

承 认 书

SPECIFICATION FOR APPROVAL

客户名称: Customer _____

货 名: Description MC-146 石英晶体谐振器

客户料号: Part No _____

物料编号: Code No MC14600327122090

频 率: Frequency 32.768KHz

日 期: Date 2020-05-22

备 注: RoHS 豁免条款 7 (a)

制作(Prepare by)	检查(Check by)	批准 (Approve by)
江丹娜	甘瑛	张刚

客户批准 Approve by customer	
批准日期 Approval date	

Add: 广东省深圳市华发北路桑达工业区桑达雅苑 7P

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Tel: 86-755-83048260

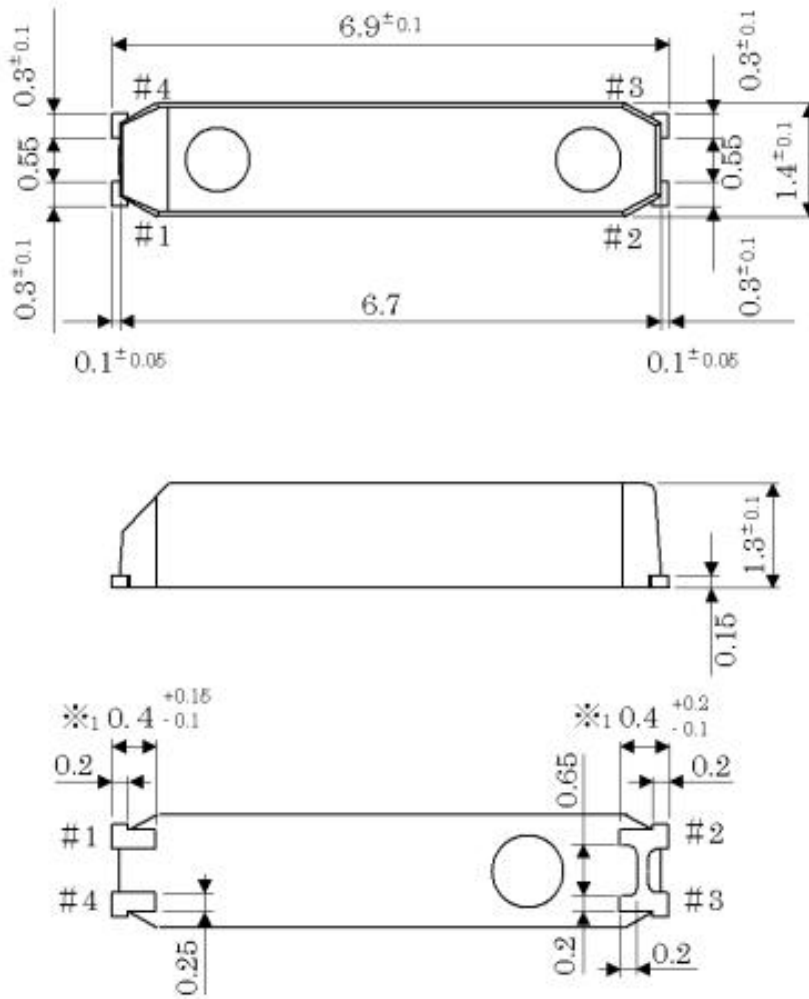
86-755-83048290

Fax: 86-755-83048280

1. Specifications

Item		Symbol	MC-146	Remark
Nominal frequency		f	32.768KHZ	Fundamental
Temperature	Storage	T _{STG}	-55℃to +125℃	Store as bare product after unpacking
	Operating	T _{OPR}	-40℃to +85℃	
Maximum drive level		DL	1.0μW Max	
Frequency tolerance		Δ f/f	± 20ppm	Ta=+25℃,DL=0.1μW
Peak temperature		Ti	25±5℃	
Temperature coefficient(frequency)		B	-0.04ppm × 10 ⁻⁶ /℃ ² Max	
Load capacitance		CL	12.5pf	
Series resistance		R1	90k Ω Max	
Motional capacitance		C1	1.9fF Typ.	
Shunt capacitance		C0	0.8pF Typ.	
Insulation resistance		IR	500M Ω Min	
Aging		f-age	± 3 × 10 ⁻⁶ ppm/year Max	Ta=+25 ± 3℃,first year

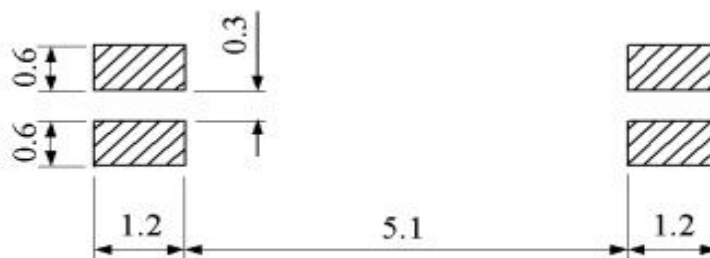
2. Dimensions (unit: mm)



Do not connect #2 and #3 to external device.

Metal may be exposed on the top or bottom of this product. This won't affect any quality, reliability or electrical spec.

2.1 Recommended soldering pattern (unit: mm)

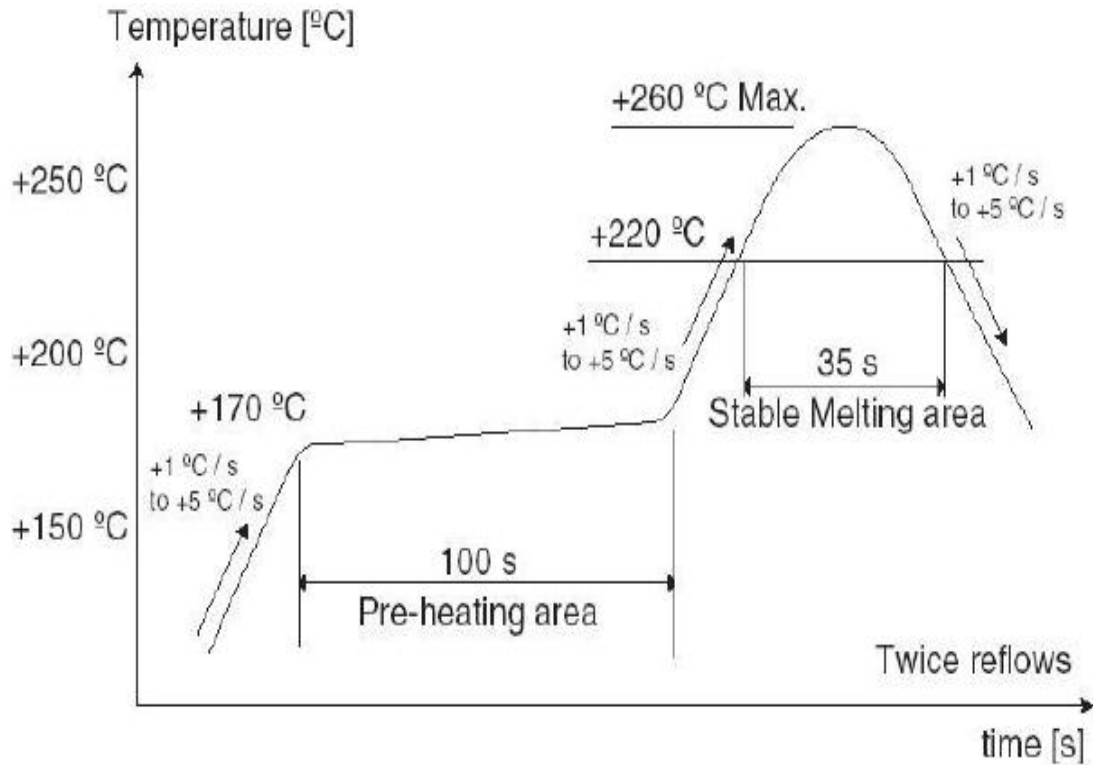


3. Recommended Reflow Profile

Per heating temperature: +170 °C

Peak temperature must not exceed =260 °C

and the duration of over +220 °C should be 35s

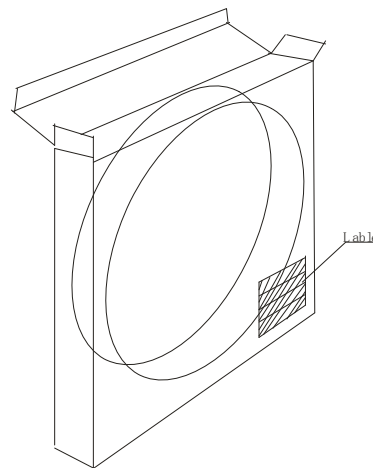
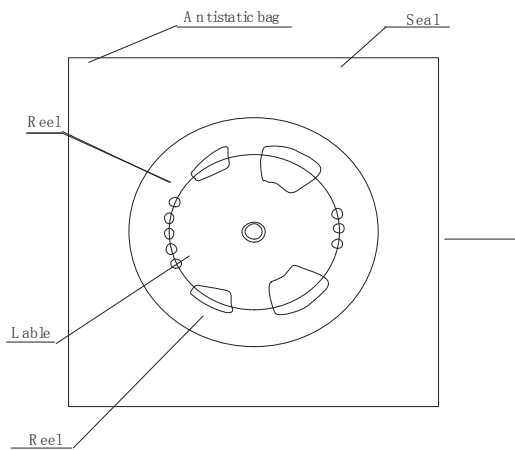
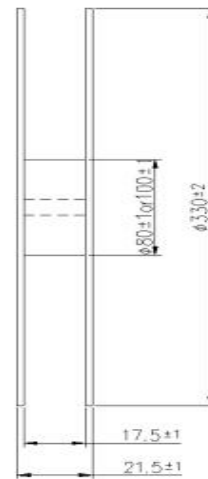
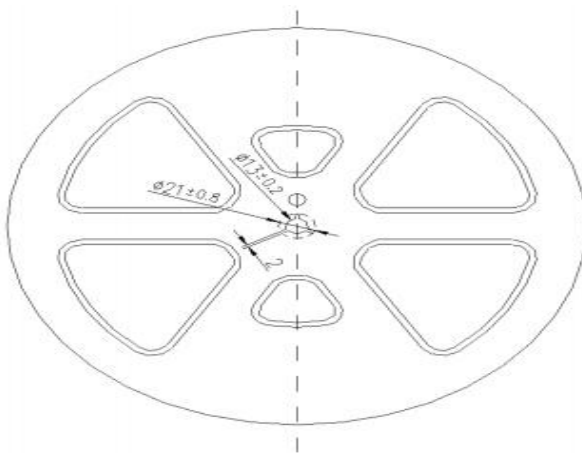
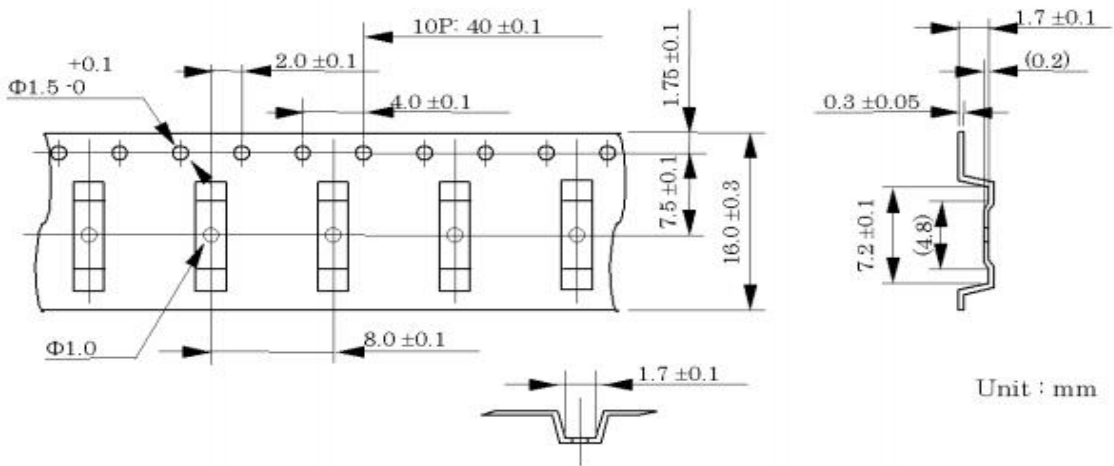


4. Reliability specifications

No.	Item	Condition	Standard
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1.	Vibration	(1)Vibration Frequency 10 to 55Hz (2)Vibration Amplitude 1.5mm (3) Cycle Time 1-2min(10-55-10Hz) (4)Direction X.Y.Z (5)Duration 2h/each direction	Frequency Change:±10ppm Max. Resistance Change:±15% or 5kohm Max.
2.	Shock	3 Times free drop from 75cm height to hard wooden board of thickness more than 30mm	Frequency Change:±10ppm Max. Resistance Change:±15% or 5kohm Max.
3.	Hermetic seal	Helium leak detector Checked:before the molded crystal units	less than 1 × 10 EXP(-7) mbar.l/sec.
4.	Solder ability	Dip the leads of crystal units into the solution (7-10%) of rosin 3±0.5s,then dip it into the tank 5-10s. Temperature of solder melted tank is 245°C±5°C	The dipped surface of the leads should be at least 95% covered with continuous new solder coating
5.	High temperature	240 hours at +85°C ± 2°C After 1-2hours past at room temperature from following	Frequency Change:±10ppm Max. Resistance Change:±25% or 10kohm Max.
6.	Low temperature	240 hours at -40°C±2°C After 1-2hours past at room temperature from following test.	Frequency Change:±10ppm Max. Resistance Change:±15% or 5kohm Max.
7.	Humidity	240 hours at +40°C±2°C,relative humidity 90-95% After 1-2hours past at room temperature from following	Frequency Change:±10ppm Max. Resistance Change:±25% or 10kohm Max.

5、Packaging standard



Standard quantity: 9000 pcs/reel

单击下面可查看定价，库存，交付和生命周期等信息

[>>JGHC\(晶光华\)](#)