

规格书编号

SPEC NO :

# 产品规格书

# SPECIFICATION

CUSTOMER 客户: \_\_\_\_\_  
PRODUCT 产品: \_\_\_\_\_ SAW RESONATOR  
MODEL NO 型号: \_\_\_\_\_ HDR868.35M S3  
PREPARED 编制: \_\_\_\_\_ CHECKED 审核: \_\_\_\_\_  
APPROVED 批准: \_\_\_\_\_ DATE 日期: \_\_\_\_\_ 2011-5-24

|                         |             |         |
|-------------------------|-------------|---------|
| 客户确认 CUSTOMER RECEIVED: |             |         |
| 审核 CHECKED              | 批准 APPROVED | 日期 DATE |
|                         |             |         |

无锡市好达电子有限公司  
Shoulder Electronics Limited

### 更改历史记录 History Record

| 更改日期<br>Date | 规格书编号<br>Spec. No. | 产品型号<br>Part No. | 客户产品型号<br>Customer No. | 更改内容描述<br>Modify Content | 备注<br>Remark |
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## 1. SCOPE

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

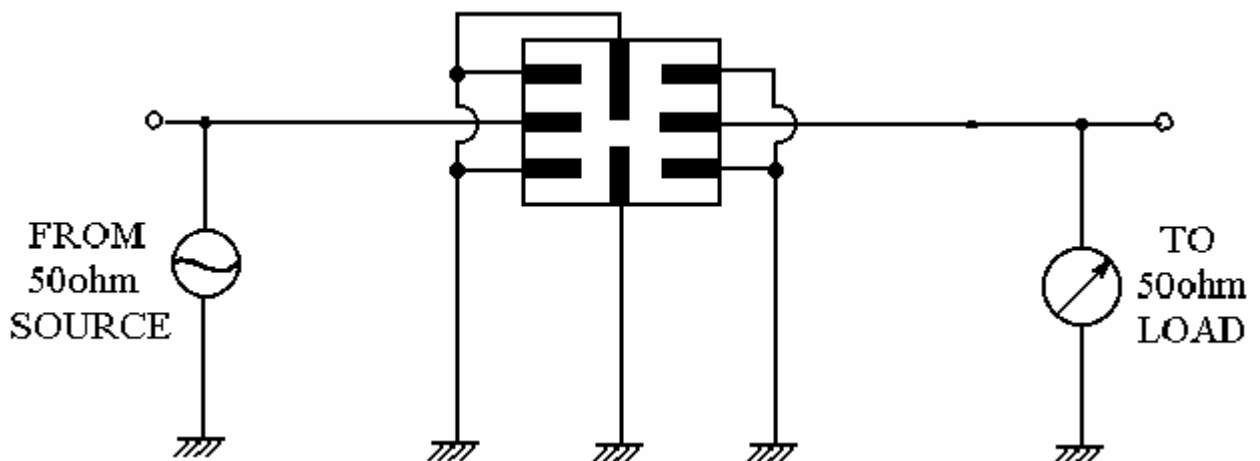
## 2. ELECTRICAL SPECIFICATION

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

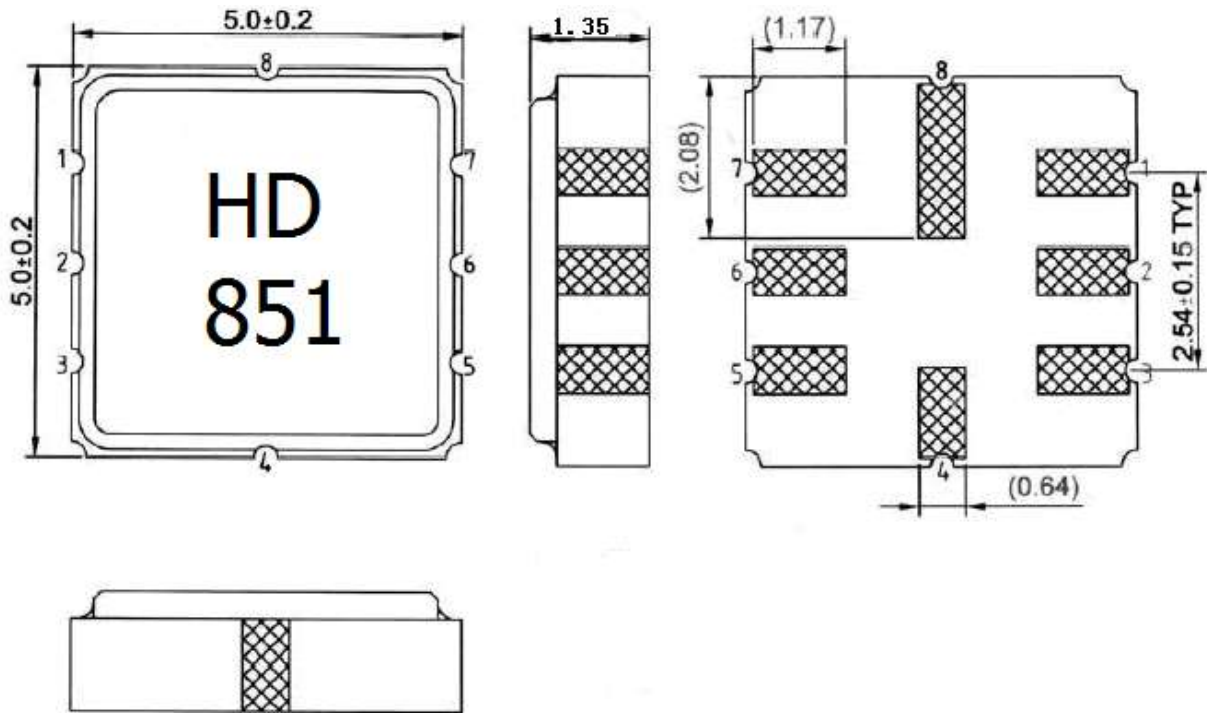
### 2.2 Electronic Characteristics

| Item                             | Unites                  | Minimum             | Typical       | Maximum |
|----------------------------------|-------------------------|---------------------|---------------|---------|
| Center Frequency                 | MHz                     | 868.100             | 868.350       | 868.600 |
| Insertion Loss                   | dB                      |                     | 1.5           | 3.5     |
| Quality Factor Unload Q          |                         | 5000                | 10000         |         |
| 50 Ω Loaded Q                    |                         | 1000                | 2000          |         |
| Temperature Stability            | Turnover Temperature    | °C                  | 39            |         |
|                                  | Turnover Frequency      | KHz                 | $f_0 \pm 2.7$ |         |
|                                  | Freq.temp.Coefficient   | ppm/°C <sup>2</sup> | 0.037         |         |
| Frequency Aging                  |                         | ppm/yr              | < ±10         |         |
| DC. Insulation Resistance        | M Ω                     | 1.0                 |               |         |
| RF Equivalent RLC Model          | Motional Resistance R1  | Ω                   | 23            | 20      |
|                                  | Motional Inductance L1  | μ H                 | 20.78         |         |
|                                  | Motional Capacitance C1 | fF                  | 1.6179        |         |
| Pin 1 to Pin 2 Staic Capacitance | pF                      | 2.7                 | 3.1           | 3.5     |
| Transducer Static Capacitance    | pF                      |                     | 1.8           |         |

## 3. TEST CIRCUIT



#### 4. DIMENSION



2.Input

6.Output

1.3.5.7.Gound

4.8 Ground

#### 5. ENVIRONMENTAL CHARACTERISTICS

##### 5-1 High temperature exposure

Subject the device to  $+85^{\circ}\text{C}$  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  $-40^{\circ}\text{C}$  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  $-40^{\circ}\text{C}$  for 30 minutes. Following by a high temperature of  $+85^{\circ}\text{C}$  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  $260^{\circ}\text{C} \pm 10^{\circ}\text{C}$  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  $245^{\circ}\text{C} \pm 5^{\circ}\text{C}$  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. Packing

### 7.1 Dimensions

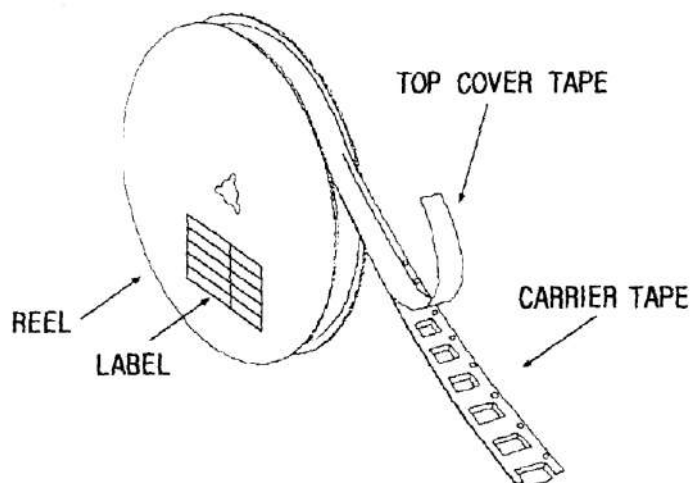
- (1) Carrier Tape: Figure 1
- (2) Reel: Figure 2
- (3) The product shall be packed properly not to be damaged during transportation and storage.

### 7.2 Reeling Quantity

|               |     |
|---------------|-----|
| 1000 pcs/reel | 7"  |
| 3000 pcs/reel | 13" |

### 7.3 Taping Structure

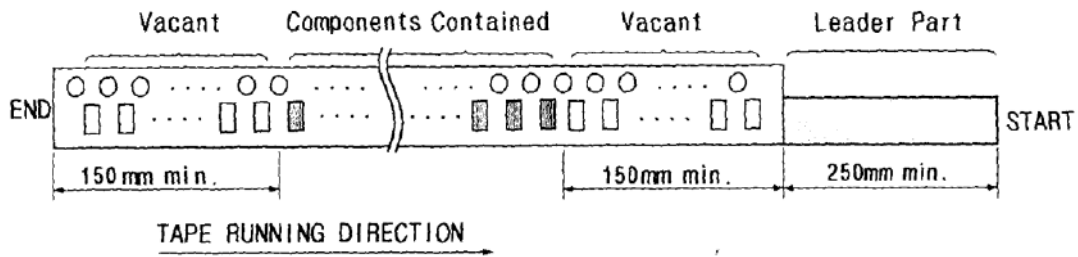
- (1) The tape shall be wound around the reel in the direction shown below.



(2) Label

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

(3) Leader part and vacant position specifications.

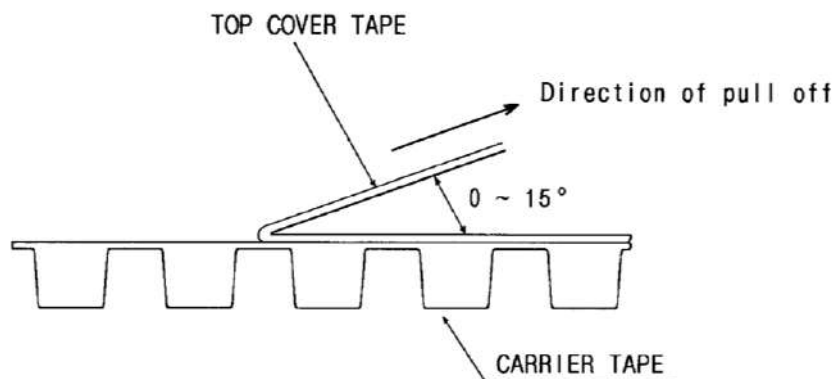


## 8. TAPE SPECIFICATIONS

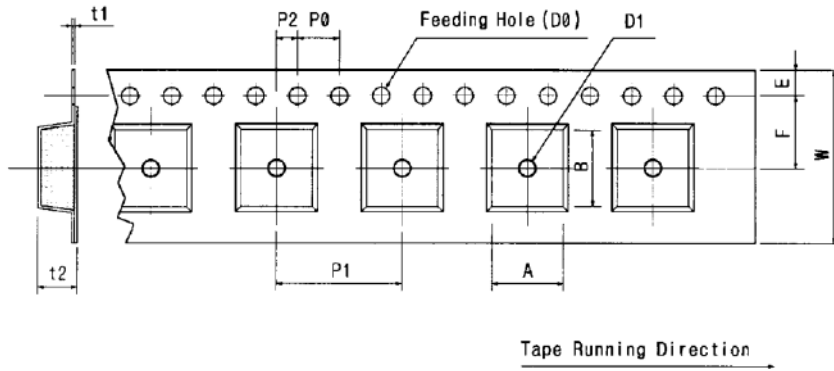
8.1 Tensile Strength of Carrier Tape: 4.4N/mm width

8.2 Top Cover Tape Adhesion (See the below figure)

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



[Figure 1] Carrier Tape Dimensions

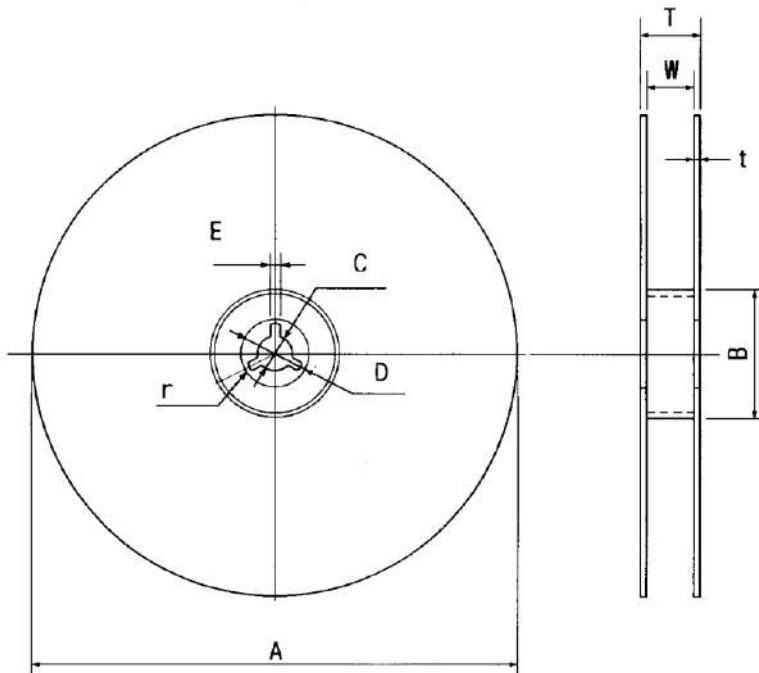


[Unit:mm]

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

[Figure 2]

[Unit:mm]



| A    | B    | C    | D    | E    | W    | t    | r    |
|------|------|------|------|------|------|------|------|
| Ø330 | Ø100 | Ø13  | Ø21  | 2    | 13   | 3    | 1.0  |
| ±1.0 | ±0.5 | ±0.5 | ±0.8 | ±0.5 | ±0.3 | max. | max. |