Approved by:
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SPECIFICATION

PRODUCT: **SAW FILTER**

MODEL: **HDR433D**

SHOULDER 好达电子

SHOULDER ELECTRONICS LIMITED

SPECIFICATION

1. SCOPE

This specification is applied to a 2-PORT **type SAW resonator designed for the stabilization of transmitters such as garage door openers and security transmitters.**

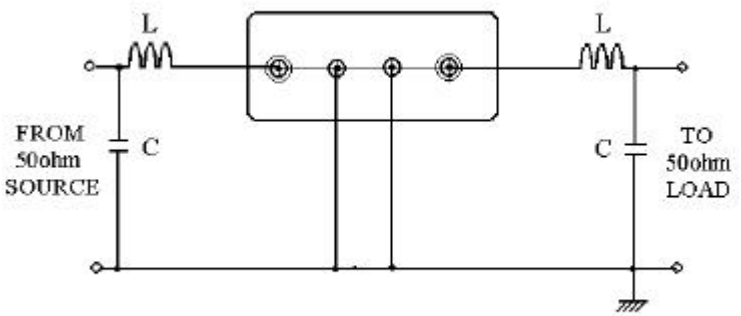
2. ELECTRICAL SPECIFICATION

DC Voltage VDC	**10V**
AC Voltage Vpp	**10V50Hz/60Hz**
Operation temperature	**-20℃ to +85℃**
Storage temperature	**-45℃ to +85℃**
RF Power Dissipation	**0dBm**

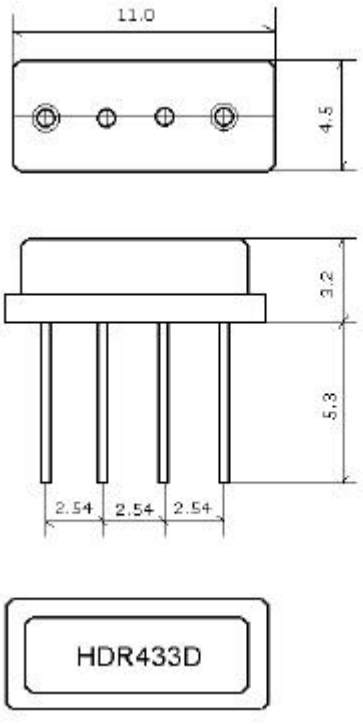
Electronic Characteristics

Item		Unites	Minimum	Typical	Maximum
Center Frequency		MHz	433.820	433.920	434. 020
Insertion Loss		dB		7.0	8.0
Quality Factor Unload Q				12,000	
50Ω Loaded Q				6,300	
Temperature Stability	Turnover Temperature	℃	20	35	50
	TurnoverFreqency	KHz		fo+11	
	Freq.Temp.Coefficient	ppm/℃		0.037	
Frequency Aging (During the first year)		ppm/yr		<±10	
DC. Insulation Resistance		MΩ	1.0		
RF Equivalent RLC Model	Motional Resistance R1	Ω		107	152
	Motional Inductance L1	μH		481.378	
	Motional Capacitance C1	pF		0.2794	
Shunt Static Capacitance		pF		1.3	

3.TEST CIRCUIT



4. DIMENSION



5. ENVIRONMENTAL CHARACTERISTICS

5-1 High temperature exposure

Subject the resonator to +80℃ for 96 hours. Then release the resonator into the room conditions for 1 to 2 hours prior to the measurement. It shall fulfill the specifications in table 1.

5-2 Moisture

Keep the resonator at 40℃ and 95% rh for 96 hours. then release the resonator into the room conditions for 1 to 2 hours prior to the measurement. It shall fulfill the specifications in table 1.

5-3 Low temperature exposure

Subject the resonator to -20℃ for 96 hours. Then release the resonator into the room conditions for 1 to 2 hours prior to the measurement. It shall fulfill the specifications in table 1.

5-4 Temperature cycling

Subject the resonator to a low temperature of -55℃ for 30 minutes. Following by a high temperature of +85℃ for 30 Minutes. Then release the resonator into the room conditions for 1 to 2 hours prior to the measurement. It shall meet the specifications in table 1.

5-5 Resistance to solder heat

Dip the resonator terminals no closer than 1.5mm into the solder bath at 270℃ ±10℃ for 10±1 sec. Then release the resonator into the room conditions for 1 to 2 hours. The resonator shall meet the specifications in

table 1.

5-6 Mechanical shock

Drop the resonator randomly onto the concrete floor from the height of 30cm 3 times. The resonator shall fulfill the specifications in table 1.

5-7 Vibration

Subject the resonator 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 resonator 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 3 kg. The resonator shall satisfy all the initial Characteristics.

5-8-2 Bending test

Lead shall be subject to withstand against 90℃ bending in the direction of thickness. This operation shall be done toward both directions. The resonator 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.