

新品 变更



产品规格书

SPECIFICATION FOR APPROVAL

产品名称 Product Name:	石英晶体振荡器
产品型号 Product Type:	SMD3225 OSC CMOS
标称频率 Nominal Freq:	100.000000 MHz
明德亨料号 MDH P/N:	2.1.3.A000027
客户料号 Customer P/N:	

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

Date: 2024年12月13日

批准 Accepted	审核 Checked	拟制 Issued
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RoHS Compliant

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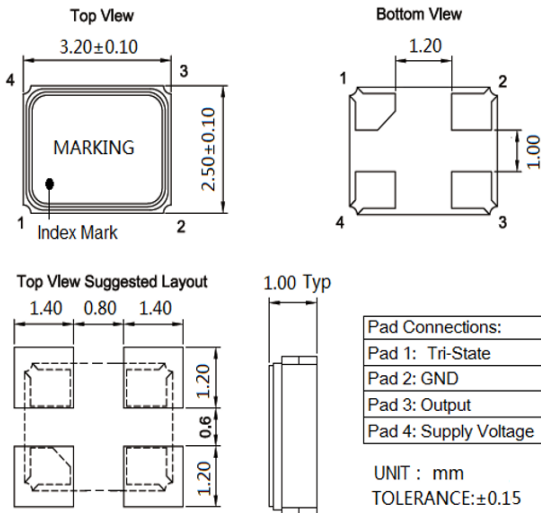
1 石英晶体产品规格及特性 / Product specification and features

1.1 一般特性 / General characteristics

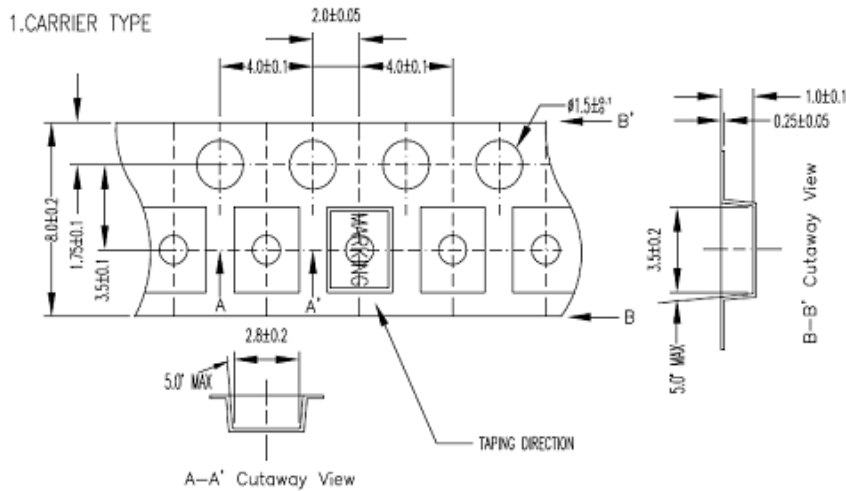
Items	Electrical spec.			Unit	Notes
	Min.	Typ.	Max.		
1.Frequency(FL)	100.000000			MHz	-
2.Type	SMD3225 OSC CMOS			-	-
3.Frequency stability(Overall)	-25	~	25	ppm	-
4.Input Voltage	2.97	3.30	3.63	V	VDD
5.Input Current	-	-	30	mA	-
6.Start-up Time	-	-	10	mSec	-
7.Rise Time /Fall Time	-	-	10	nSec	-
8.Operating temperature range	-40	~	85	°C	-
9.Storage temperature range	-55	~	125	°C	-
10.Duty Cycle	45%	-	55%	-	-
11.Output Load	-	15	-	pF	-
12.Output Level (Output High Logic "1")	90% VDD	-	-	V	-
13.Output Level (Output Low Logic "0")	-	-	10% VDD	V	-
14.High level input voltage	70% VDD	-	-	V	Tri-State Enable Output
15.Low level input voltage	-	-	30% VDD	V	Tri-State Disable Output
16.Aging	-3	-	3	ppm/year	At 25°C±5°C

2.0 外形尺寸、外观 / Outline dimensions、Appearances

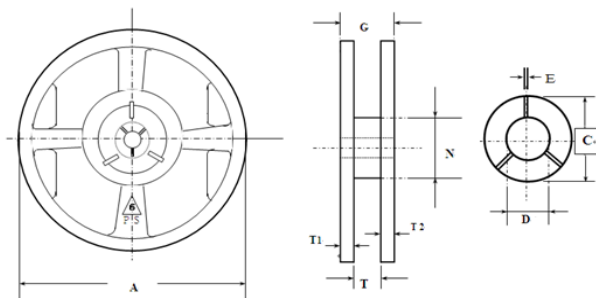
2.1 产品外形尺寸(mm)/ Product outline dimension(mm)



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



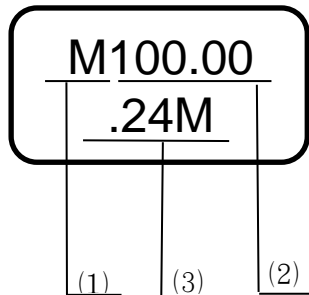
2.3 编带盘外形尺寸图(mm) /Reel Dimensional Drawing (mm)



☆图示尺寸及公差 (mm) :

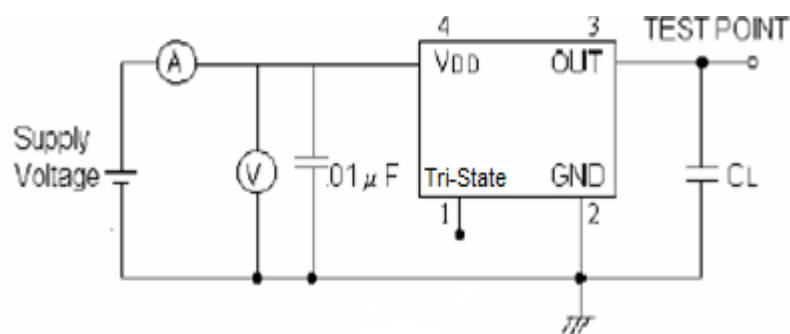
部位	A	T	T1, T2	N	C	D	E	G
尺寸	178	9.0	1.4	60.2	20.2	13.2	2.5	11.5
公差	±2.0	±0.5	±0.2	±0.5	±1.0	±0.5	±0.5	±1.4

2.4 印字 Marking

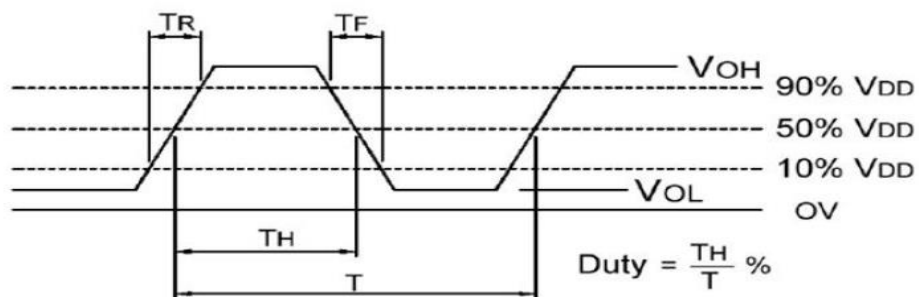


- (1) 代表公司Logo
- (2) 代表标称频率
- (3) 代表批次号

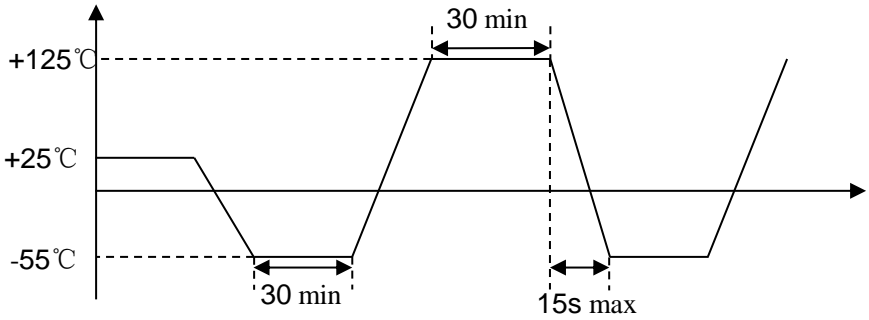
2.5 测试图 Test Diagram



2.6 输出波形 Output Waveform



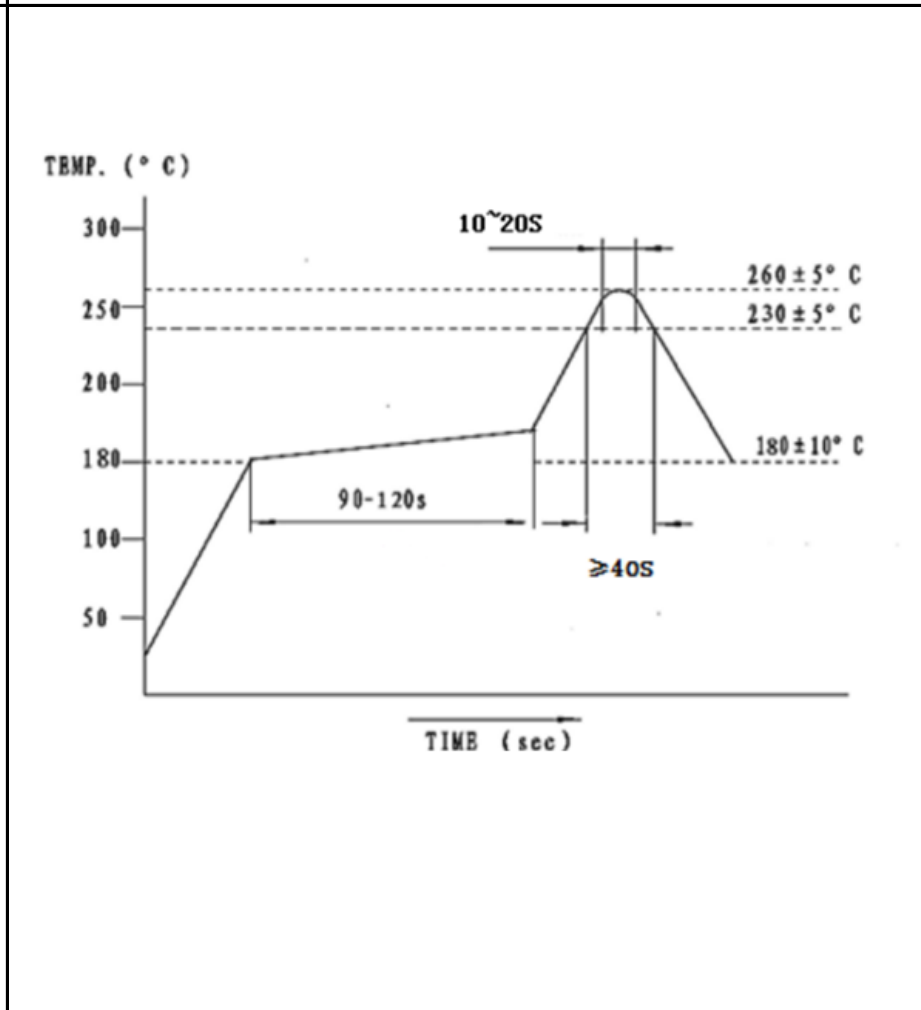
3.0 石英晶体之可靠性 / Product reliability

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 $-40\pm 2^{\circ}\text{C}$ 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	气密性 (Leakage)	(IV)
	细漏 Fine leak: Put the product in the Helium pressure tank, 4 ~ 5kgf/cm ² , 0.5hrs.	
A.5	冷热冲击实验 温度循环 (Temperature Cycle) $-55^{\circ}\text{C} \sim 125^{\circ}\text{C}$, Retain 30Min, 100 cycles  <p style="text-align: center;">温度循环 (Temperature Cycle)</p>	(I)

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3.1 机械性能 / Mechanism characteristics

B.1	跌落测试 (Drop Test)	(I)
	Device are dropped from a height of 150 cm onto 20mm thickness stainless plate executing 3 times of random drops.	
B.2	耐振性 (Resistance of Vibration)	(I)
	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	
B.3	可焊性试验 (Solderability)	(III)
	245±5°C, 5±1s	
B.4	耐焊接热 (Reflow) Resistance to soldering heat (Reflow)	(I)
	参考曲线图 (Reference Curve) :	



项目 Item	结果编号Result NO.	规格要求 Specification Requirements
1	(I)	频率变化 $<\pm 10\text{ppm}$; Frequency variation $<\pm 10\text{ppm}$;
2	(II)	电流变化 $<\pm 15\%$; Current variation $<\pm 15\%$;
3	(III)	上锡覆盖率高于95% The covering rate of Tin-plating is more than 95%.
4	(IV)	$<1 \cdot 10^{-9} \text{Pa} \cdot \text{m}^3/\text{s}$

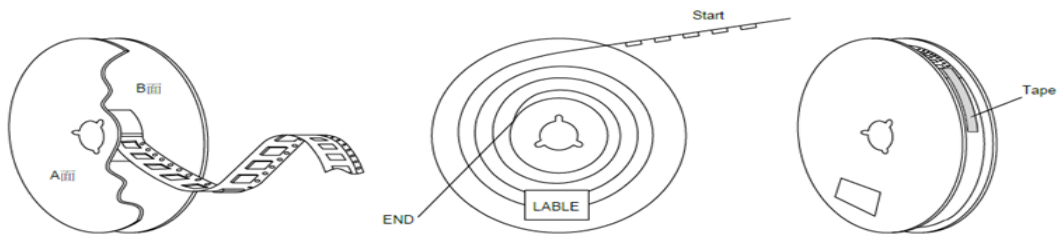
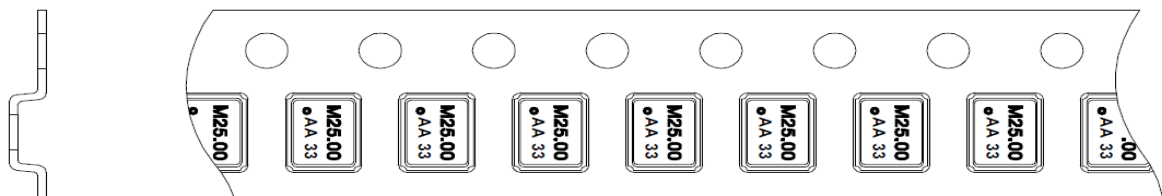
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4.0 生产商及产地说明 / Manufacturer and origin

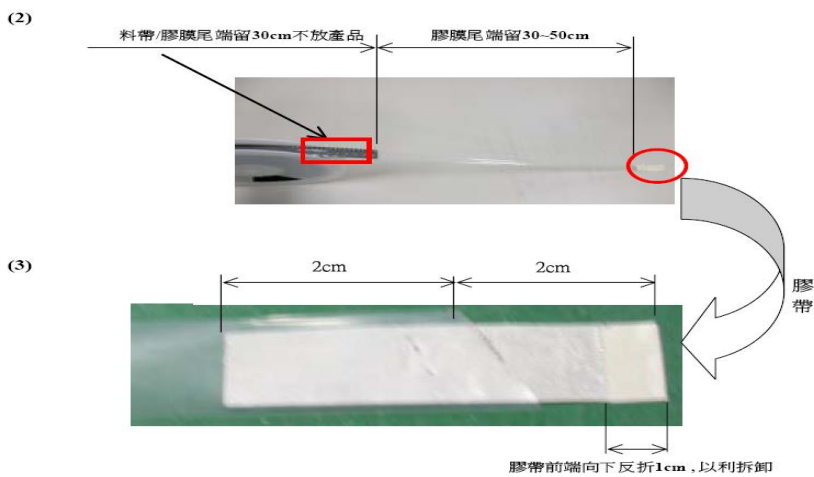
生产商/Manufacturer: 烟台明德亨电子科技有限公司
 YanTai MDH Technology Co.,Ltd

四川明德亨电子科技有限公司
 SiChuan MDH Technology Co.,Ltd

4.1 包装规格 Package specification



Standard Reel Quantity is 3,000 pcs per reel



165° ~ 180°

