



東莞市康柏電子科技有限公司

DONGGUAN KANGBO ELECTRONIC TECHNOLOGY CO.,LTD.



APPROVAL SHEET

承認書

Product Name	<u>Quartz Crystal 石英晶体谐振器</u>
P/N	<u>KC-F-32.000M-9-1010-2070-40</u>
Customer's Name	<u> </u>
Customer's P/N	<u> </u>
Lot NO.	<u> </u>
Specification Sheet #	<u>SKC-0529</u>
Date	<u>2020-7-3</u>
Generation	<u>朱梦静</u>
Approval	<u>李坡</u>
Customer Confirmation	<u> </u>

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南京中电熊猫晶体科技有限公司
Nanjing CEC Panda Crystal Tech Corp.

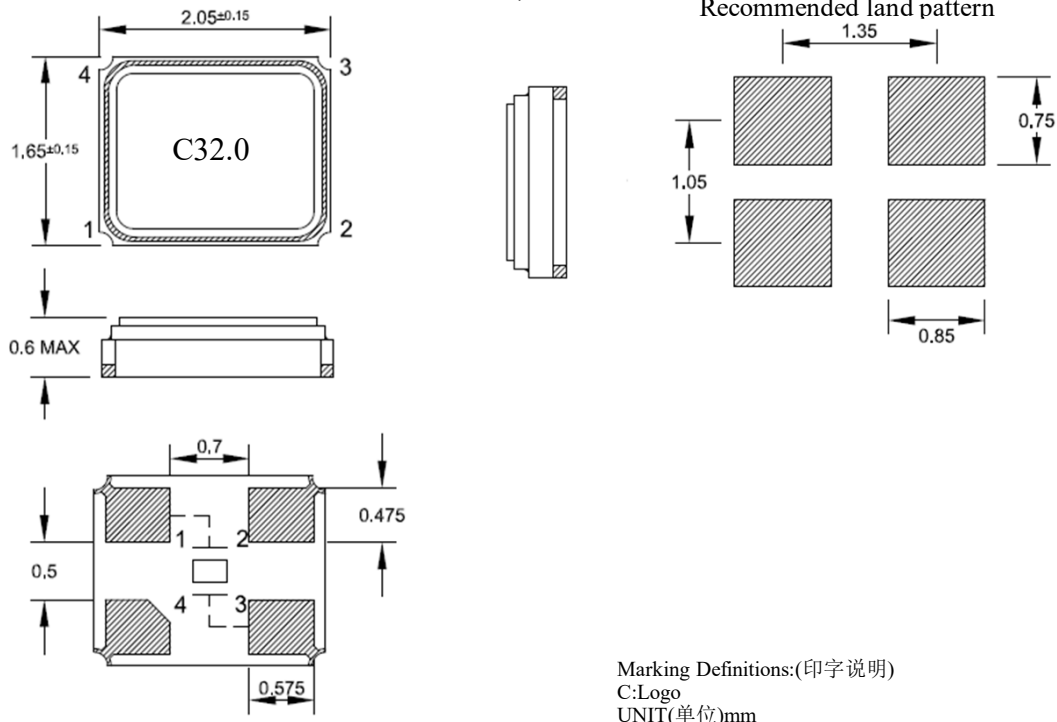
Specification of Quartz Crystal
石英晶体谐振器规格书

NO: SKC-0529

2.0×1.6 SMD

DATE: 2020/07/03

■ 外形及印字(DIMENSION AND MARKING)



■ 电气参数(ELECTRICAL SPECIFICATION)

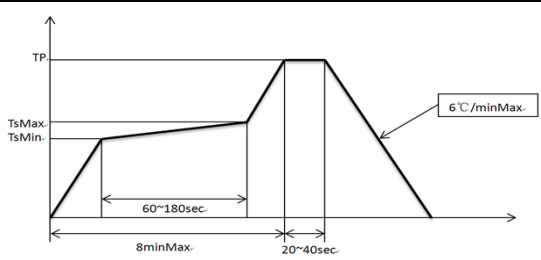
P/N	料号	KC-F-32.000M-9-1010-2070-40
Nominal Frequency	标称频率	32.000000 MHz
Mode of Oscillation	振荡模式	Fundamental
Operating Temperature Range	工作温度范围	-20°C ~ +70°C
Storage Temperature Range	保存温度范围	-55°C ~ +125°C
Test Set	测试系统	250B PI-Network
Drive Level	激励电平	100 uW Max.
Loading Capacitance	负载电容	9 pF
Frequency Tolerance	调整频差	±10 ppm Max.(AT 25°C)
Equivalent Resistance	等效阻抗	40 ohms Max.
Temperature Drift	温度频差	±10 ppm Max./-20°C to +70°C
Shunt Capacitance	静态电容	3.0 pF Max.
Motional Capacitance	动态电容	/
Aging	老化率/年	±3 ppm/ year Max.
Insulation Resistance	绝缘阻抗	500 MΩ Min / 100 V±15 V D.C.
Other	其它	Tape & Reel
Note		

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■ 可靠性测试条件(RELIABILITY TEST)

序号 NO	项目 ITEM	条件 CONDITIONS	合格标准 BASIS OF VERDICT
1	高温贮存 HIGH TEMPERATURE STORAGE	工作温度: Temperature: 85°C 不带电, 试验结束后24±2小时测试 时间 Times: 1000 hours The test was conducted 24 ±2 hours at the end of the test(no charge)	$\Delta FL = \pm 10$ ppm MAX $\Delta R_s =$ 平均阻抗*20%或5 Ω MAX (两者取大值) $\Delta FL \leq \pm 10$ ppm $\Delta R_s \leq 5 \Omega$ or $\pm 20\%$ (Whichever is Larger)
2	恒定湿热 CONSTANT HUMIDITY	温度: 85°C±2°C; 湿度85%; 时间: 1000小时 试验结束后24±2小时进行测试 Temperature: 85°C±2°C; Humidity: 85%; Time: 1000 hours The test was conducted 24 ±2 hours at the end of the test	$\Delta FL = \pm 10$ ppm MAX $\Delta R_s =$ 平均阻抗*20%或5 Ω MAX (两者取大值) $\Delta FL \leq \pm 10$ ppm $\Delta R_s \leq 5 \Omega$ or $\pm 20\%$ (Whichever is Larger)
3	低温贮存 LOW-TEMPERATURE STORAGE	温度 Temperature: -40°C 时间 Time: 1000 hours 试验结束后24±2小时进行测试 The test was conducted 24 ±2 hours at the end of the test	$\Delta FL = \pm 10$ ppm MAX $\Delta R_s =$ 平均阻抗*20%或5 Ω MAX (两者取大值) $\Delta FL \leq \pm 10$ ppm $\Delta R_s \leq 5 \Omega$ or $\pm 20\%$ (Whichever is Larger)
4	温度循环 TEMPERATURE CYCLING	-55°C±2°C (5 min) ^{5 min} →125°C±2°C (5 min); 循环1000次 -55°C±2°C (5 min) ^{5 min} →125°C±2°C (5 min); For 1000 cycles 最大转换时间 Maximum conversion time: 5 min 高低温保存时间 High/Low temperature holding time: 30 min	$\Delta FL = \pm 10$ ppm MAX $\Delta R_s =$ 平均阻抗*20%或5 Ω MAX (两者取大值) $\Delta FL \leq \pm 10$ ppm $\Delta R_s \leq 5 \Omega$ or $\pm 20\%$ (Whichever is Larger)
5	跌落 DROP	1m高处自由跌落到硬木板上, 3次 Height: 1m; 3 times	$\Delta FL = \pm 5$ ppm MAX $\Delta R_s =$ 平均阻抗*20%或5 Ω MAX (两者取大值) $\Delta FL \leq \pm 10$ ppm $\Delta R_s \leq 5 \Omega$ or $\pm 20\%$ (Whichever is Larger)
6	机械冲击 MECHANICAL SHOCK	峰值 Peak: 100g's 持续时间 Duration: 6ms 波形 Waveform: 半正弦波 Half-sine 变化速度 Velocity Change: 12.3 ft / sec 振动方向 Direction: +X, -X, +Y, -Y, +Z, -Z 每个方向各3次 3 times/direction 最后进行电性能测试 Conduct electrical performance tests	$\Delta FL = \pm 5$ ppm MAX $\Delta R_s =$ 平均阻抗*20%或5 Ω MAX (两者取大值) $\Delta FL \leq \pm 10$ ppm $\Delta R_s \leq 5 \Omega$ or $\pm 20\%$ (Whichever is Larger)

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序号 NO	项目 ITEM	条件 CONDITIONS	合格标准 BASIS OF VERDICT
7	振动 VIBRATION	频率 Frequency: 10~2000Hz: 加速度幅度 Acceleration: 5g/s 振动方向 Direction: X, Y, Z 振动时间 Duration: 每个方向20分钟 20min/direction. 循环次数 Times: 12次	$\Delta FL = \pm 5$ ppm MAX $\Delta R_s =$ 平均阻抗*20%或5 Ω MAX (两者取大值) $\Delta FL \leq \pm 10$ ppm $\Delta R_s \leq 5 \Omega$ or $\pm 20\%$ (Whichever is Larger)
8	耐焊接热 WELDING HEAT RESISTANT	 <p>TP: 260°C Max TsMax: 200°C TsMin: 150°C CYCLE TIME周期: 2次</p>	$\Delta FL = \pm 5$ ppm MAX $\Delta R_s =$ 平均阻抗*20%或5 Ω MAX (两者取大值) $\Delta FL \leq \pm 10$ ppm $\Delta R_s \leq 5 \Omega$ or $\pm 20\%$ (Whichever is Larger)
9	可焊性 SOLDER	试验前预处理: 155°C 高温贮存4小时 温度: 260°C \pm 5°C 的锡槽中浸渍 Pretreatment before test: 155°C high-temperature store 4 hours Temperature: 260°C \pm 5°C, immersion	浸锡率 $\geq 95\%$ Solder Coverage $\geq 95\%$
10	引出端强度 TERMINAL STRENGTH	1.8kg的切向推力 (60秒) 以及1.8kg的垂直拉力 (60秒) 1.8kg, of the tangential thrust (60 s) 1.8kg of the perpendicular tension (60 s)	电极不断裂 No Rupture Observed

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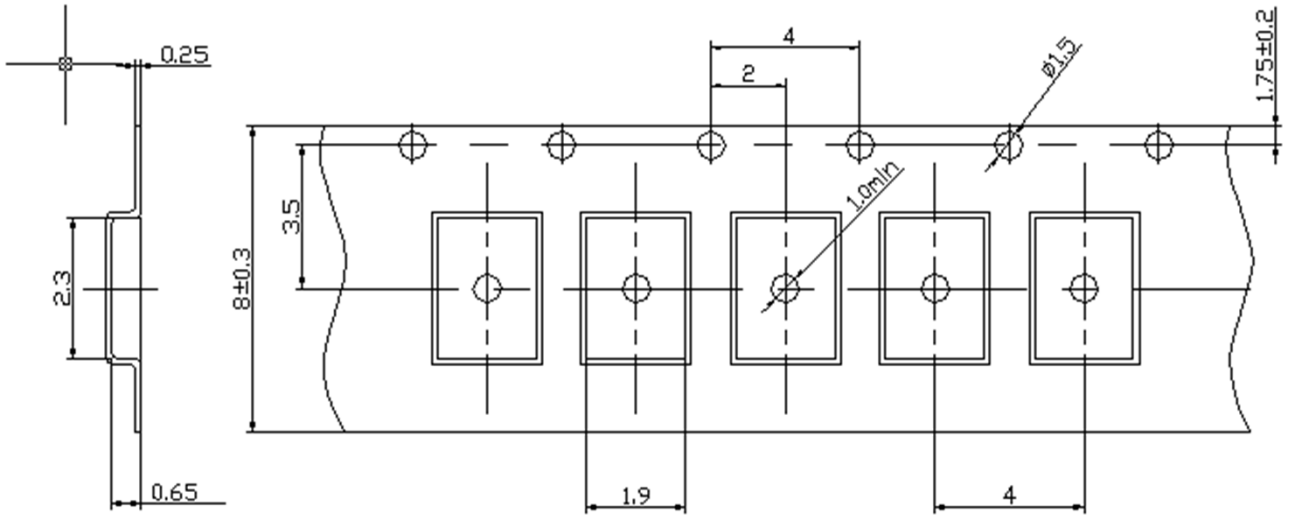
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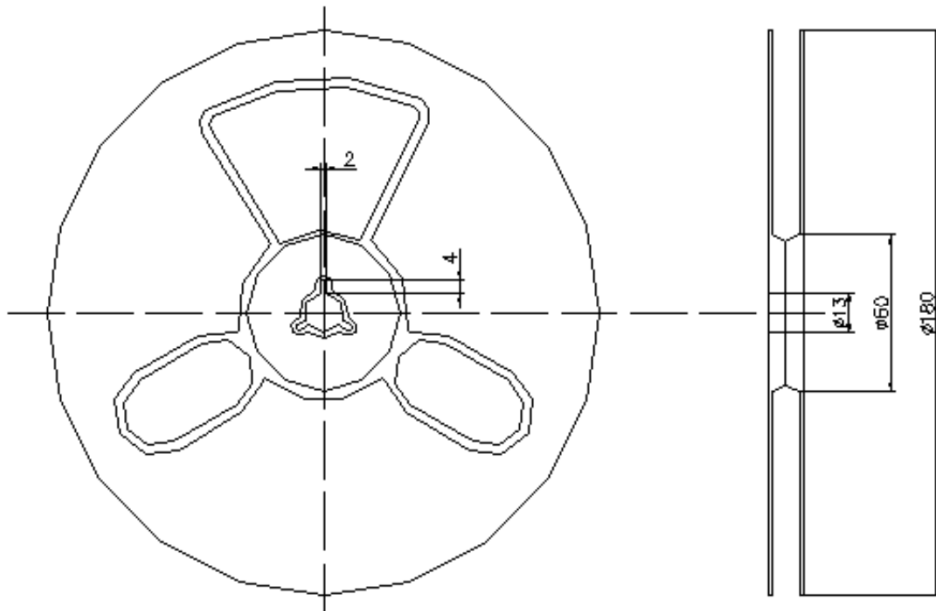
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■ 编带(TAPE)



■ 轮(REEL)



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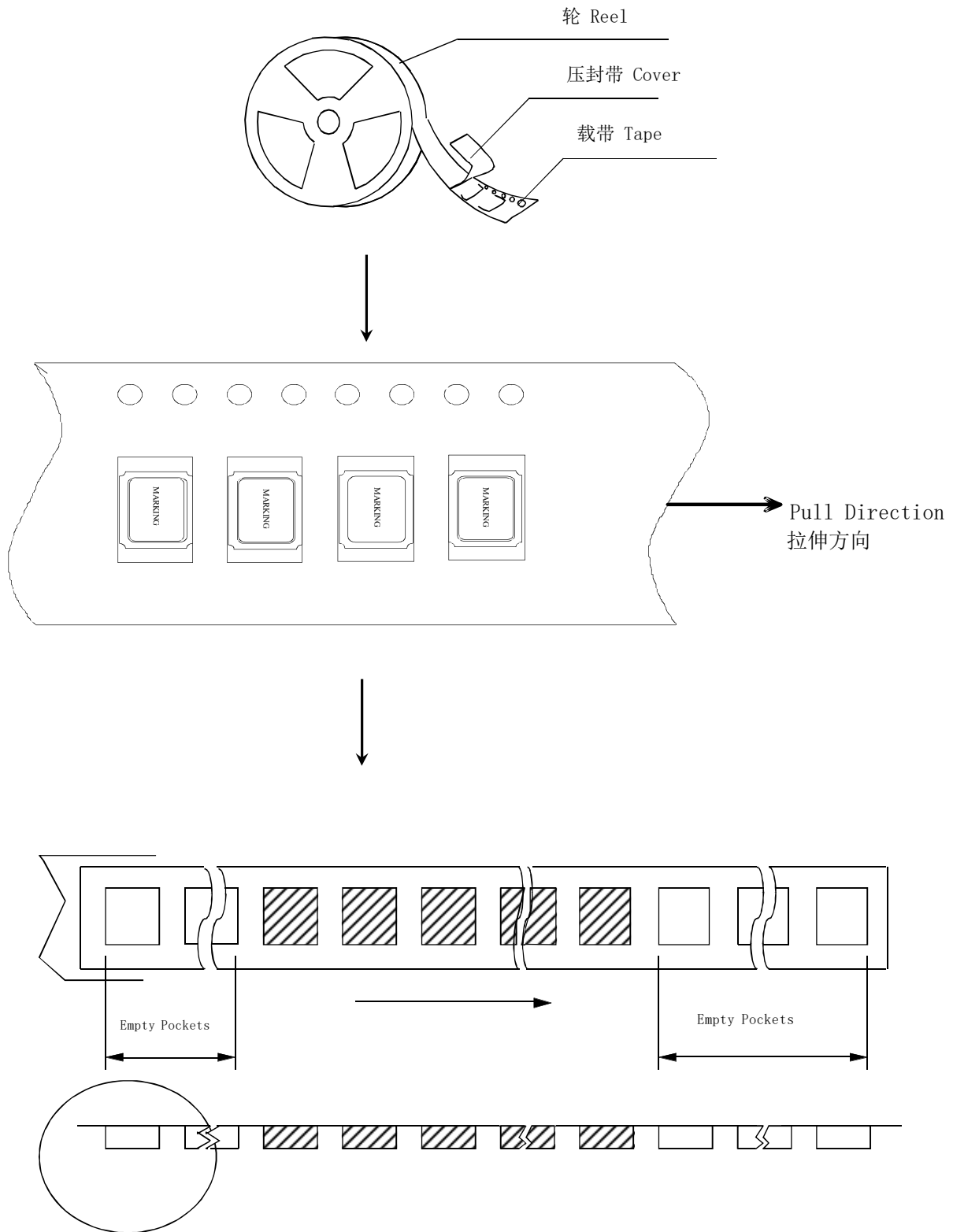
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■ 编带方式(TAPING METHOD)



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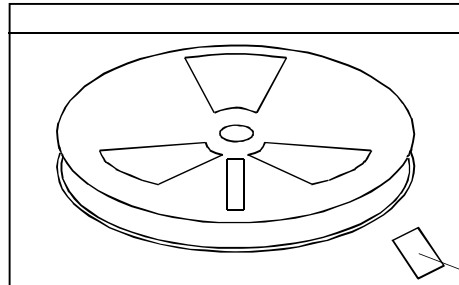
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■包装(PACKAGE)

1.自封袋(Bag)

3000 只=1 轮

3000 pcs=1 Reel

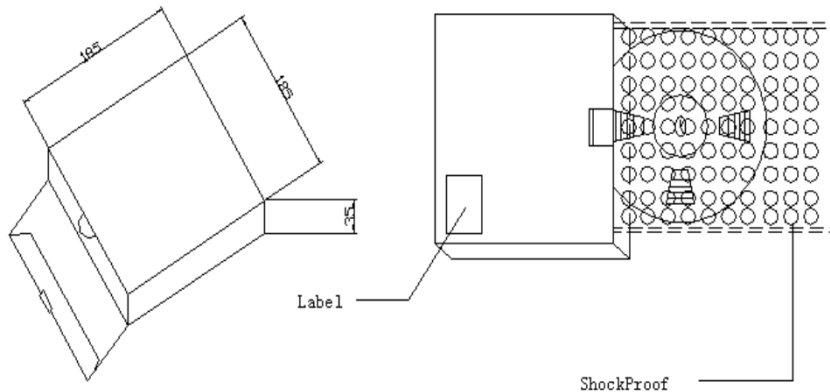


Desiccant 干燥剂

2.内包装(Inside Package)

1 轮=1 盒

1 Reel=1 Box



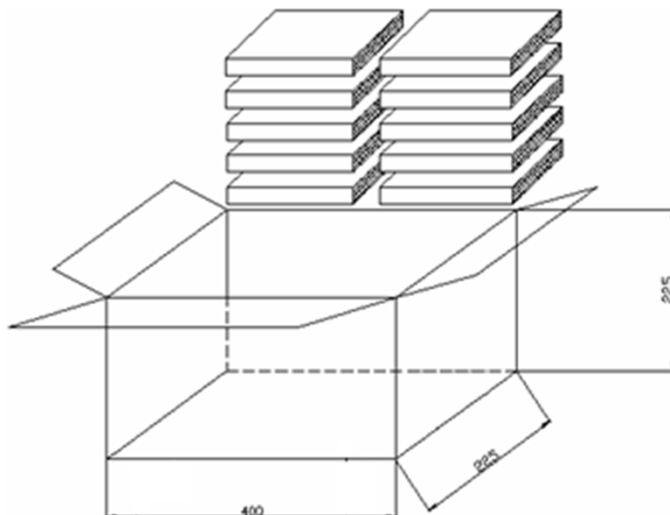
Label

ShockProof

3.外包装(Outside Package)

10 盒=1 箱

10 Box=1 Carton



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<p>■保存条件(Storage Condotion)</p> <p>1. 保存温度: 25℃±15℃ Storage Temperature:25℃±15℃</p> <p>2. 湿度: 10%-60% humidity:10%-60%</p>		

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