新品 变更

MDH201808096

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:	25.000000 MHz
明德亨料号 MDH P/N:	2.3.3.250002018
客户料号 Customer P/N:	

客户承认
Approved By Customer

签章 日期
Signature: Date:

Date: 2018年8月22日

批准	审核	拟制
Accepted	Checked	Issued
黄屹	乔润国	马赛

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Revision Record

VER	修订页面 Rev.page	变更内容 Revise Contents	修改日期 Revise Date	修订者 Reviser
01	N/A	Initial released	N/A	Zhang Shengli

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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 Nominal frequency	25.000000	MHz
振动模式 Overtone order	Fundamental	
型 号 Type	SMD3225	
动作温度 Operating temperature	-40~85	℃
保存温度 Storage temperature	-40~85	℃

1.2 电气特性 / Electric characteristics

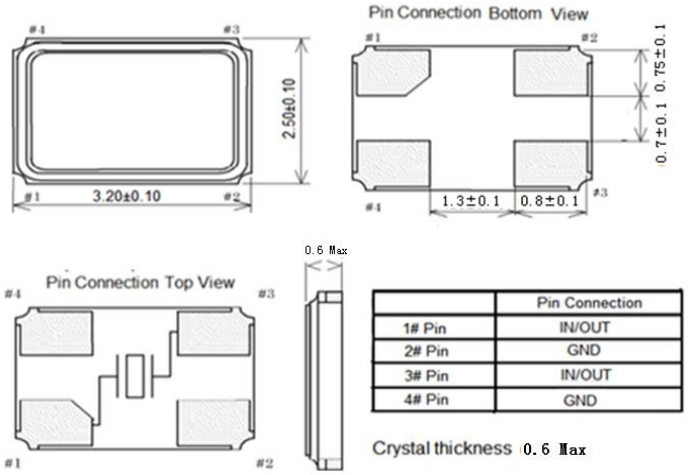
调整频差(+25℃基准) Adjustment tolerance: (at+25℃)	±10	ppm
温度频差 Tolerance over the temperature:	±20	ppm
负 载 Load capacitance	20.0	pF
测试仪器 Measure Instrument	S&A 250B	
激励功率 Drive level	100.0	μw
等效电阻 Equivalent resistance	30.0	Ω Max
分布电容 (C0) Shut capacitance	3.0	pF Max
绝缘阻抗 Insulation resistance	500 MΩ Min	100VDC±15VDC
老化率 Aging	±2ppm	ppm/First year

1.3 其它特性 / Other characteristics

SPDB	＜-3	dB	（以标称频率为基准）

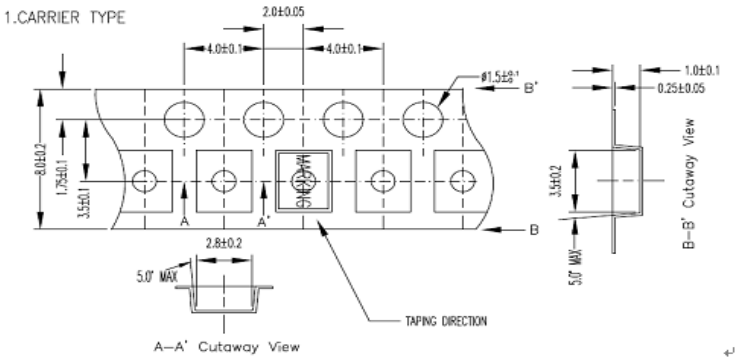
2.0 外形尺寸、外观 / Outline dimensions、Appearances

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

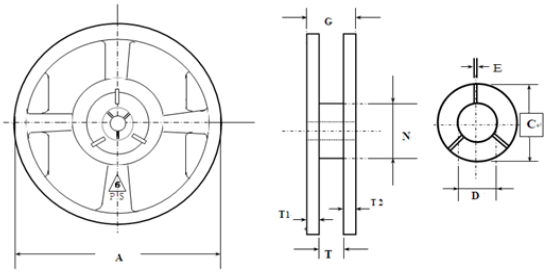


	Pin Connection
1# Pin	IN/OUT
2# Pin	GND
3# Pin	IN/OUT
4# Pin	GND

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



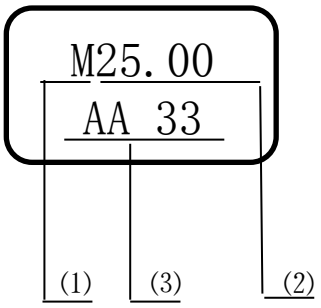
2.3编带盘外形尺寸图(mm) /Reel Dimensional Drawing (mm)



☆图示尺寸及公差（mm）：

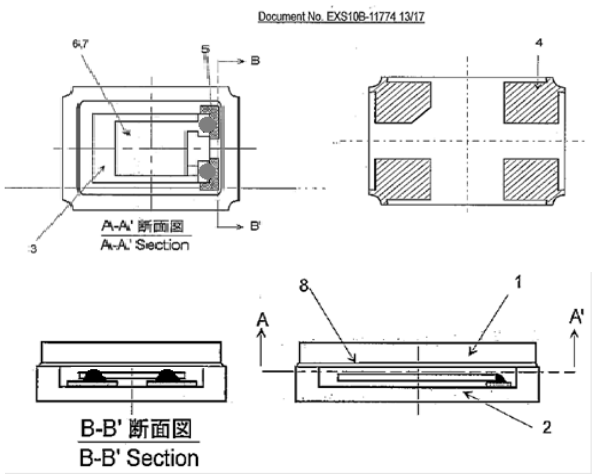
部位	A	T	T1,T2	N	C	D	E	G
尺寸	178	9.0	1.4	60.2	20.2	13.2	2.5	11.5
公差	±2.0	±0.5	±0.2	±0.5	±1.0	±0.5	±0.5	±1.4

2.4 印字 Marking



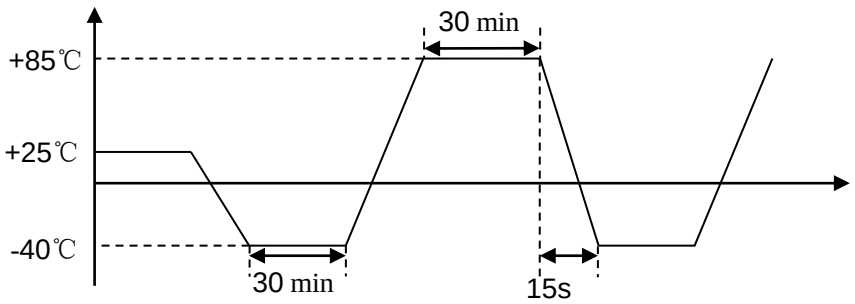
(1) 代表公司Logo
(2) 代表标称频率
(3) 代表批次号

3.0 内部构造图 / Product internal structure

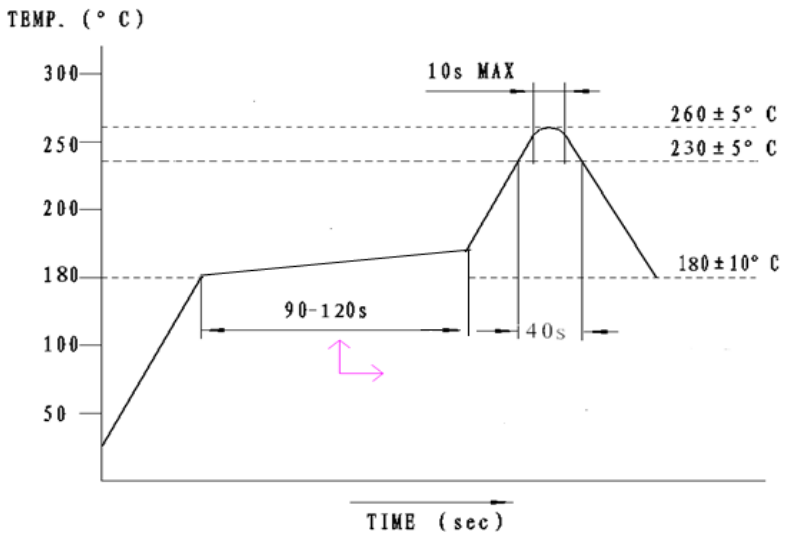


封装方式/Seal		激光封装	质量（参考值）		0.0144g
NO.	材料名/Matenal	备注/Notes	NO.	材料/Matenal	备注/Notes
1	金属盖板/LID	Fe－Ni－Co	5	导电胶/Conductive achesive	/
2	陶瓷/Ceramics	黑色/Color black	6	银/Ag	形状例/Form isexample
3	晶片/Crystal (SiO2)	晶片/Crystal Water	7	铬/Cr	形状例/Form isexample
4	引脚/Pad	镀镍/镀金 Ni plating/Au plating			

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

4.1机械性能 / Mechanism characteristics

B.1	跌落测试（Drop Test） Device are dropped from a height of 100 cm onto 20mm thickness stainless plate executing 3 times of random drops.	（Ⅰ）
B.2	耐振性（Resistance of Vibration） Frequency：10~55Hz，amplitude(total excursion)：1.5mm±15%,3 direction (X,Y,Z) each 2 hr	（Ⅰ）
B.3	耐焊接热（手工） Resistance to soldering heat (Hand soldering method) 温度：360±10℃；时间：3秒；次数：2次；烙铁功率：60W/Min Temperature：370~400℃；Time：3~4sec； Frequency：2 times； Soldering iron：60W/Min	（Ⅰ）
B.4	可焊性试验（Solderability） 240±2℃，3±0.5sec	（Ⅱ）
B.5	耐焊接热（Reflow）Resistance to soldering heat (Reflow) 260± 5℃；10S；2Times Reflow温度曲线图  	（Ⅰ）

项 目 Item	结果编号 Result NO.	规格要求 Specification Requirements
1	（Ⅰ）	频率变化<±10ppm；电阻变化<5Ω或规格电阻的15%，取大者 Frequency variation <±10ppm; Resistance variation <5Ω 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 MΩ Min 100VDC/±15VDC There is no bubbles after the Crystal is dipped in the water Insulation Resistance: 500 MΩ Min 100VDC/±15VDC
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*10-9Pa.m³/s Max

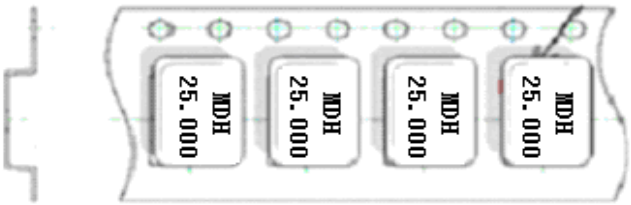
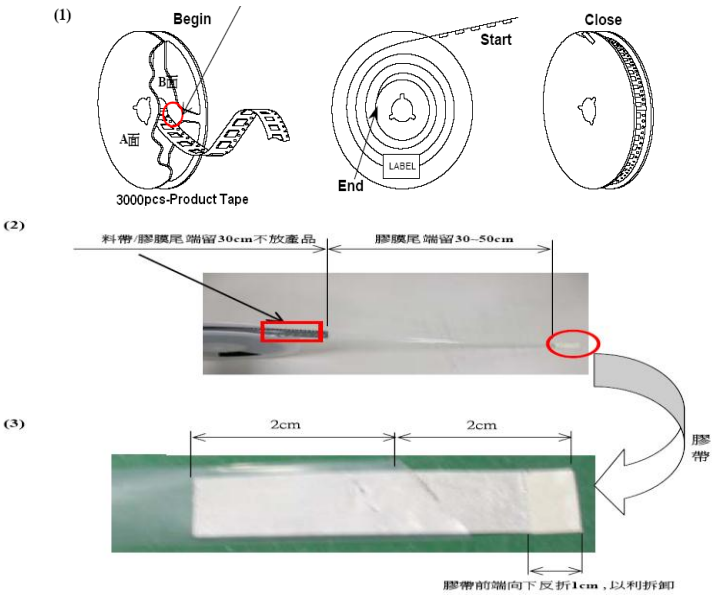
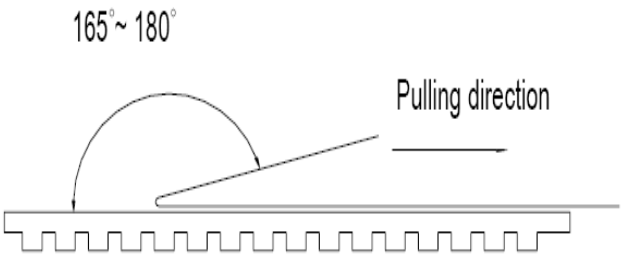
5.0 生产商及产地说明 / Manufacturer and origin

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

工厂所在地/Address： 山东省烟台开发区黑龙江路6号

No.6 Heilongjiang Road, Yantai Development zone, Shandon

包装方式： 纸箱 52cm×37cm×38cm（±1.5cm）

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

5.1包装规格Package specification