Approved by:
Checked by:
Issued by:

SPECIFICATION

PRODUCT: SAW RESONATOR

MODEL: HDR868.35M(S2)

SHOULDER ELECTRONICS LIMITED

1. SCOPE

This specification shall cover the characteristics of 1-port SAW resonator with 868.35M used for remote-control security.

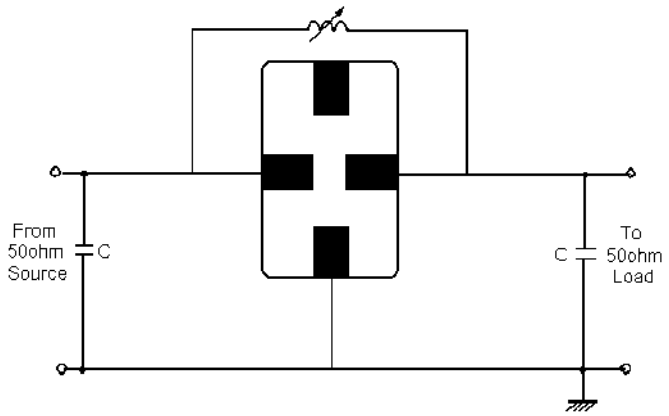
2. ELECTRICAL SPECIFICATION

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

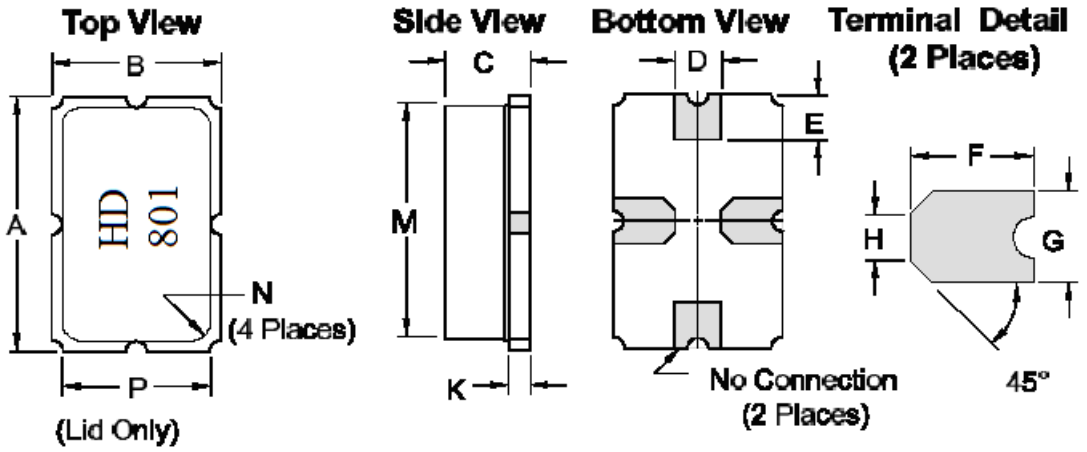
Item		Unites	Minimum	Typical	Maximum
Center Frequency		MHz	868.100	868.350	868.600
Insertion Loss		dB		1.1	1.5
Quality Factor Unload Q				12800	
50Ω Loaded Q				2,000	
Temperature Stability	Turnover Temperature	℃	24	39	54
	Turnover Frequency	KHz		fo+207	
	Freq.temp.Coefficient	ppm/℃2		0.037	
Frequency Aging		ppm/yr		<±10	
DC. Insulation Resistance		MΩ	1.0		
RF Equivalent RLC Model	Motional Resistance R1	Ω		15	23
	Motional Inductance L1	μH		82.3481	
	Motional Capacitance C1	pF		1.64228	
Pin 1 to Pin 2 Staic Capacitance		pF		2.7	
Transducer Static Capacitance		nH		10.83	

3. TEST CIRCUIT



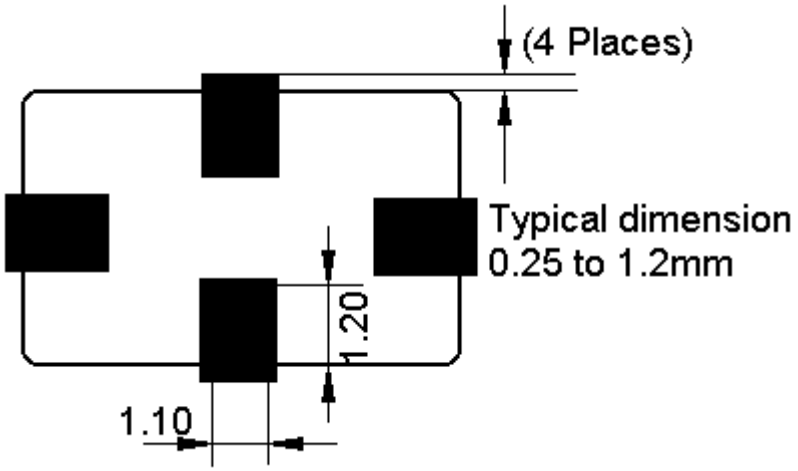
4. DIMENSION

4-1 Typical dimension(unit: mm)



Dimensions	Millimeters		Inches	
	Min	Max	Min	Max
A		5.97		0.235
B		3.94		0.155
C		2.16		0.085
D	0.94	1.10	0.037	0.043
E	0.83	1.20	0.033	0.047
F	1.16	1.53	0.046	0.060
G	0.94	1.10	0.037	0.043
H	0.43	0.59	0.017	0.023
K	0.43	0.59	0.17	0.023
M		5.31		0.209
N	0.38	0.64	0.015	0.025
P		3.28		0.129

4-2 Typical circuit board land patter



5. ENVIRONMENTAL CHARACTERISTICS

5-1 Temperature cycling

Subject the device to a low temperature of -40℃for 30 minutes. Following by a high temperature of +25℃ for 5 Minutes and a higher temperature of +85℃ for 30 Minutes. Then release the device into the room conditions for 1 to 2 hours prior to the measurement. It shall meet the specifications in table 1.

5-2 Resistance to solder heat

Submerge the device terminals into the solder bath at 260℃ ±5℃ for 10±1 sec. Then release the device into the room conditions for 4 hours. It shall meet the specifications in table 1.

5-3 Solderability

Submerge the device terminals into the solder bath at 245℃ ±5℃ for 5s, More than 95% area of the soldering pad must be covered with new solder. It shall meet the specifications in table 1.

5-4 Mechanical shock

Drop the device randomly onto the concrete floor from the height of 1 m 3 times. the filter shall fulfill the specifications in table 1.

5-5 Vibration

Subject the device to the vibration for 2 hour each in x,y and z axes with the amplitude of 1.5 mm at 10 to 55 hz. The filter shall fulfill the specifications in table 1.

5-6 Gross Leak Test

Submerge the device to absolute alcohol for at least 1 minute at +70 to +75℃. No bubbles Should be seen. Measure the leak rate. Failure is defined if the leak rate exceeds $1X10^{-5}$ atm cc/sec Helium. Refer to MIL – STD - 202F , Method 112 for test details.

5-7 Fine Leak Test

Failure is defined if the leak rate exceeds $1X10^{-5}$ atm cc/sec Helium. Refer to MIL – STD - 202F , Method 112 for test details.

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.