

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: \_\_\_\_\_ HDR315M SMD-4  
PREPARED 编制: \_\_\_\_\_ CHECKED 审核: \_\_\_\_\_  
APPROVED 批准: \_\_\_\_\_ D A T E 日期: \_\_\_\_\_ 2006-5-11

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 Date	规格书编号 Spec. No.	产品型号 Part No.	客户产品型号 Customer No.	更改内容描述 Modify Content	备注 Remark

## 1. SCOPE

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

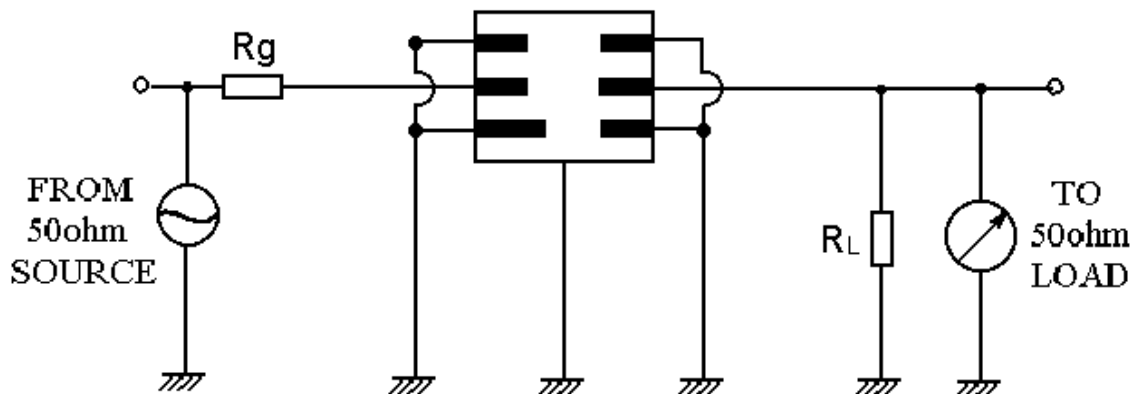
## 2. ELECTRICAL SPECIFICATION

DC Voltage VDC	10V
AC Voltage Vpp	10V 50Hz/60Hz
Operation temperature	-40°C to +85°C
Storage temperature	-45°C to +85°C
RF Power Dissipation	0dBm

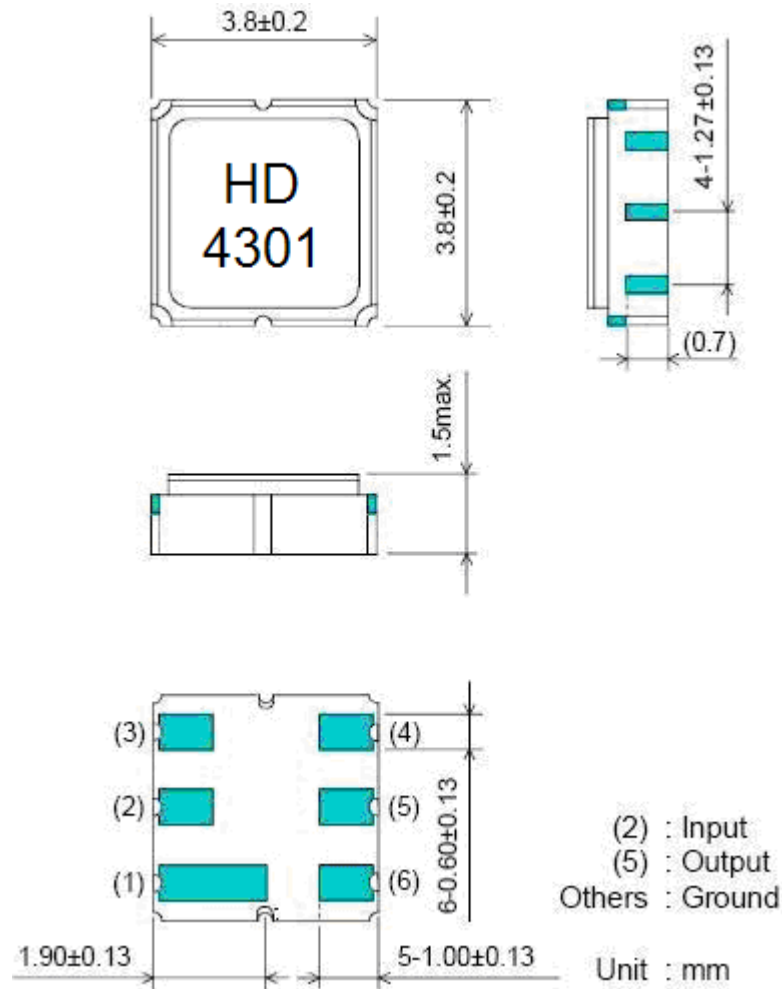
### 2.2 Electronic Characteristics

Item		Unites	Minimum	Typical	Maximum
Center Frequency		MHz	314.925	315.000	315.075
Insertion Loss		dB		1.5	2.2
Quality Factor Unload Q			10000	15000	
50 Ω Loaded Q			800	1500	
Temperature Stability	Turnover Temperature	°C	10	25	40
	Freq.temp.Coefficient	ppm/°C <sup>2</sup>		0.037	
Frequency Aging		ppm/yr		≤10	
DC. Insulation Resistance		MΩ	1.0		
RF Equivalent RLC Model	Motional Resistance R1	Ω		17	26
	Motional Inductance L1	μ H		110.43	
	Motional Capacitance C1	fF		2.3114	
Transducer Static Capacitance		pF		2.8	

## 3. TEST CIRCUIT



**4. DIMENSION**



**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

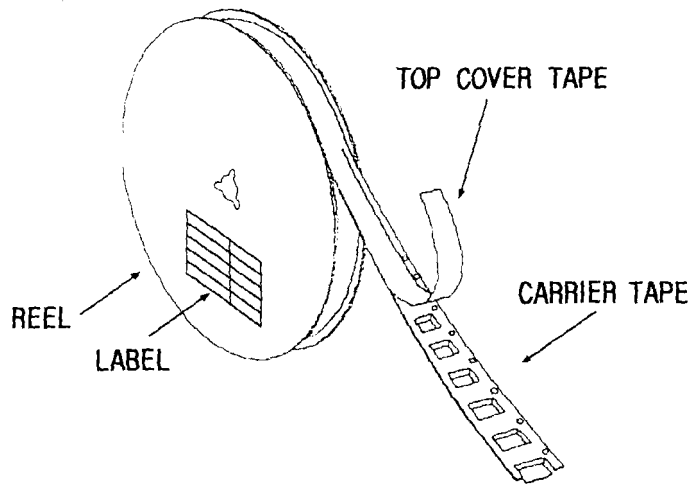
- (1) Carrier Tape: Figure 1
- (2) Reel: Figure 2
- (3) The product shall be packed properly not to be damaged during transportation and storage.

### 7.2 Reeling Quantity

1000 pcs/reel 7''  
3000 pcs/reel 13''

### 7.3 Taping Structure

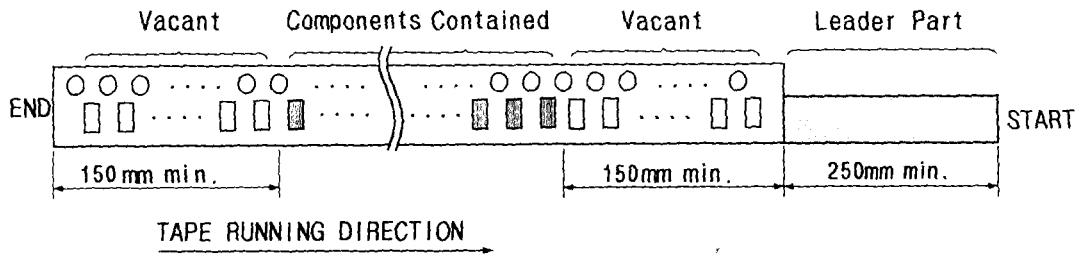
- (1) The tape shall be wound around the reel in the direction shown below.



(2) Label

Device Name	
User Product Name	
Quantity	
Lot No.	

(3) Leader part and vacant position specifications.



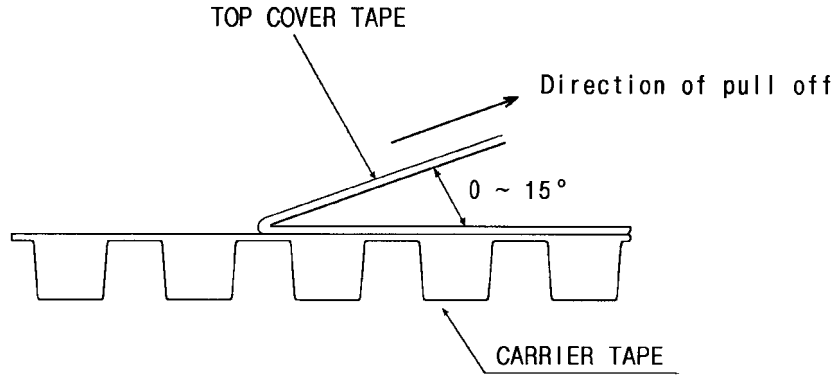
## 8. TAPE SPECIFICATIONS

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

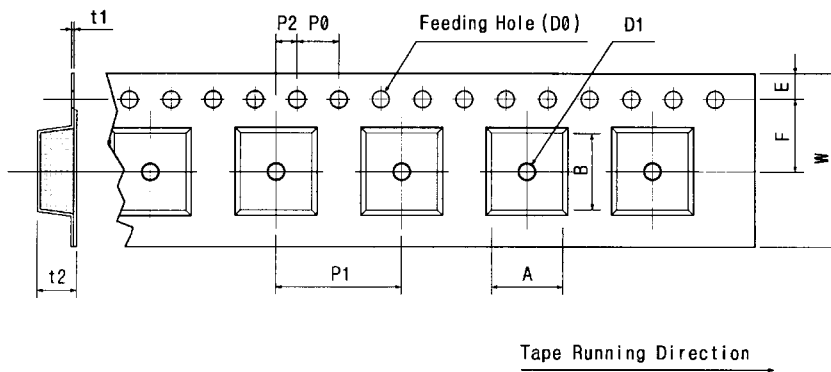
8.2 Top Cover Tape Adhesion (See the below figure)

- (1) pull off angle: 0~15°
- (2) speed: 300mm/min.

(3) force: 20~70g



[Figure 1] Carrier Tape Dimensions

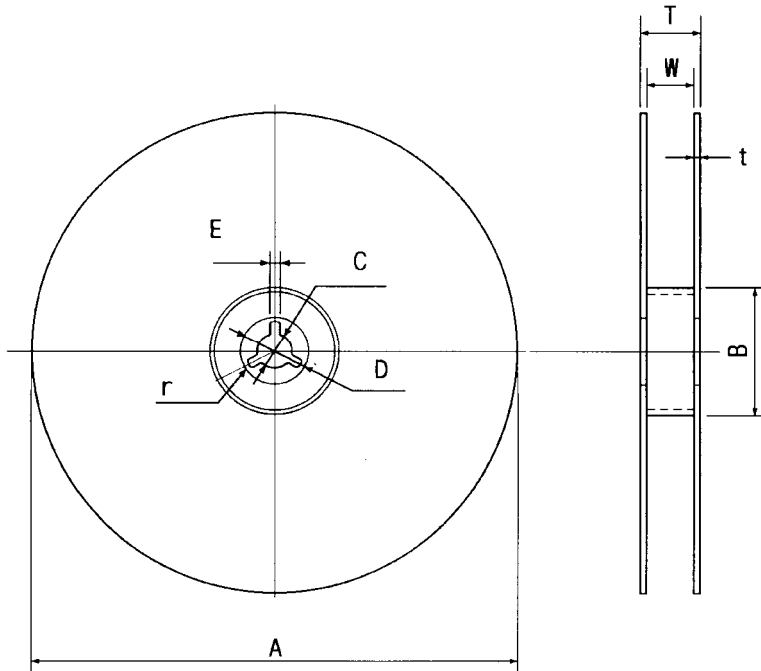


[Unit:mm]

W	F	E	P0	P1	P2	D0	D1	t1	t2	A	B
12.00	5.50	1.75	4.00	8.00	2.00	Ø1.50	Ø1.0	0.25	1.65	4.04	4.10
±0.30	±0.10	±0.10	±0.10	±0.10	±0.10		±0.25	±0.05	±0.10	±0.10	±0.10

[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.