

规格书编号

SPEC NO :

产品规格书

SPECIFICATION

CUSTOMER 客 户: _____

PRODUCT 产 品: _____ CRYSTAL RESONATOR

MODEL NO 型 号: _____ ZM206-32.768-12.5-20

PREPARED 编 制: _____ LEO CHECKED 审 核: _____ YORK

APPROVED 批 准: _____ LIUMING D A T E 日 期: _____ 2012-5-14

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

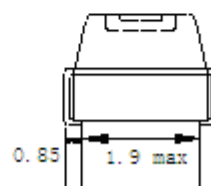
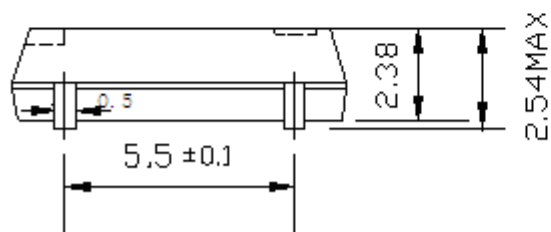
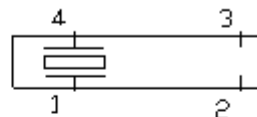
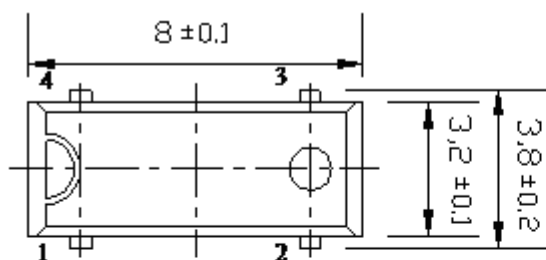
更改历史记录 History Record

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. SPECIFICATIONS

1. Frequency:	32.768KHZ
2. Holder Type:	8.0*3.8
3. frequency Tolerance:	$\pm 20\text{ppm at } 25^{\circ}\text{C} \pm 5^{\circ}\text{C}$
4. Equivalent Series Resistance:	50K Ω Max
5. Storage Temperature Range:	-40 $^{\circ}\text{C}$ TO 85 $^{\circ}\text{C}$
6. Operating Temperature Range:	-20 $^{\circ}\text{C}$ TO 70 $^{\circ}\text{C}$
7. Frequency Characteistics Over Temperatnre:	$-0.036 \pm 0.006 \text{PPM}/^{\circ}\text{C}^2$
8. Load Capacitance (CL):	12.5PF
9. Drive Level:	1.0uW MAX
10.Shunt Capacitance:	<2.0PF MAX
11.Insulation Resistance:	500M Ω Min at D.C.100 V
12. Capacitance ratio	650 max
13.Aging:	$\pm 5\text{ppm}/\text{Year}$
14.Marking	32.768

2. Dimensions(mm):

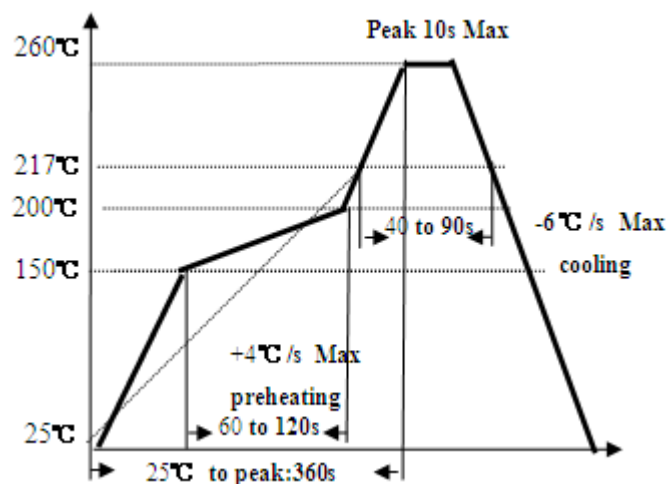


- 1: Input
- 2: Ground
- 3: Ground
- 4: Output

FOOTPRINT



3. Resistance to soldering heat



*Reflow soldering cure see the chart.

*Soldering iron method: 350°C±10°C 5s Max

4. PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS

4-1. Humidity

Subject the crystal at $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ and 90% - 95% RH for 96 ± 4 hours. Then release the crystal into the room conditions for 1 hour prior to the measurement.

4-2. High Temperature Exposure

Subject the crystal to $85^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 96 ± 4 hours. Then release the crystal into the room conditions for 1 hour prior to the measurement.

4-3. Low Temperature

Subject the crystal to $-20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 96 ± 4 hours. Then release the crystal into the room conditions for 1 hour prior to the measurement.

4-4. Mechanical Shock

Drop the crystal randomly onto a concrete floor from the height of 75cm 3 times.

4-5. Temperature Cycling

Subject the crystal to -30°C for 30 min. followed by a high temperature of $+85^{\circ}\text{C}$ for 30 min. Cycling shall be repeated 5 times with a transfer time of 15 sec. at the room condition. Then release the resonator into the room temperature for 2 hours prior to the measurement.

4-6. Vibration

Subject the crystal to vibration for 2 hours each in x, y, and z axes with the amplitude of 1.5mm, the frequency shall be varied uniformly between the limits of 10-55 Hz.

4-7. Solder Ability

Dip the crystal terminals no closer than 2 mm into the solder bath at $235^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 3 ± 0.5 sec. more than 95% of the terminal surface of the crystal shall be covered with fresh solder.

4-9. Lead Fatigue

1) Pulling Test

Weight along with the direction of terminals without any shock 0.5kg for 10 ± 1 sec.; The crystal shall show no evidence of damage and shall fulfill all the initial electric characteristics.

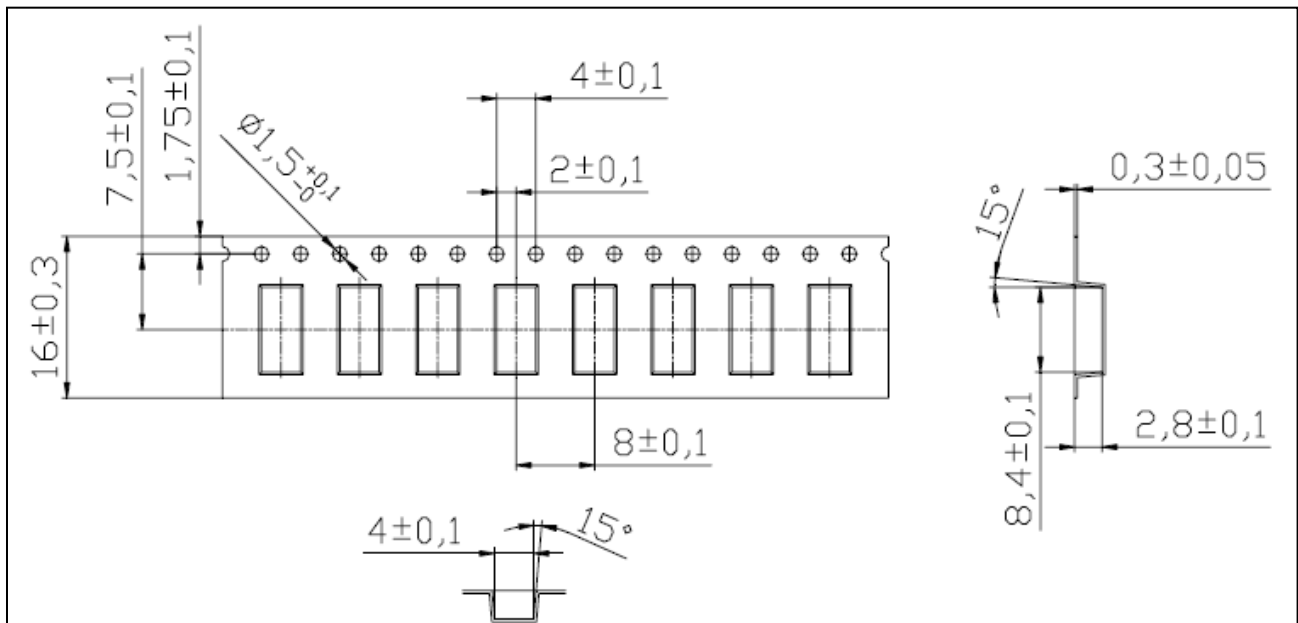
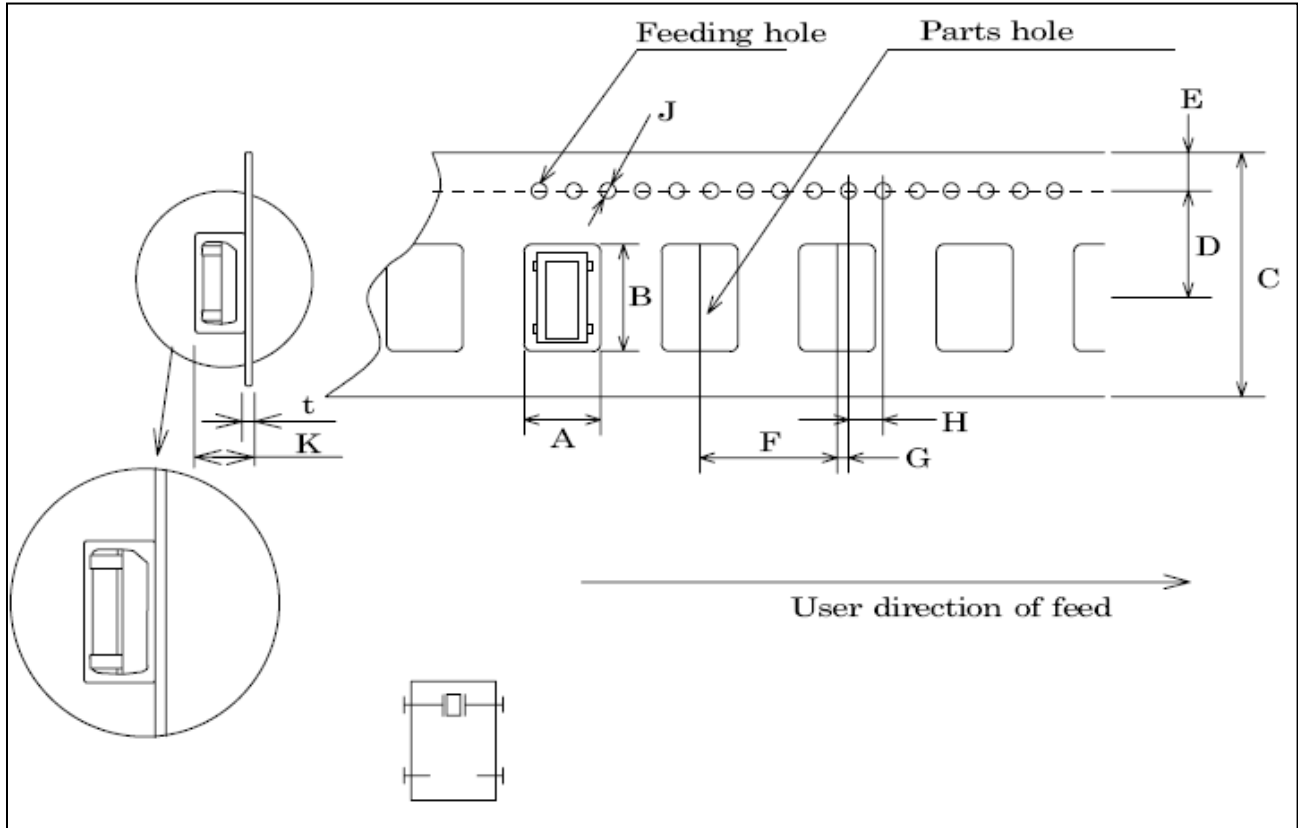
2) Bending Test

Lead shall be subject to withstand against 90 degree bending at its stem. This

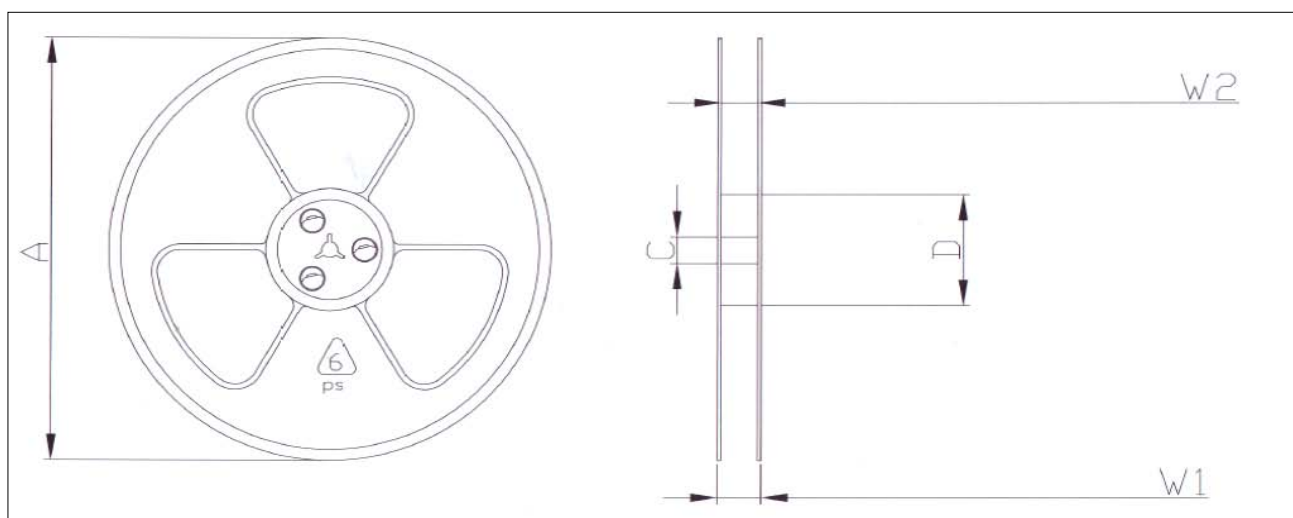
operation shall be done towards both direction; The crystal shall no evidence of damage and shall fulfill all the initial electric characteristics.

5. Carrier tape and Tape reel

5.1 Dimensions of carrier tape

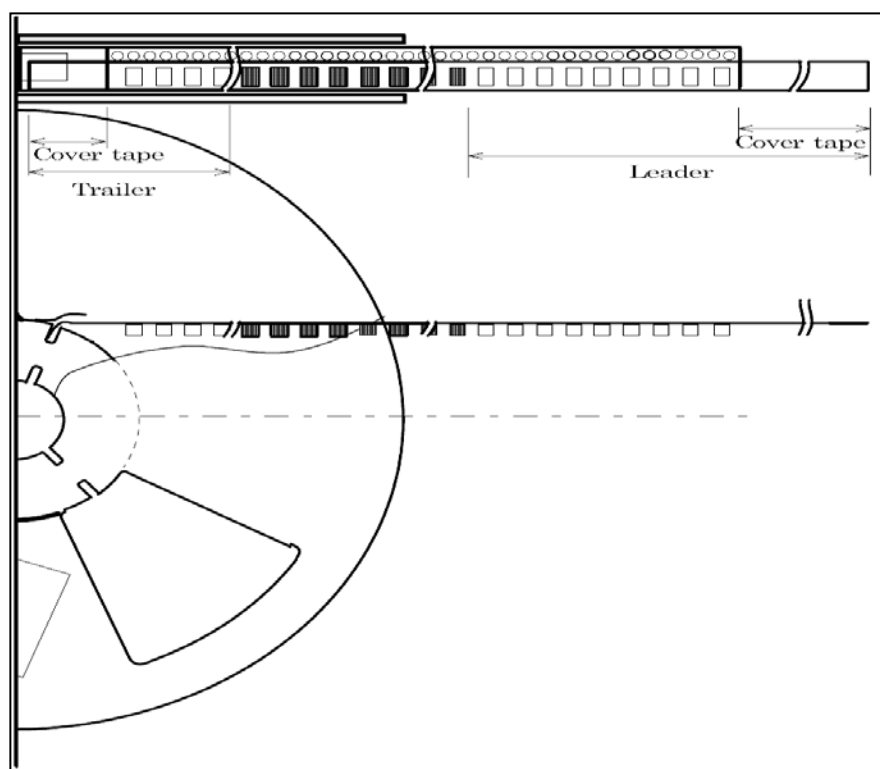


5.2 Dimensions of tape reel and marking



規格	$A \pm 0.5$	$C \pm 0.2$	$D \pm 0.3$	$W1 \pm 0.2$	$W2^{+0.4}_{+0.2}$
330*100*16	330	25	100	20	16

5.3 Carrier tape leader and trailer specifications



Leader	Cover tape	The length of cover-tape in the leader is more than 400mm to 560mm including empty embossed area.
	Carrier tape	After all products were packaged, must remain more than twenty pieces or 30mm to 70mm empty area, which should be sealed by cover-tape.
Trailer	Cover tape	The tip of cover-tape shall be fixed temporary by paper tape and roll around the core of reel one round.
	Carrier tape	The empty embossed area which are sealed by top cover-tape must remain more than 110 mm.

5.4 Storage condition

Temperature: +40°C MAX. Relative humidity 80% MAX.

5.5 Standard quantity

3000PCS/reel

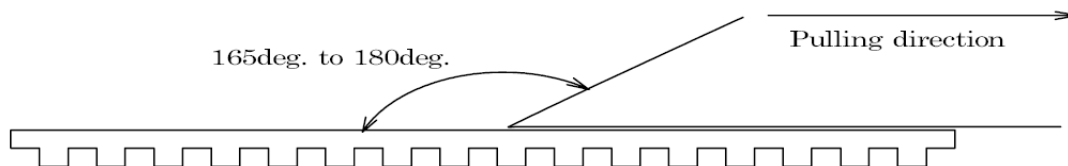
5.6 Release strength of cover tape

It has to between 20-70 gram under following condition

Pulling direction: 165deg. To 180deg.

Speed: 300mm/min

Otherwise unless specified



5.7 Vacant sections of the products

There are no more than two vacant sections in series except for the area of the leader and terminal.

5.8 Removal and repair of the failure products

In case we find any failure after taping, we may cut the top-covertape along the direction of tension to exchange or remove the products and re-pack with the cellophane tape in the state that according to the specification as shown above.

5.9. Outer box

Crystal units shall be packed in inner box by production lot.

Outer carton size would be hanged depending on lot size.

The direction label shall be put on outer carton.

