

## 1. SCOPE

This specification shall cover the characteristics of 1-port SAW resonator with used for remote-control security.

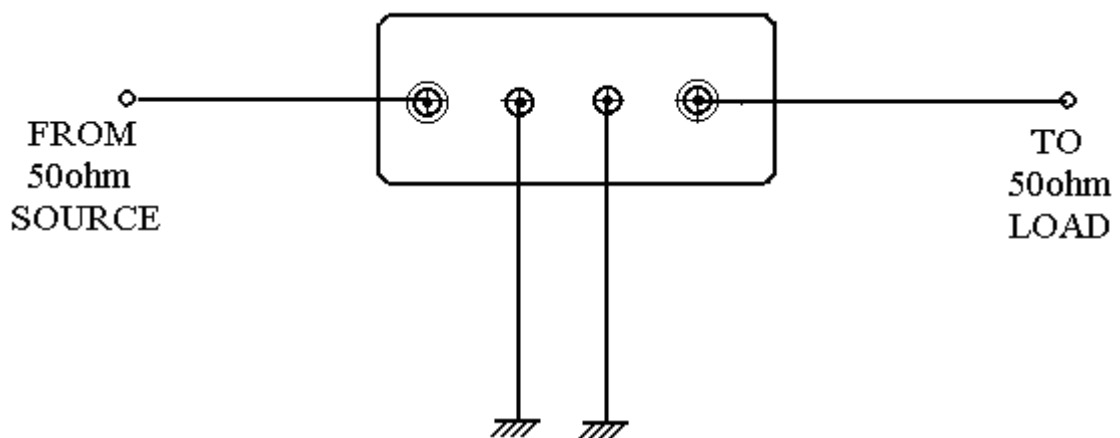
## 2. ELECTRICAL SPECIFICATION

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

### 2.2 Electronic Characteristics

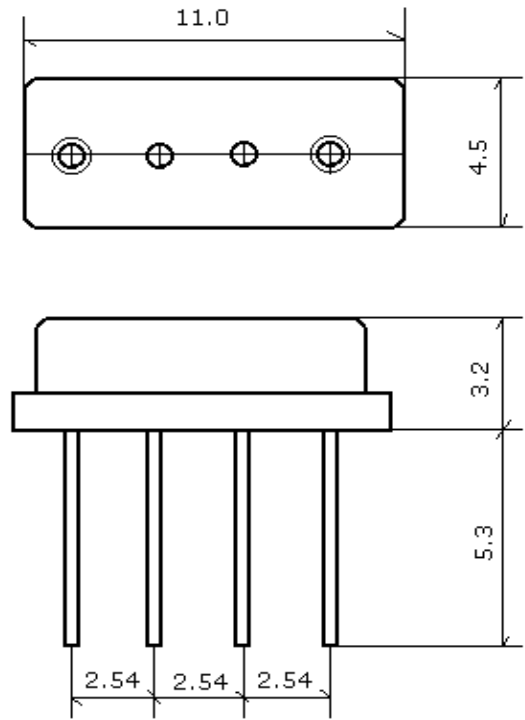
Item	Unites	Minimum	Typical	Maximum	
Center Frequency	MHz	433.845	433.920	433.995	
Insertion Loss	dB		1.5	2.5	
Quality Factor Unload Q		8000	12800		
50 Ω Loaded Q		1000	2000		
Temperature	Turnover Temperature	°C	10	25	40
Stability	Freq.temp.Coefficient	ppm/°C <sup>2</sup>		0.032	
Frequency Aging		ppm/yr		<±10	
DC. Insulation Resistance	MΩ	1.0			
RF Equivalent RLC Model	Motional Resistance R1	Ω		18	26
	Motional Inductance L1	μH		74.627	
	Motional Capacitance C1	fF		1.8024	
Transducer Static Capacitance	pF		2.3		

## 3. TEST CIRCUIT



**P/N: WTL6A11153**  
**F11 Saw Resonator**

**4. DIMENSION**



## **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 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  $\pm 10^{\circ}\text{C}$  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 °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

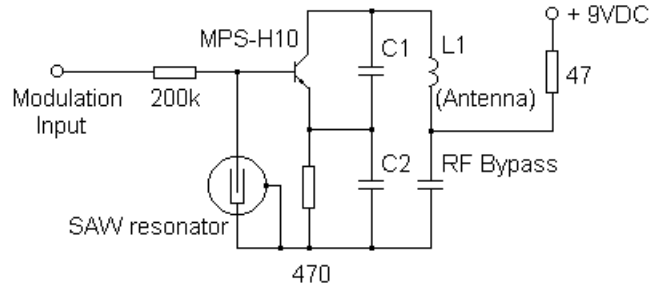
Ultrasonic vibration may cause deterioration & destruction of the component. Please avoid ultrasonic cleaning

### 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

