

## 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

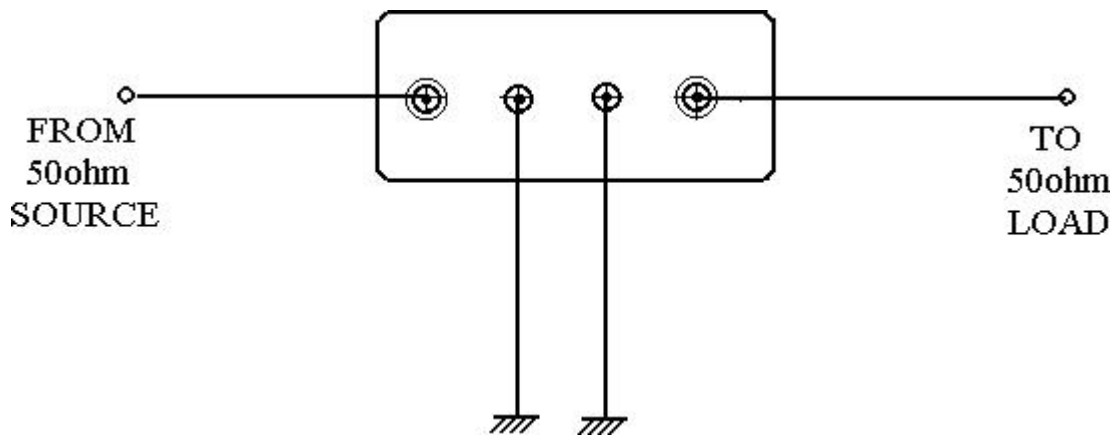
### 2.1 Maximum Rating

DC Voltage VDC	1.0 V
AC Voltage Vpp	10V 50Hz/60Hz
Operation temperature	-40°C to +85°C
Storage temperature	-45°C to +85°C
Max Input Power	1.0 dBm

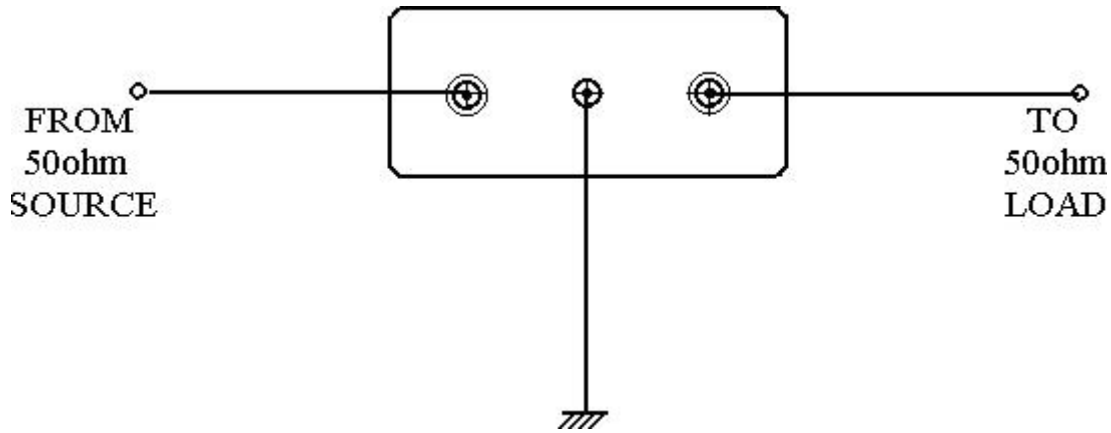
### 2.2 Electronic Characteristics

Item	Units	Minimum	Typical	Maximum
Center Frequency	MHz	433.845	433.920	433.995
Insertion Loss	dB		1.6	2.2
Quality Factor	Unload Q	8300	12000	
	50Ω Loaded Q	850	1500	
Temperature Stability	Turnover Temperature	°C	10	25
	Freq.temp.Coefficient	ppm/°C	0.032	
Frequency Aging		ppm/yr	<±10	
DC. Insulation Resistance	MΩ	1.0		
RF Equivalent RLC Model	Motional Resistance R1	Ω	18	26
	Motional Inductance L1	μH	79.82	
	Motional Capacitance C1	fF	1.685	
Transducer Static Capacitance C0	pF		2.3	

## 3. TEST CIRCUIT

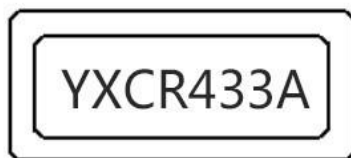
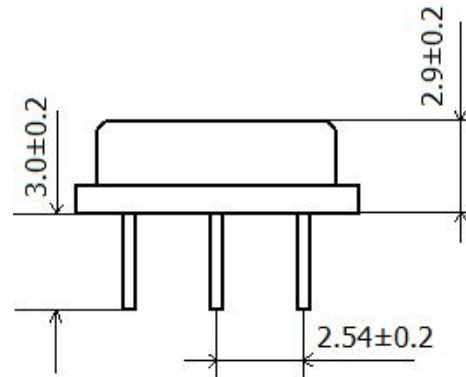
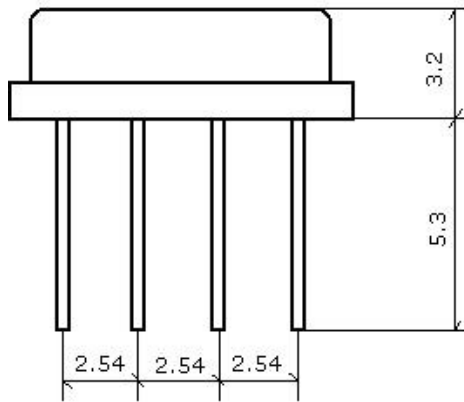
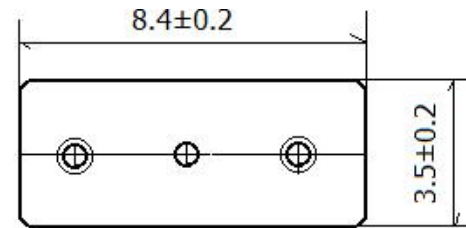
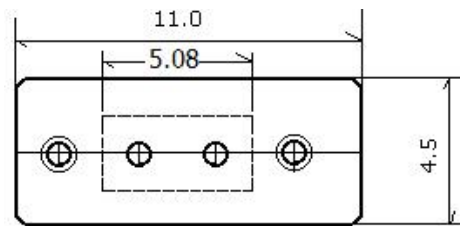


R433 F11 4Pin



R433 D11 3Pin

#### 4. DIMENSION



R433 F11 4Pin



R433 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

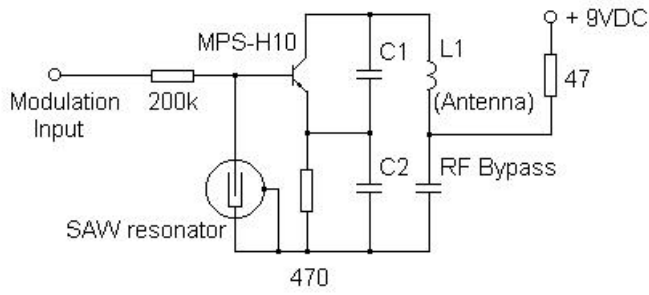
Ultrasonic vibration may cause deterioration & destruction of the component. Please avoid ultrasonic cleaning

#### 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

