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

DC Voltage VDC	30V
AC Voltage Vpp	10V50Hz/60Hz
Operation temperature	-40 to +85
Storage temperature	-45 to +85
RF Power Dissipation	0dBm

Electronic Characteristics

Item		Unites	Minimum	Typical	Maximum	Sym
Center Frequency		MHz	310.988	311.063	311.138	f
Insertion Loss (in 50ohm system)		dB		1.5	2.2	IL
Quality Factor	Unloaded Q			13,900		Q_U
	50 LoadedQ			2,000		Q_L
Temperature	Turnover Temperature		10	25	40	To
Stability	Turnover Frequency	MHz		f		fo
	Frequency Temperature Coefficient ppm/ 2			0.037		FTC
Frequency Aging Absolute Value during the First year		ppm /yr		10		$\lvert f_A \rvert$
DC Insulation Resistance between any two Pins		M	1.0			
	Motional Resistance			19	26	Rm
RF Equivalent	Motinal Inductance	μH		133.811		Lm
RLC Model	Motinal Capacitance	fH		2.05070		Cm
	Pin 1to pin2 Static Capacitance	pF	1.5	2.0	2.5	Co
	Transducer Static Capacitance	pF		2.5		Cp

3. TEST CIRCUIT

4. DIMENSION

BOTTOM VIEW

5.

HD
R311M

NO: Function	
1	Input
2	Output
3	Ground
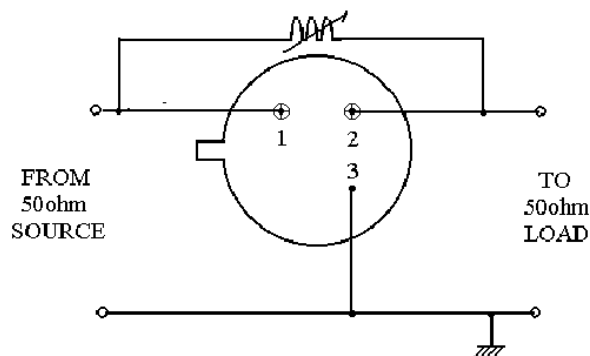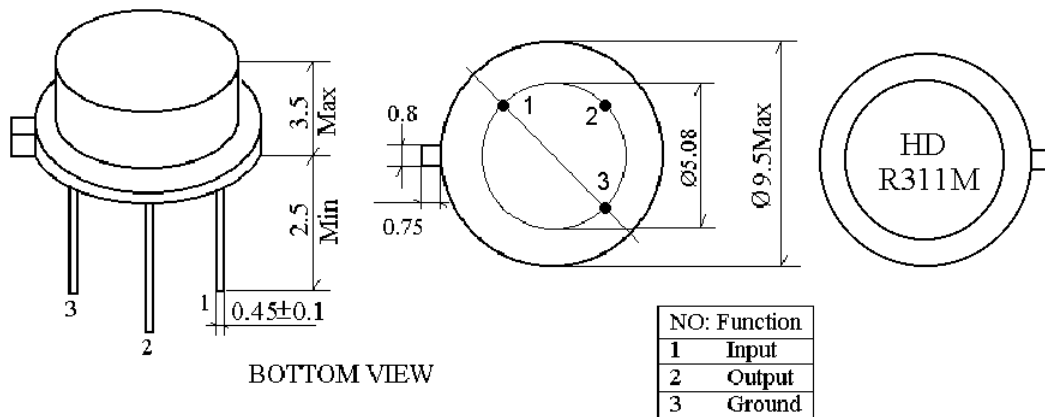
ENVIRONMENTAL CHARACTERISTICS

5-1 High temperature exposure

Subject the device to +85   for 16 hours. Then release the filter into the room conditions for 24 hours prior to the measurement. It shall fulfill the specifications in table 1.

5-2 Low temperature exposure

Subject the device to -20   for 16 hours. Then release the device into the room conditions for 24 hours prior to the measurement. It shall fulfill the specifications in table 1.

5-3 Temperature cycling

Subject the device to a low temperature of -40   for 30 minutes. Following by a high temperature of +80   for 30 Minutes. Then release the device into the room conditions for 24 hours prior to the me asurement. It shall meet the specifications in table 1.

5-4 Resistance to solder heat

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

5-5 Solderability

Subject the device terminals into the solder bath at 245   ± 5   for 5s, More than 95% area of the terminals must be covered with new solder. It shall meet the specifications in table 1.

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 table 1.

5-7 Vibration

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

5-8 Lead fatigue

    5-8-1 Pulling test

        Weight along with the direction of lead without an shock 1kg. The   device shall satisfy all the initial Characteristics.

    5-8-2 Bending test

Lead shall be subject to withstand against 90 bending with 450g weight in the direction of thickness. This operation shall be done toward both direction. The device shall show no evidence of damage and shall satisfy all the initial electrical characteristics.

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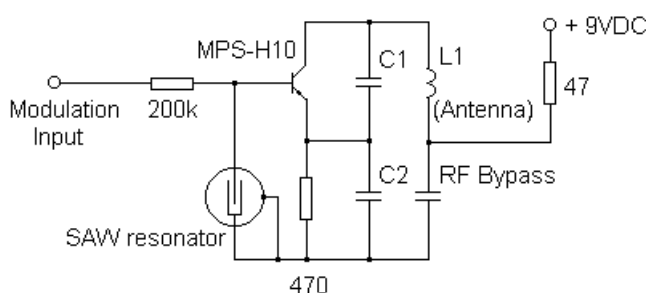
       Ultrasonic vibration may cause deterioration & destruction of the   component. Please avoid ultrasonic cleaning

6.3 Soldering

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

7.TYPCIAL APPLICATION CIRCUITS

Typical low-power Transmitter Application

Typical Local Oscillator Application