

新品 变更



产品规格书

SPECIFICATION FOR APPROVAL

产品名称 Product Name:	石英晶体谐振器 Quartz crystal unit
产品型号 Product Type:	SMD3225
标称频率 Nominal Freq:	13.521270 MHz
明德亨料号 MDH P/N:	3202135211
客户料号 Customer P/N:	

客户承认 Approved By Customer	
签章 Signature:	日期 Date:

Date: 2023年5月17日

批准 Accepted	审核 Checked	拟制 Issued
林宗宏	刘德成	尹剑

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MSL:Level 1

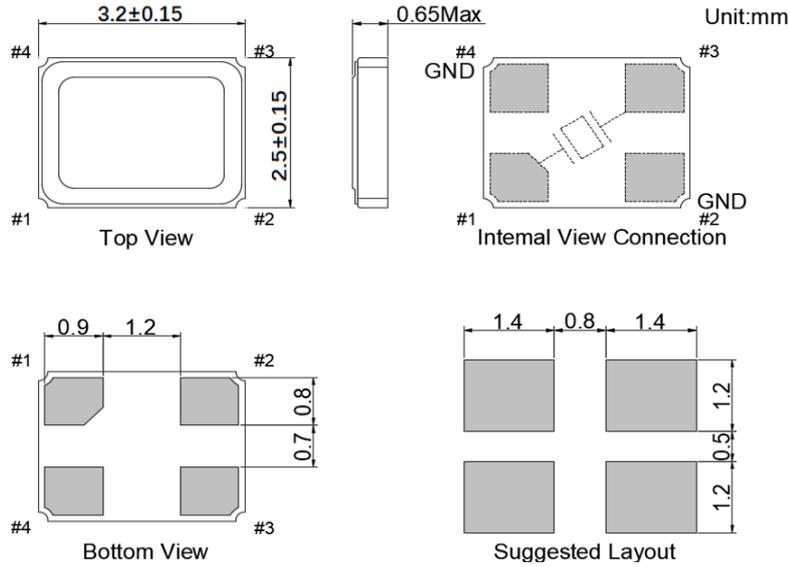
RoHS Compliant

CONTENT

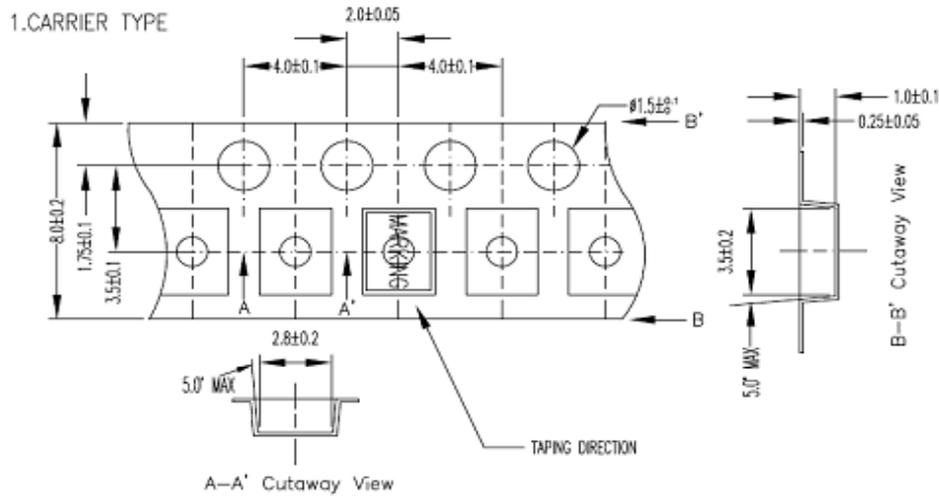
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2.0 外形尺寸、外观 / Outline dimensions、Appearances

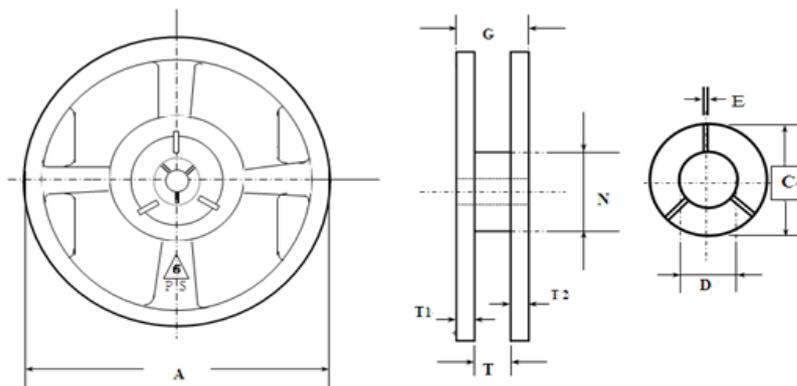
2.1 产品外形尺寸(mm) / Product outline dimension(mm)



2.2 载带外形尺寸图 (mm) /Carrier Dimensional Drawing (mm)



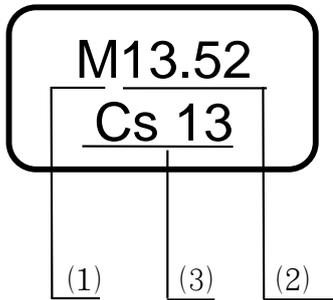
2.3 编带盘外形尺寸图(mm) /Reel Dimensional Drawing (mm)



☆图示尺寸及公差 (mm) :

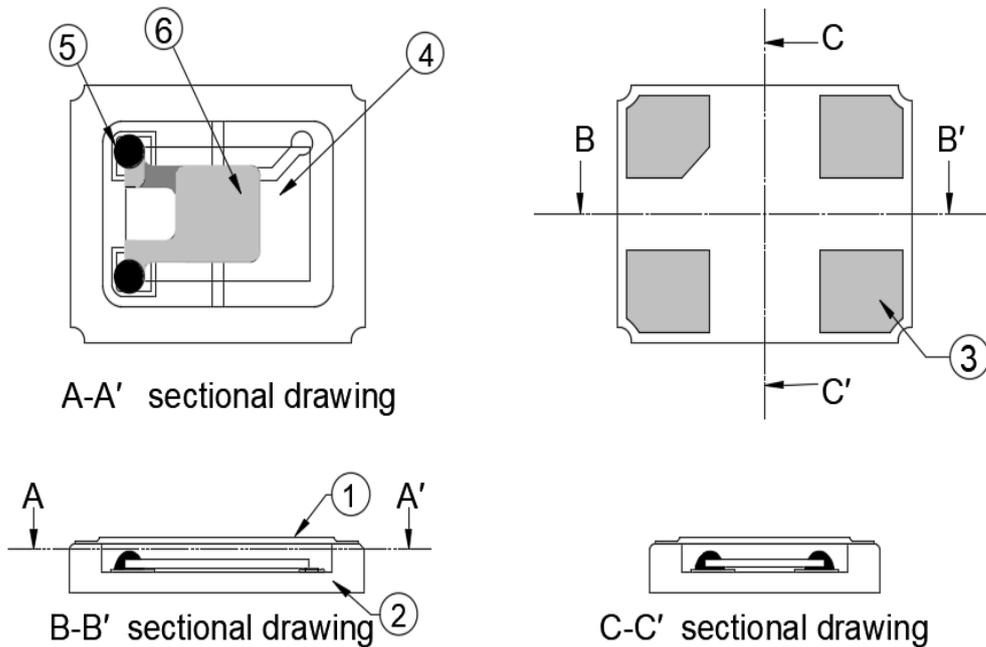
部位	A	T	T1, T2	N	C	D	E	G
尺寸	178	9.0	1.4	60.2	20.2	13.2	2.5	11.5
公差	±2.0	±0.5	±0.2	±0.5	±1.0	±0.5	±0.5	±1.4

2.4 印字 / Marking



- (1) 代表公司Logo Company Logo
- (2) 代表标称频率 Nominal Freq
- (3) 代表批次号 Batch number

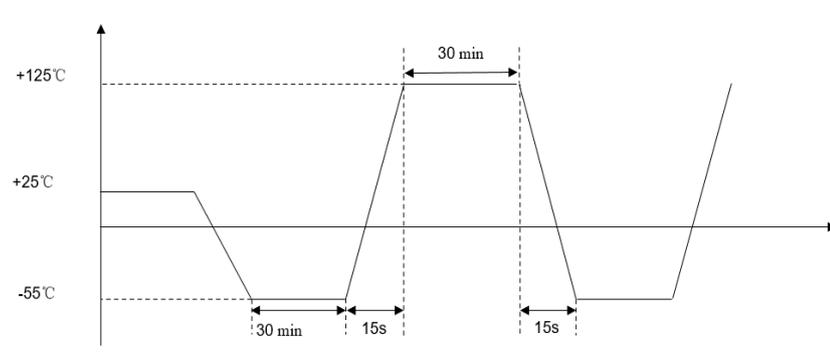
3.0 内部构造图 / Product internal structure



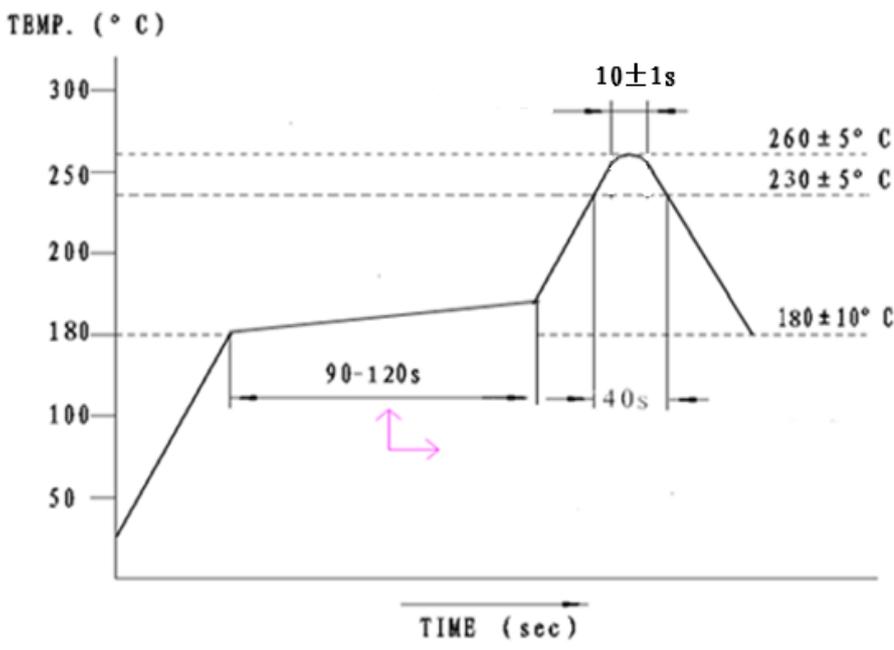
Unit Weight: 0.014±0.002g/pcs

NO.	COMPONENETS	MATERIALS	SPECIFICATIONS
1	LID	Kovar (Fe/Co/Ni)	-
2	Package	Ceramic (Al ₂ O ₃) + Au/Ni	Ni plating + Au plating
3	Pad	Au/Ni/W	Tungsten metalize + Ni plating + Au plating
4	Crystal blank	SiO ₂	-
5	Conductive adhesive	Resin+Ag	Silicon resin
6	Electrode	Ag	-

4.0 石英晶体之可靠性 / Product reliability

项目 (Item)	条件 (Condition)	结果 (Result)
A.1	耐低温性 (耐寒性) 测试 (Cold resistance)	(I)
	Stored at $-55\pm 2^{\circ}\text{C}$ for 500 ± 2 hrs then $25\pm 2^{\circ}\text{C}$ 2 hrs before testing	
A.2	耐高温性 (耐热性) 测试 (Heat resistance)	(I)
	Stored at $125\pm 2^{\circ}\text{C}$ for 500 ± 2 hrs then $25\pm 2^{\circ}\text{C}$ 2 hrs before testing	
A.3	耐湿热性 (Humidity Resistance Result)	(I)
	稳态温度: $85\pm 2^{\circ}\text{C}$; 湿度: $85\pm 3\% \text{RH}$; 时间: 500 ± 2 hrs Steady temperature: $85\pm 2^{\circ}\text{C}$; humidity: $85\pm 3\% \text{RH}$; time: 500 ± 2 hrs	
A.4	老化测试 (Aging)	(I)
	Stored at $85\pm 2^{\circ}\text{C}$ for 720 ± 2 Hrs then $25\pm 2^{\circ}\text{C}$ 2 Hrs before testing Stored at $25\pm 2^{\circ}\text{C}$ for 1 year	
A.5	气密性 (Leakage)	(IV)
	细漏 Fine leak: Put the product in the Helium pressure tank, 4 ~ 5kgf/cm^2 , 0.5hrs.	
A.6	冷热冲击实验 温度循环 (Temperature Cycle)	(I)
	<p>$-55^{\circ}\text{C} \sim 125^{\circ}\text{C}$, Retain 30Min, 100 cycles</p>  <p>温度循环 (Temperature Cycle)</p>	

4.1 机械性能 / Mechanism characteristics

B.1	跌落测试 (Drop Test) Device are dropped from a height of 150 cm onto 2cm thickness stainless plate executing 3 times of random drops.	(II)
B.2	耐振性 (Resistance of Vibration) Frequency: 10~55Hz, amplitude(total excursion): 1.5mm±15%,3 direction (X,Y,Z) each 2 hrs then 25±2°C 2 hrs before testing	(I)
B.3	可焊性试验 (Solderability) 245±5°C, 5±1s	(III)
B.4	耐焊接热 (Reflow) Resistance to soldering heat (Reflow) 参考曲线图 (Reference Curve) :	(II)
	 <p>The graph shows the temperature profile for the reflow test. The y-axis is TBMP. (°C) ranging from 50 to 300. The x-axis is TIME (sec). The curve starts at 50°C, rises to 180°C in 90-120s, then to a peak of 260±5°C in 10±1s, and finally returns to 180±10°C in 40s. A pink arrow points to the 90-120s interval.</p>	

项目 Item	结果编号 Result NO.	规格要求 Specification Requirements
1	(I)	频率变化 $<\pm 10\text{ppm}$; 电阻变化 $<\pm 5\Omega$ 或规格电阻的15%, 取大者 Frequency variation $<\pm 10\text{ppm}$; Resistance variation $<\pm 5\Omega$ or $\pm 15\%$ of RR spec., select the bigger value.
2	(II)	频率变化 $<\pm 5\text{ppm}$; 电阻变化 $<\pm 5\Omega$ 或规格电阻的15%, 取大者 Frequency variation $<\pm 5\text{ppm}$; Resistance variation $<\pm 5\Omega$ or $\pm 15\%$ of RR spec., select the bigger value.
3	(III)	上锡覆盖率高于95% The covering rate of Tin-plating is more than 95%.
4	(IV)	$<1 \cdot 10^{-9}\text{Pa}\cdot\text{m}^3/\text{s}$ Max

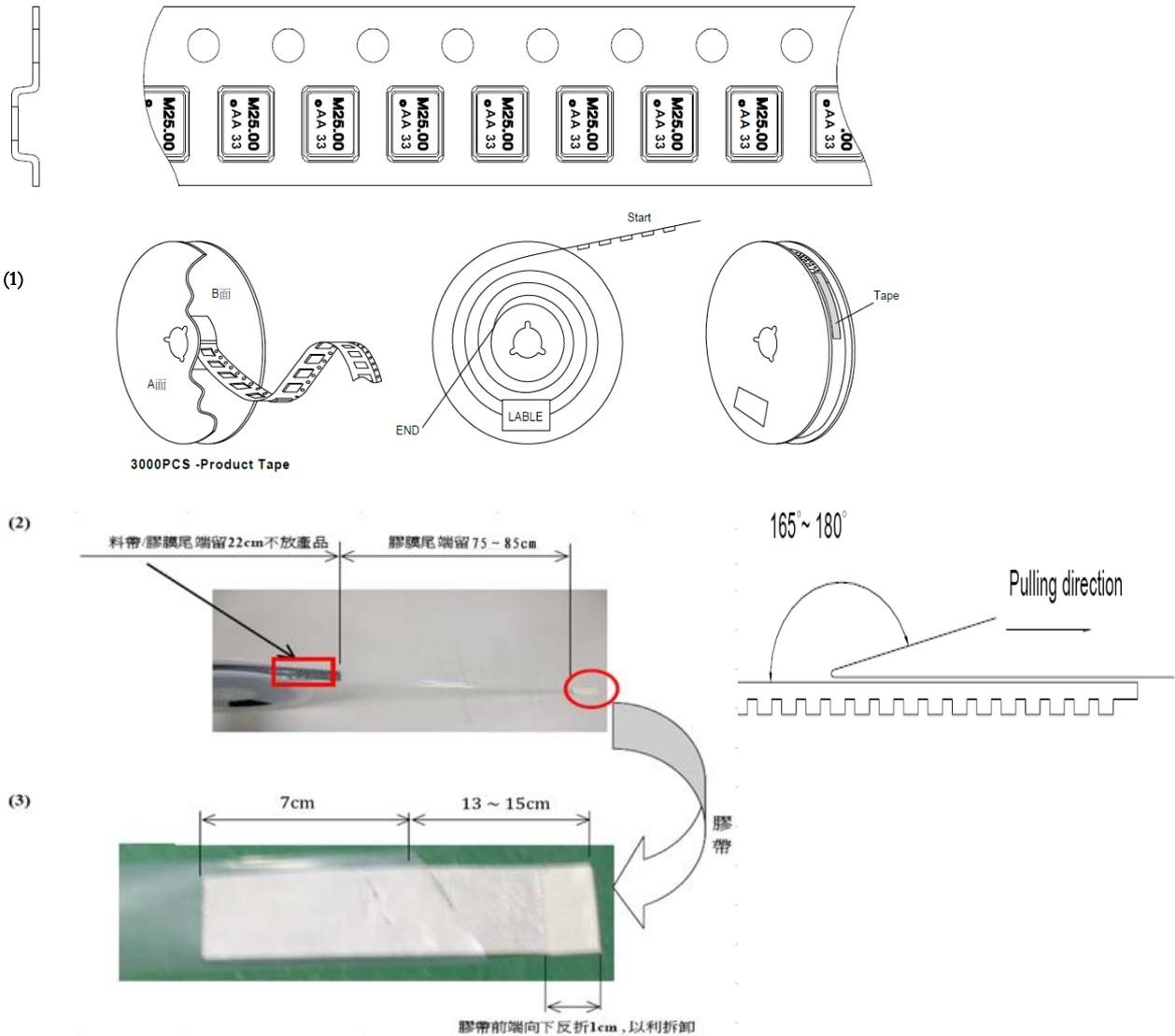
5.0 生产商及产地说明 / Manufacturer and origin

生产商/Manufacturer: 四川明德亨电子科技有限公司SiChuan MDH Technology Co.,Ltd包装方式: 纸箱 39cm×37cm×20cm (±1.5cm)Package: Paper carton 39cm×37cm×20cm (±1.5cm)

每箱数量: 4000pcs/盘 × 60盘, 合计: 240,000pcs

Quantity Per Box: 4000pcs/reel × 60reels, total: 240,000pcs

5.1 包装规格 / Package specification



[STORAGE]

1. 未开封状态下的贮存期限为交货后12个月, 请在期限内使用。如果日期已超, 请在使用前对其电气特性再次确认。
The storage period in unopened condition is 12 months after delivery, please use within the period. If the date is over, double-check its electrical characteristics before use.

2. 本产品为电子元件, 请勿在结露状态下储存和使用。
This product is electronic component. Please do not store and use it in Dewy State.

3. 贮存环境温度为5°C ~35°C, 相对湿度为30% ~ 75%, 无阳光照射。
The storage environment shall be 5°C ~35°C temperature and 30% ~ 75%RH humidity and free from the sun shine.