

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

产品型号
Product Type: SMD3225

标称频率
Nominal Freq: 27.000000 MHz

明德亨料号
MDH P/N: 2.3.3.270001202

客户料号
Customer P/N:

客户承认
Approved By Customer

签章
Signature:

日期
Date:

Date: 2017年7月25日

批准	审核	拟制
Accepted	Checked	Issued
黄屹	岳坤	乔润国



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Revision Record

VER	修订日	项目	内容	备注
	Rev. Date	Items	Contents	Remarks
01	2017/7/25	Issue		

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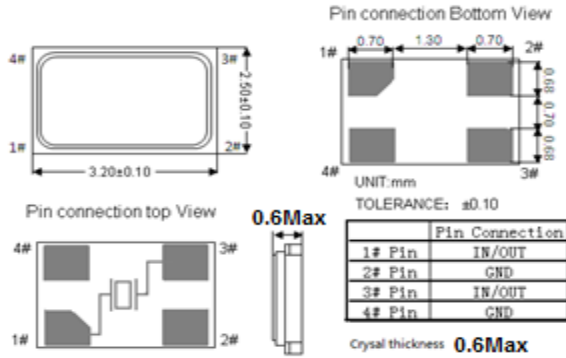
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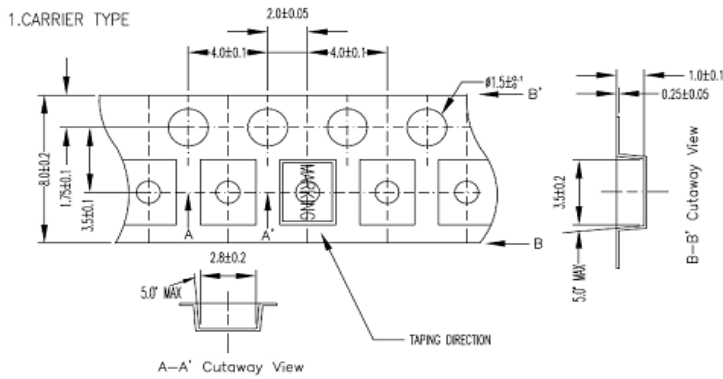
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1 石英晶体产品规格及特性 / Product specification and features					
1.1 一般特性 / General characteristics					
标称频率		27.000000	MHz		
Nominal frequency					
振动模式		Fundamental			
Overtone order					
型 号		SMD3225			
Type					
动作温度		-20~70	°C		
Operating temperature					
保存温度		-40~85	°C		
Storage temperature					
1.2 电气特性 / Electric characteristics					
调整频差(+25°C基准)		±10	ppm		
Adjustment tolerance: (at+25°C)					
温度频差		±20	ppm		
Tolerance over the temperature:					
负 载		12.0	pF		
Load capacitance					
测试仪器		S&A 250B			
Measure Instrument					
激励功率		10.0	μW		
Drive level					
等效电阻		40.0	Ω Max		
Equivalent resistance					
分布电容 (C0)		3.0	pF Max		
Shut capacitance					
绝缘阻抗		500 MΩ Min	100VDC±15VDC		
Insulation resistance					
老化率		±3ppm	ppm/Year		
Aging					
1.3 其它特性 / Other characteristics					
SPDB		<-3	dB	(以标称频率为基准)	

2.0 外形尺寸、外观 / Outline dimensions、Appearances

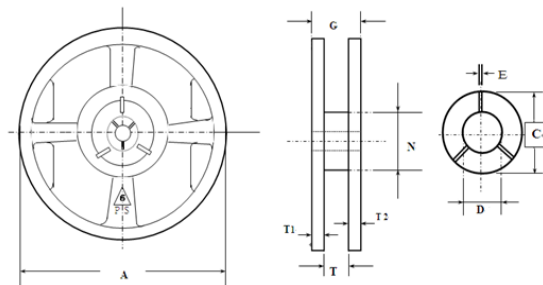
2.1 产品外形尺寸(mm)/ Product outline dimension(mm)



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)

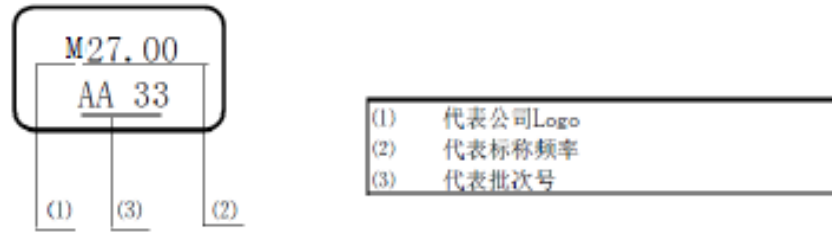


☆图示尺寸及公差 (mm) :

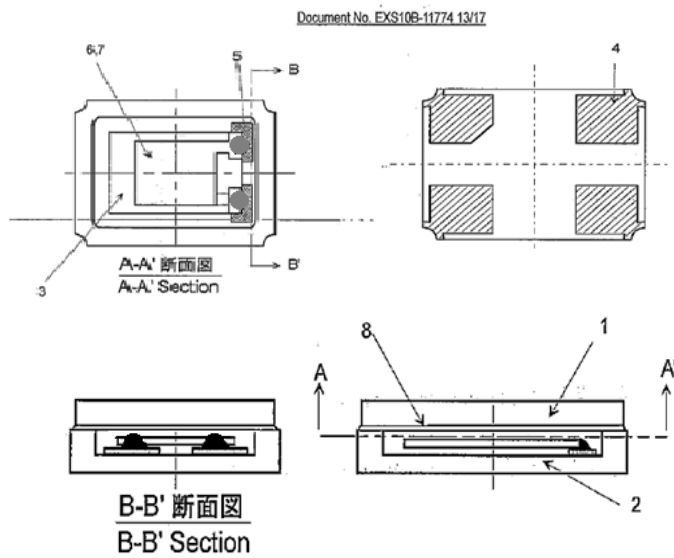
部位	A	T	T1, T2	N	C	D	E	G
尺寸	178	9.0	1.4	60.2	20.2	13.2	2.5	11.5
公差	±2.0	±0.5	±0.2	±0.5	±1.0	±0.5	±0.5	±1.4

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2.4 印字 Marking

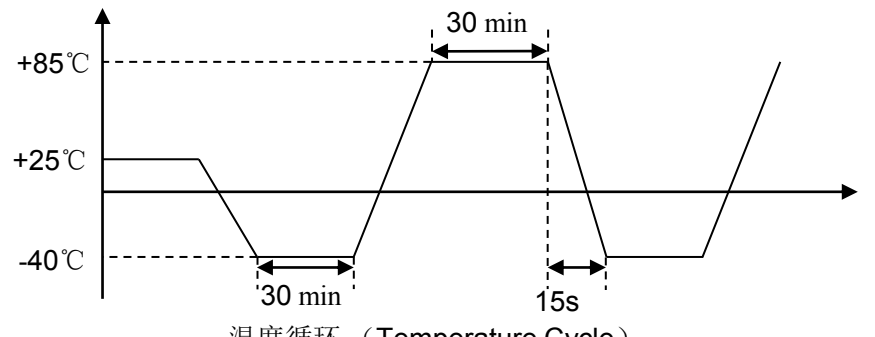


3.0 内部构造图 / Product internal structure

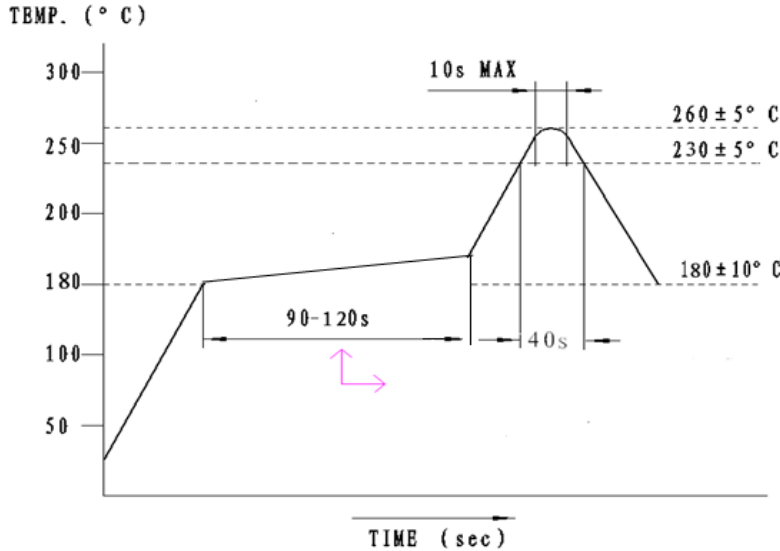


封装方式/Seal		Seam 封装	质量 (参考值)		0.0144g
NO.	材料名/Material	备注/Notes	NO.	材料/Material	备注/Notes
1	金属盖板/LID	Fe-Ni-Co	5	导电胶/ Conductive adhesive	/
2	陶瓷/Ceramics	黑色/Color black	6	银/Ag	形状例/Form isexample
3	晶片/Crystal (SiO ₂)	晶片 /Crystal Water	7	铬/Cr	形状例/Form isexample
4	引脚 /Pad	镀金/镀镍 Au plating / Ni plating	8	封止环/ Seal Ring	Fe-Ni-Co

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 $-40\pm 2^{\circ}\text{C}$ for 1000 ± 2 hrs then $25\pm 2^{\circ}\text{C}$ 1~2 hrs before testing	
A. 2	耐高温性 (耐热性) 测试 (Heat resistance)	(I)
	Stored at $85\pm 2^{\circ}\text{C}$ for 1000 ± 2 hrs then $25\pm 2^{\circ}\text{C}$ 1~2 hrs before testing	
A. 3	盐雾测试 (Salt Mist Test)	(I)
	将温度 $35^{\circ}\text{C}\pm 2^{\circ}\text{C}$ 之盐水 (盐份浓度5%)，喷向石英晶体48小时 ± 2 小时，再用清水洗净。 Spray the $35^{\circ}\text{C}\pm 2^{\circ}\text{C}$ salt water (salt density 5%) to crystal for 48 ± 2 hrs, then clean by water	
A. 4	耐湿热性 (Humidity Resistance Result)	(I)
	稳态温度: $60\pm 2^{\circ}\text{C}$; 湿度: 90~95%RH; 时间: 500h; Steady temperature: $60\pm 2^{\circ}\text{C}$; humidity: 90~95%RH; time:500h	
A. 5	撞击测试 (Mechanical Shock)	(I)
	$14700\text{m}/\text{S}^2$ 0.5sec 5times in each of 6 direction	
A. 6	老化 (Aging)	(I)
	Stored at $85\pm 3^{\circ}\text{C}$ for 720 ± 12 Hrs then $25\pm 2^{\circ}\text{C}$ 1~2 Hrs before testing Stored at $25\pm 2^{\circ}\text{C}$ for 1 ± 0.03 year	
A. 7	气密性 (Leakage)	(V)
	细漏 Fine leak: Helium leak test *JIS C 6701 10.6	
A. 8	温度循环 (Temperature Cycle)	(I)
	$-40^{\circ}\text{C} \sim 85^{\circ}\text{C}$, Dewell 30Min, 100 cycles 	

4.1机械性能 / Mechanism characteristics

B. 1	跌落测试 (Drop Test)	(I)
	Device are dropped from a height of 100 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 hr	
B. 3	耐焊接热 (手工)	(I)
	Resistance to soldering heat (Hand soldering method)	
	温度: 370~400°C; 时间: 3~4秒; 次数: 2次; 烙铁功率: 60W/Min Temperature: 370~400°C; Time: 3~4sec; Frequency: 2 times; Soldering iron: 60W/Min	
B. 4	可焊性试验 (Solderability)	(II)
	240±2°C, 3±0.5sec	
B. 5	耐焊接热 (Reflow) Resistance to soldering heat (Reflow)	(I)
	260±5°C; 10S; 2Times Reflow温度曲线图  <p>TEMP. (° C)</p> <p>300</p> <p>250</p> <p>200</p> <p>180</p> <p>100</p> <p>50</p> <p>10s MAX</p> <p>260±5° C</p> <p>230±5° C</p> <p>180±10° C</p> <p>90-120s</p> <p>40s</p> <p>TIME (sec)</p>	

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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 $<5\Omega$ 或规格电阻的15%, 取大者 Frequency variation $<\pm 10\text{ppm}$; Resistance variation $<5\Omega$ or 15% of RR spec., select the bigger value.
2	(II)	上锡覆盖率高于95% The covering rate of Tin-plating is more than 95%.
3	(III)	无气泡在晶体表面沉淀或冒出水面, 绝缘阻抗 500 M Ω Min 100VDC/ $\pm 15\text{VDC}$ There is no bubbles after the Crystal is dipped in the water Insulation Resistance: 500 M Ω Min 100VDC/ $\pm 15\text{VDC}$
4	(IV)	在10倍放大镜下观察石英晶体无裂纹 The Crystal is no crackle under the observation of 10 times Magnifier.
5	(V)	$1*10^{-9}\text{Pa}\cdot\text{m}^3/\text{s}$ Max

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

生产商: 烟台明德亨电子科技有限公司

Manufacturer: MDH Technology Co.,Ltd

工厂/制造所在地: 山东省烟台开发区黑龙江路6号

Address: N0.6 Heilongjiang Rd, Yantai development zone, Shandong

产品名称: 石英晶体谐振器

Product name: Quart Crvstal Resonator

产品型号: SMD3225 27.000000 MHz

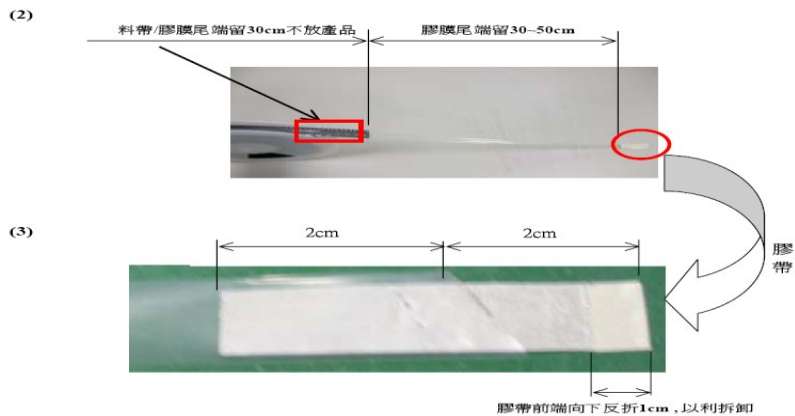
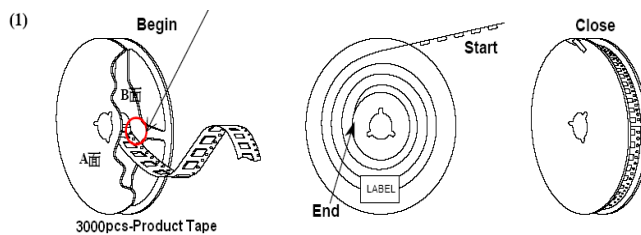
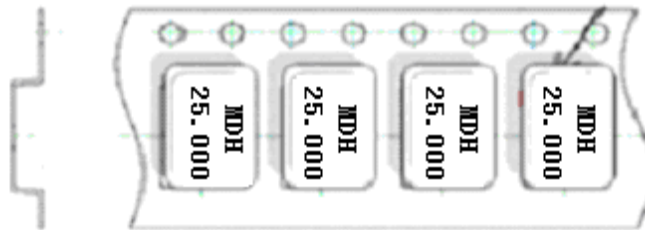
Product type: SMD3225 27.000000 MHz

包装方式: 纸箱 52cm×37cm×38cm (±1.5cm)

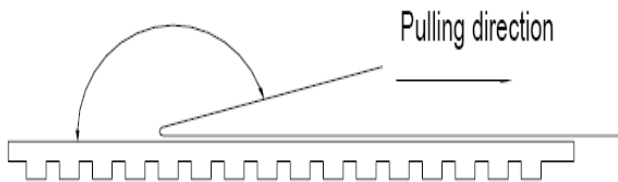
Package: Paper carton 52cm×37cm×38cm (±1.5cm)

标准包装 Standard package	SHIPPING MARK		标 签 Label
外包装 52×37× 38cm 如图P10- (2)如图 P10-(2)	每箱 120000pcs (40小盒)	客户名称 料 号 规 格 数 量 发货单位 发货日期 装箱编号 产地说明	客户名称: XXXXXX 料 号: XXXXXX 规 格: SMD 3225-25.000M- 20pF 数 量: 120000Pcs 发货单位: 烟台明德亨电子科技 有限公司 发货日期: xxxxxx 装箱编号: xxxx 产地说明: Made in China
内包装 18.5×18.5 ×3.5cm 如图P10- (1)	每盘 3000 pcs	料 号 型 号 规 格 出货批号 数 量 每小盒1盘 每盘3000pcs	料号: XXXXXX 型号: SMD 3225 规格: 3225-25.000M-20pF 出货批号: XXXXX 数量: 3000Pcs

5.1 包装规格 Package specification



165°~180°



It has to between 0.2N to 0.75N under following condition.

Pulling direction: 165° to 180°

Pulling Speed : 300mm/min

Otherwise unless specified