

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 Quart crystal unit
产品型号 Product Type:	SMD3225
标称频率 Nominal Freq:	40.000000 MHz
明德亨料号 MDH P/N:	2.3.3.400001237
客户料号 Customer P/N:	

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

Date: 2021年4月14日

批准	审核	拟制
Accepted	Checked	Issued
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RoHS Compliant

Revision Record

[illegible]

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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)	40.000000			MHz	-
2.Mode of oscillation	Fundamental			-	-
3.Crystal Cutting Type	AT-CUT			-	Thickness shear mode
4.Frequency tolerance	-10	~	10	ppm	At 25℃±3℃
5.Loading capacitance(CL)	12			pF	-
6.Equivalent resistance(RR)	-	-	40	Ω	Series(ESR)
7.Drive Level (DL)	0.01	100	150	uW	-
8.Temperature stability	-10	~	10	ppm	-30~85℃ Ref. to 25℃
	-15	~	15	ppm	-40~-30℃ Ref. to 25℃
9.Operating temperature range	-40	~	85	℃	-
10.Storage temperature range	-55	~	125	℃	-
11.Shut Capacitance(C0)	-	-	3	pF	-
12.RLD2	-	-	40	Ω	-
13.SPDB	-	-	-3	dB	-
14.Aging	-	-	3	ppm/Year	Per Year
15.Insulation Resistance	500	-	-	MΩ	DC 100±10V

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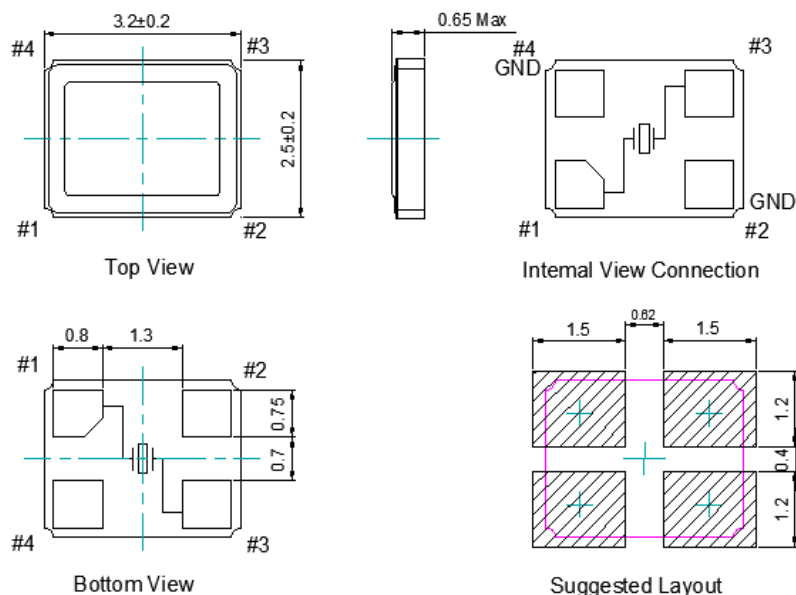
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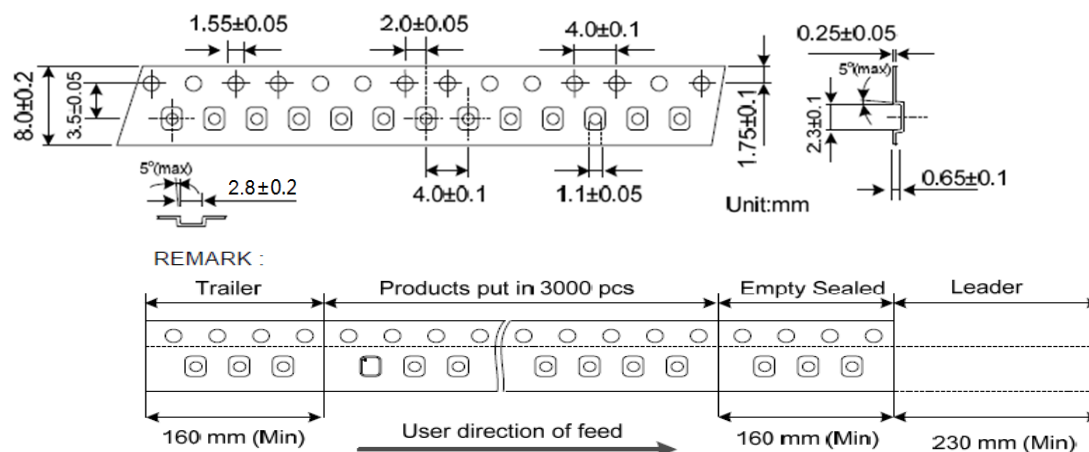
2.0 外形尺寸、外观 / Outline dimensions、Appearances

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

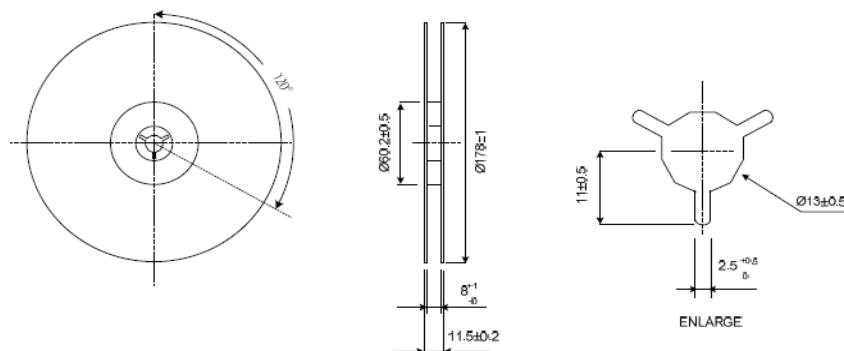
Unit:mm



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

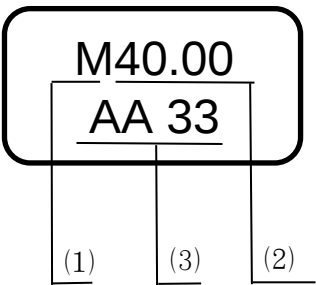


2.3 编带盘外形尺寸图(mm) /Reel Dimensional Drawing (mm)



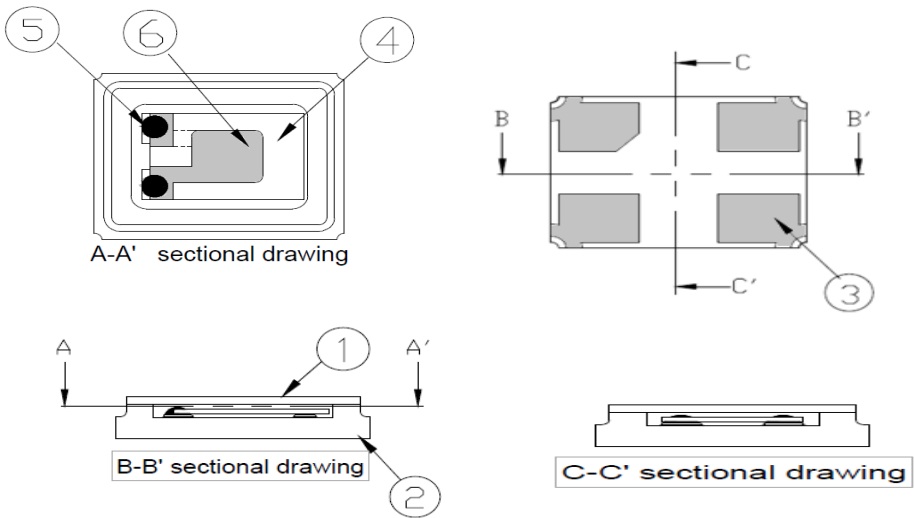
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2.4 印字 Marking



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

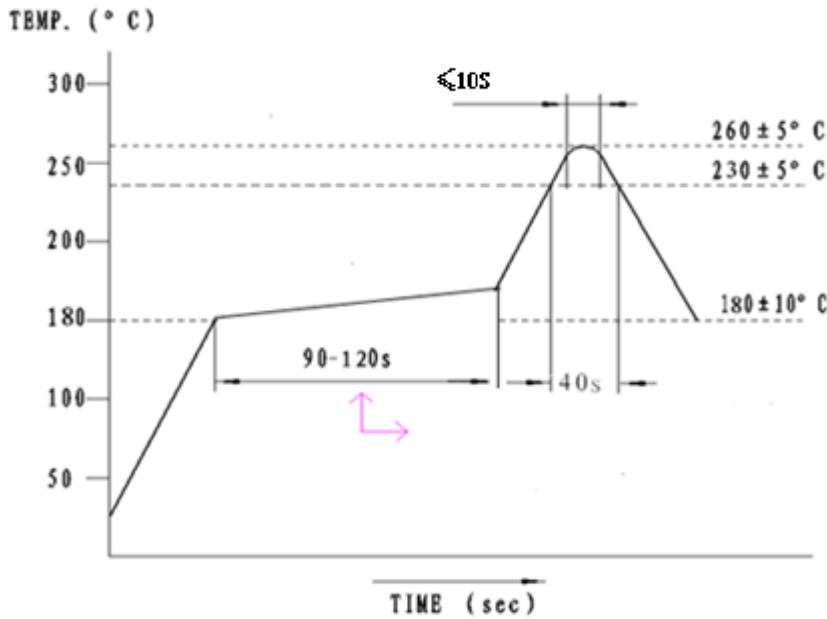
3.0 内部构造图 / Product internal structure



封装方式/Seal		激光封装	质量（参考值）		0.0144g
NO.	材料名/Matenal	备注/Notes	NO.	材料/Matenal	备注/Notes
1	金属盖板/LID	Fe—Ni—Co	5	导电胶 /Conductive achesive	/
2	陶瓷/Ceramics	黑色/Color black	6	银/Ag	形状例/Form isexample
3	引脚 /Pad	镀镍/镀金 Ni plating/Au plating			
4	晶片/Crystal（SiO2）	晶片 /Crystal Water			

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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 -40±2℃ for 500±2 hrs then 25±2℃ 2 hrs before testing						
A.2	耐高温性（耐热性）测试（Heat resistance）					(I)	
	Stored at 125±2℃ for 500±2 hrs then 25±2℃ 2 hrs before testing						
A.3	耐湿热性 (Humidity Resistance Result)					(I)	
	稳态温度：85±2℃；湿度：85±3%RH；时间：500±2 hrs						
	Steady temperature: 85±2℃;humidity: 85±3%RH; time:500±2 hrs						
A.4	老化测试（Aging）					(I)	
	Stored at 85±2℃ for 720±2Hrs then 25±2℃ 2 Hrs before testing						
	Stored at 25±2℃ for 1year						
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)	
	-55℃ +25℃ +125℃ </						

4.1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℃ 2 hrs before testing	
B.3	可焊性试验 (Solderability)	(III)
	245±5℃, 5±1s	
B.4	耐焊接热 (Reflow) Resistance to soldering heat (Reflow)	(I)
	参考曲线图 (Reference Curve) :	
		

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5.0 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

5.1包装规格Package specification

