R433 F11 D11

1.SCOPE

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

2.ELECTRICAL

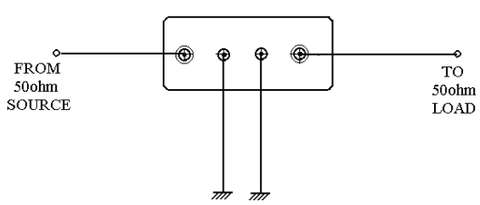
2.1 Maximum Rating

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

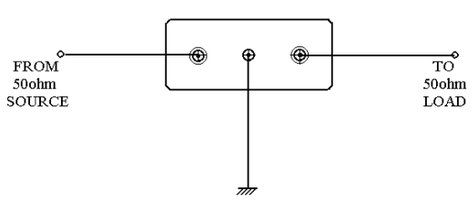
2.2 Electronic Characteristics

Item		Unites	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	℃	10	25	40
	Freq.temp.Coefficient	ppm/ ℃^{2}		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

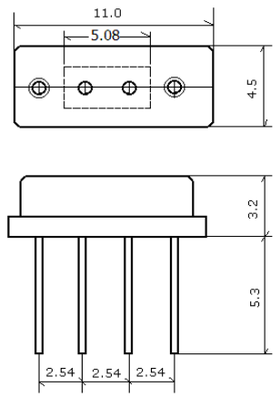


R433 F11 4Pin

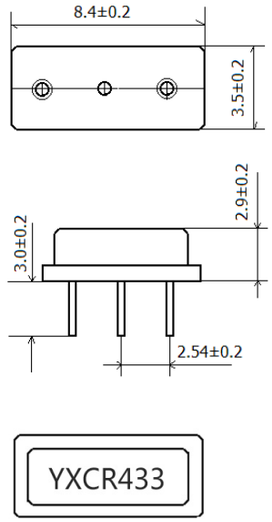


R433 D11 3Pin

4. DIMENSION



R433 F11 4Pin



R433 D11 3Pin

5. ENVIRONMENTAL CHARACTERISTICS

5-1 High temperature exposure

Subject the device to +85℃ 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℃ 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℃ 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℃ ± 10℃ for 10 ±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℃ ± 5℃ 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 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

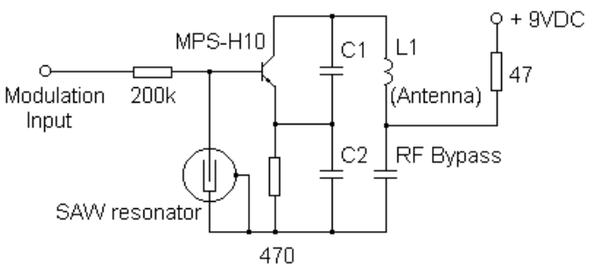
Ultrasonic vibration may cause deterioration & destruction of the component. Please avoid ultrasonic cleaning

6.3 Soldering

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

7. TYPCIAL APPLICATION CIRCUITS

Typical low-power Transmitter Application



Typical Local Oscillator Application