# SCOPE

**This specification shall cover the characteristics of 1-port SAW resonator with 433.42M used for remote-control security.**

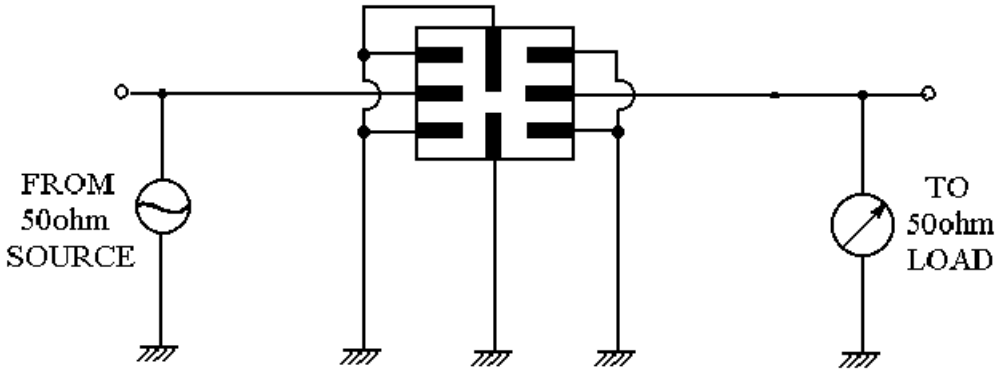
## 2. ELECTRICAL SPECIFICATION

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

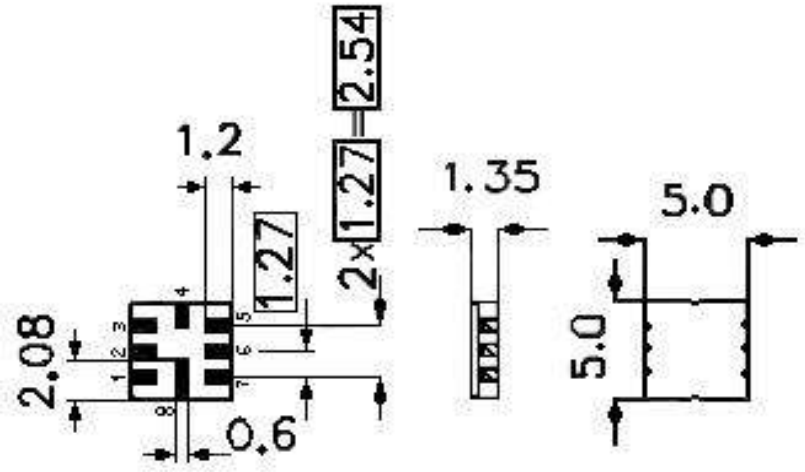
**Electronic Characteristics**

| Item | | Unites | Minimum | Typical | Maximum |
|---|---|---|---|---|---|
| Center Frequency | | MHz | 433.345 | 433.420 | 433.495 |
| Insertion Loss | | dB | | 1.5 | 2.5 |
| Quality Factor Unload Q | | | | 12,800 | |
| 50Ω Loaded Q | | | | 2,000 | |
| Temperature Stability | Turnover Temperature | ℃ | 10 | 25 | 40 |
| | Turnover Frequency | KHz | | fo | |
| | 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 | | 86 | |
| | Motional Capacitance C1 | fF | | 1.5 | |
| Pin 1 to Pin 2 Staic Capacitance | | pF | 1.7 | 2.0 | 2.3 |
| Transducer Static Capacitance | | pF | | 1.9 | |

## 3. TEST CIRCUIT



## 4. DIMENSION




**2.Input**
6.Output
1.3.5.7.Gound
4.8 Ground

## 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.

## 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. Packing

7.1 Dimensions

(1) Carrier Tape: Figure 1

(2) Reel: Figure 2

(3) The product shall be packed properly not to be damaged during transportation and storage.

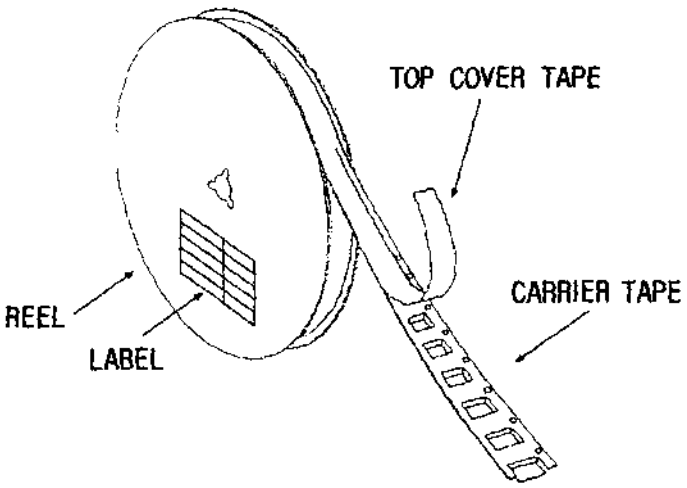
7.2 Reeling Quantity

1000 pcs/reel 7”

3000 pcs/reel 13”

7.3 Taping Structure

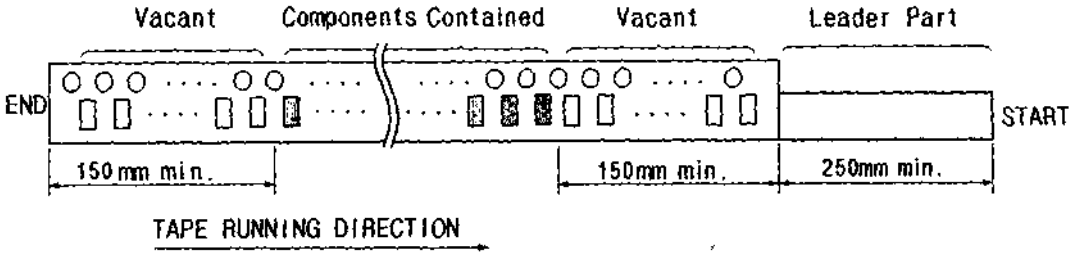
(1) The tape shall be wound around the reel in the direction shown below.




(2) Label

| | |
|---|---|
| Device Name | |
| User Product Name | |
| Quantity | |
| Lot No. | |

(3) Leader part and vacant position specifications.

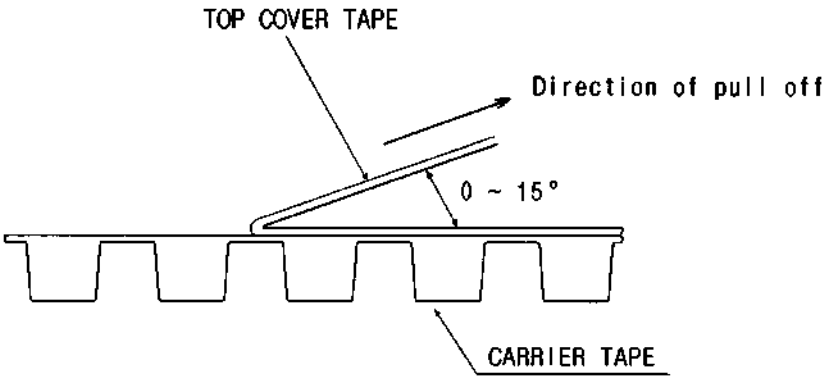



# 8. TAPE SPECIFICATIONS

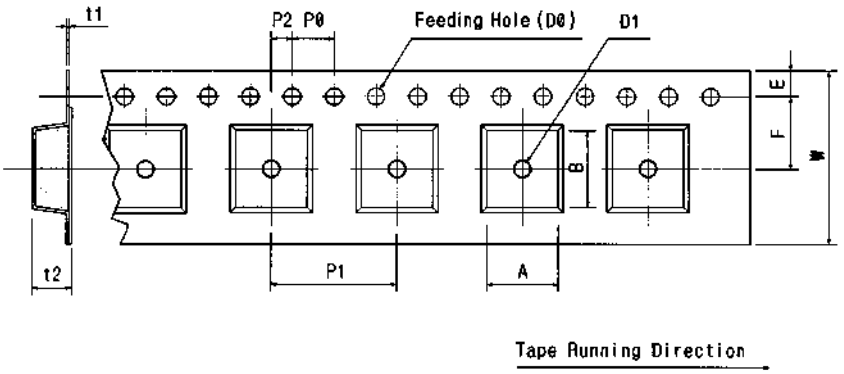
8.1 Tensile Strength of Carrier Tape: 4.4N/mm width

8.2 Top Cover Tape Adhesion (See the below figure)

(1) pull off angle: 0~15**o**
(2) speed: 300mm/min.
(3) force: 20~70g




[Figure 1] Carrier Tape Dimensions

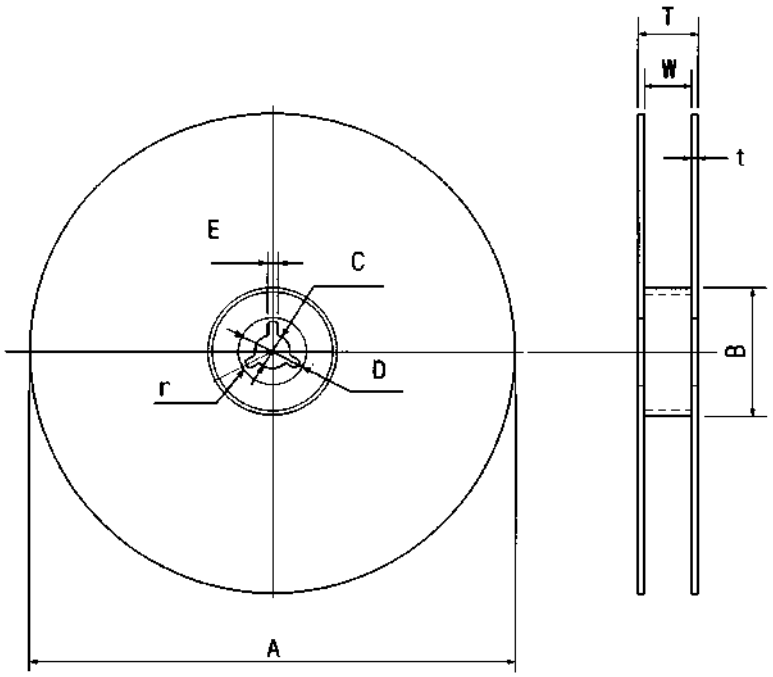


[Unit:mm]

| W | F | E | P0 | P1 | P2 | D0 | D1 | t1 | t2 | A | B |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 12.0± 0.3 | 5.5 ±0.05 | 1.75± 0.1 | 4.0 ±0.1 | 8.0 ±0.1 | 2.0 ±0.05 | Ø1.5± 0.1 | Ø1.0 ±0.25 | 0.3 ±0.05 | 2.10± 0.1 | 6.40± 0.1 | 5.20± 0.1 |

[Figure 2]

[Unit:mm]




| A | B | C | D | E | W | t | r |
|---|---|---|---|---|---|---|---|
| ?330 ±1.0 | ?100 ±0.5 | ?13 ±0.5 | ?21 ±0.8 | 2 ±0.5 | 13 ±0.3 | 3 max. | 1.0 max. |