

## 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

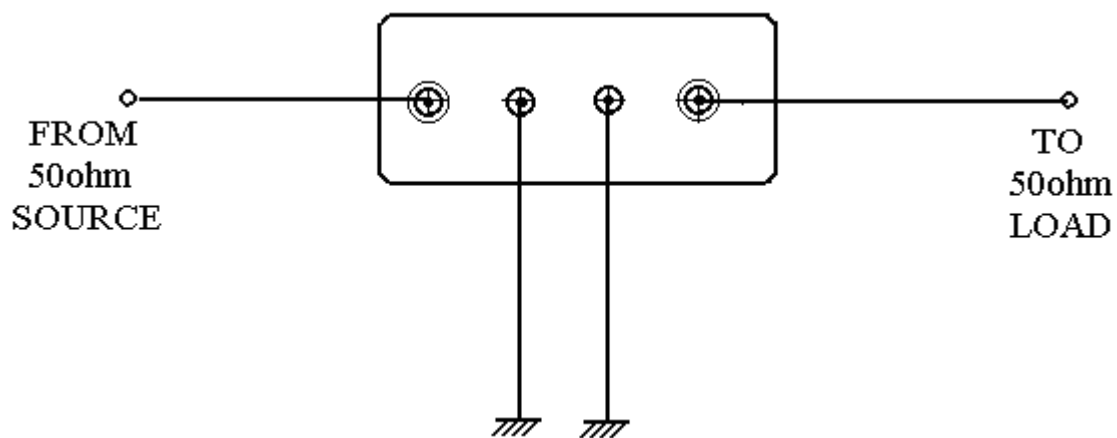
### 2.1 Maximum Rating

DC Voltage VDC	1 0 V
AC Voltage Vpp	10V 50Hz/60Hz
Operation temperature	-40℃ to +85℃
Storage temperature	-45℃ to +85℃
Max Input Power	1 0 dBm

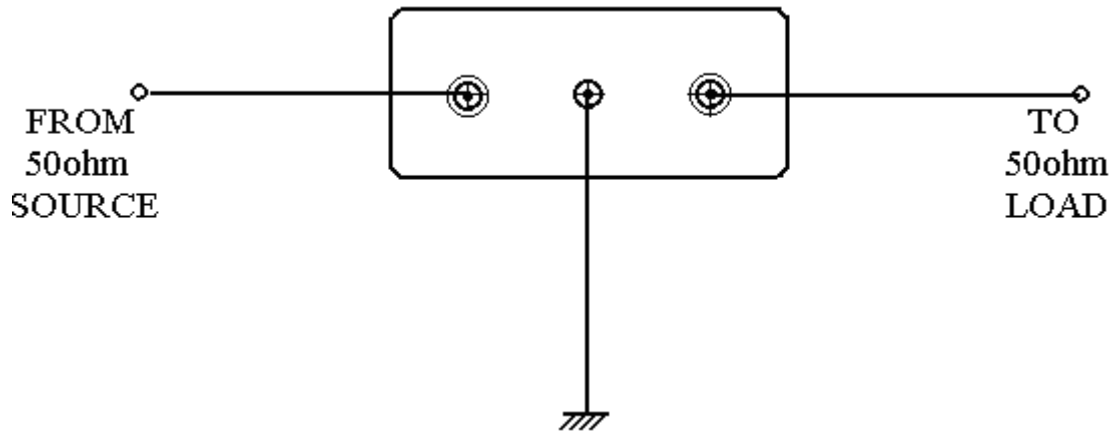
### 2.2 Electronic Characteristics

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		
50 Ω Loaded Q		1000	2000		
Temperature	Turnover Temperature	℃	10	25	40
Stability	Freq.temp.Coefficient	ppm/℃ <sup>2</sup>		0.037	
Frequency Aging		ppm/yr		≤10	
DC. Insulation Resistance	M Ω	1.0			
RF Equivalent RLC Model	Motional Resistance R1	Ω		17	26
	Motional Inductance L1	μ H		109.28	
	Motional Capacitance C1	fF		2.3357	
Transducer Static Capacitance	pF		2.7		

## 3. TEST CIRCUIT

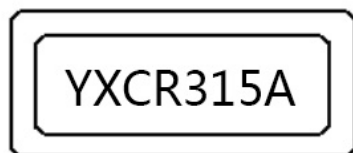
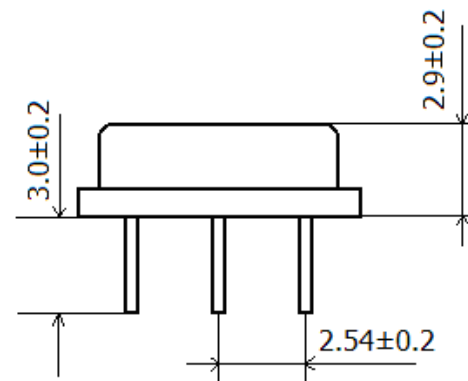
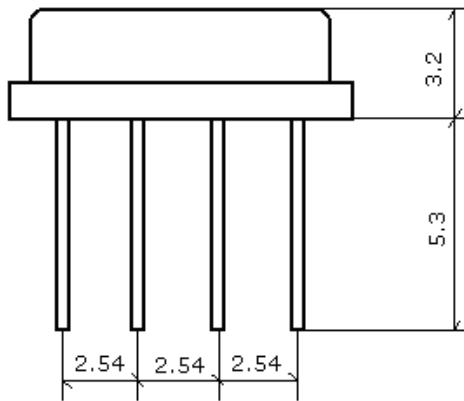
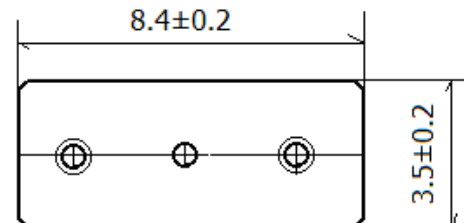
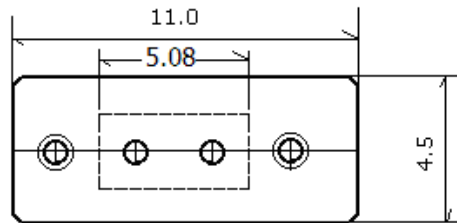


R315 F11 4Pin

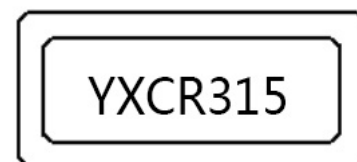


R315 D11 3Pin

**4. DIMENSION**



R315 F11 4Pin



R315 D11 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  $-40^{\circ}\text{C}$  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  $-40^{\circ}\text{C}$  for 30 minutes. Following by a high temperature of  $+85^{\circ}\text{C}$  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  $260^{\circ}\text{C} \pm 10^{\circ}\text{C}$  for  $10 \pm 1$  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 amplitude of 1.5 mm at 10 to 55 Hz. 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

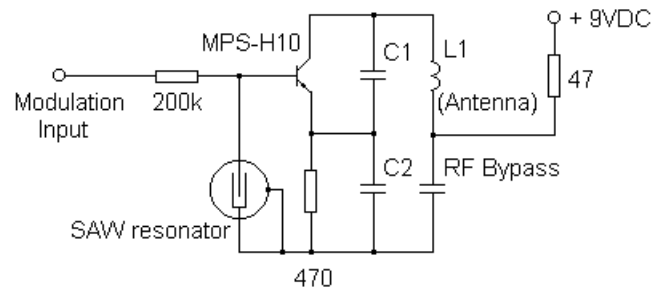
Ultrasonic vibration may cause deterioration & destruction of the component. Please avoid ultrasonic cleaning

#### 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

