



TAE雅晶

序号Serial No. 2018101105

日期Date:2018-10-11

致TO: 深圳市猎芯科技有限公司

产品ITEM: 石英晶体谐振器 QUARTZ CRYSTAL UNITS

型号TYPE: SMD-2016_4PIN

标称频率NOMINAL FREQUENCY: 16MHz 9PF +/-10PPM

请收到我们的规格书后，签字回传。
Please confirm you received this specification,sign and fax it to us.

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浙江雅晶电子有限公司

ZheJiang ABEL Electron Co.,Ltd.

浙江省台州经济开发区经一路655号
655 JingYi RD. Economic Developing Zone TaiZhou,ZheJiang,China
电话/Tel:0086-576-8501856,8501857,8501858
传真/Fax:0086-576-8501860 Post Code:318000

URL:www.taecn.com

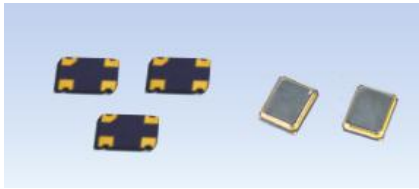
Email: market@taecn.com taec1@mail.tzptt.zj.cn

拟制Prepared by: 应金会

批准Confirmed by: 王琴飞

RoHS Compliant Standard

T-2016-4PIN-SEAM

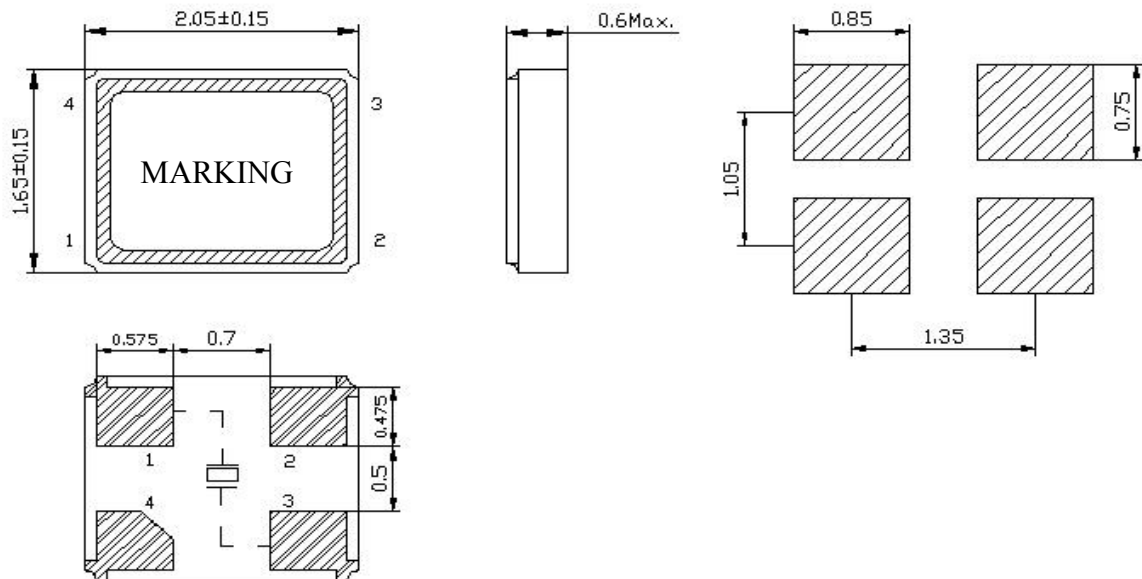


Features 特性

- Nominal Frequency 标称频率: 16MHz
- Suited for portable devices with low current consumption
適合於低功耗的便攜設備
- For a clock source in electronic equipments 適用於电子設備的時鐘源

Item	Model	T-2016-4PIN-SEAM	Conditions
Frequency Range	标称频率	16MHz	
Frequency Tolerance	調整頻差	±10ppm Max	at 25°C
Freq. Tol. Over Temp.	溫度頻差	±30ppm Max	-20~+70°C
Operating Temp. Range	工作溫度範圍	-20~+70°C	
Storage Temp. Range	保存溫度範圍	-40~+85°C	
Series Resistance	諧振電阻	160Ω Max	
Load Capacitance	負載電容	9pF	
Shunt Capacitance	靜態電容	/	
Drive Level	激勵電平	100µw Max	
Aging	老化率	±3ppm/year Max	
Insulation Resistance	絕緣阻抗	500Mohm/Min	DC100V±15V

OUTLINE DIMENSIONS (unit: mm)



序号 NO	项目 ITEM	条件 CONDITIONS	合格标准 BASIS OF VERDICT
1	老化 AGING	温度: 85°C; 时间: 1000小时 Temperature: 85°C; Times: 1000 hours	$\Delta FR = \pm 10$ ppm MAX $\Delta Rs =$ 平均阻抗*20%或5 Ω MAX (两者取大值) $\Delta FL \leq \pm 10$ ppm $\Delta RS \leq 5 \Omega$ or $\pm 20\%$ (Whichever is Larger)
2	湿度抗性 MOISTURE RESISTANCE	高温: 65°C (10小时, 含升温), 低温: 25°C (2小时, 含降温), 湿度90%, 循环10次, 每循环24小时 High-Temperature: 65°C $\pm 2^\circ\text{C}$ (10 hours, including heating), Low-Temperature: 25°C $\pm 2^\circ\text{C}$ (2 hours, including cooling), Humidity: 85%, for 10 cycles (24 hours/cycle)	$\Delta FR = \pm 10$ ppm MAX $\Delta Rs =$ 平均阻抗*20%或5 Ω MAX (两者取大值) $\Delta FL \leq \pm 10$ ppm $\Delta RS \leq 5 \Omega$ or $\pm 20\%$ (Whichever is Larger)
3	湿热 HUMIDITY	温度: 85°C $\pm 2^\circ\text{C}$; 湿度85%; 时间: 1000小时 Temperature: 85°C $\pm 2^\circ\text{C}$; Humidity: 85%; Time: 1000 hours	$\Delta FR = \pm 10$ ppm MAX $\Delta Rs =$ 平均阻抗*20%或5 Ω MAX (两者取大值) $\Delta FL \leq \pm 10$ ppm $\Delta RS \leq 5 \Omega$ or $\pm 20\%$ (Whichever is Larger)
4	低温 LOW-TEMPERATURE	温度: -40°C $\pm 2^\circ\text{C}$; 时间: 1000小时 Temperature: -40°C $\pm 2^\circ\text{C}$; Time: 1000hours	$\Delta FR = \pm 10$ ppm MAX $\Delta Rs =$ 平均阻抗*20%或5 Ω MAX (两者取大值) $\Delta FL \leq \pm 10$ ppm $\Delta RS \leq 5 \Omega$ or $\pm 20\%$ (Whichever is Larger)
5	热冲击 TEMPERATURE SHOCK	-55°C $\pm 2^\circ\text{C}$ (5 min) \leftrightarrow 125°C $\pm 2^\circ\text{C}$ (5 min); 循环1000次 -55°C $\pm 2^\circ\text{C}$ (5 min) \leftrightarrow 125°C $\pm 2^\circ\text{C}$ (5 min); For 1000 cycles	$\Delta FR = \pm 10$ ppm MAX $\Delta Rs =$ 平均阻抗*20%或5 Ω MAX (两者取大值) $\Delta FL \leq \pm 10$ ppm $\Delta RS \leq 5 \Omega$ or $\pm 20\%$ (Whichever is Larger)
6	跌落 DROP	1m高处自由跌落到硬木板上, 循环3次 Height: 1m; 3 times	$\Delta FR = \pm 5$ ppm MAX $\Delta Rs =$ 平均阻抗*15%或2 Ω MAX (两者取大值) $\Delta FL \leq \pm 5$ ppm $\Delta RS \leq 2 \Omega$ or $\pm 15\%$ (whichever is larger)

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7	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	$\Delta FR = \pm 5 \text{ ppm MAX}$ $\Delta Rs = \text{平均阻抗} * 15\% \text{ 或 } 2 \Omega \text{ MAX (两者取大值)}$ $\Delta FL \leq \pm 5 \text{ ppm}$ $\Delta RS \leq 2 \Omega \text{ or } \pm 15\%$ (Whichever is Larger)
8	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 20 min/direction; 循环次数 Times: 12次	$\Delta FR = \pm 5 \text{ ppm MAX}$ $\Delta Rs = \text{平均阻抗} * 15\% \text{ 或 } 2 \Omega \text{ MAX (两者取大值)}$ $\Delta FL \leq \pm 5 \text{ ppm}$ $\Delta RS \leq 2 \Omega \text{ or } \pm 15\%$ (Whichever is Larger)
9	回流焊 REFLOW	<p>260°C±5°C</p> <p>150°C±5°C</p> <p>120sec</p> <p>10secmax</p> <p>CYCLE TIME周期: 200sec Max.(回流2次)</p>	$\Delta FR = \pm 5 \text{ ppm MAX.}$ $\Delta Rs = \text{平均阻抗} * 15\% \text{ 或 } 2 \Omega \text{ MAX (两者取大值)}$ 外观完好 $\Delta FL \leq \pm 5 \text{ ppm, } \Delta RS \leq 2 \Omega \text{ or } \pm 15\%$ (Whichever is Larger) No Rusty
10	可焊性 SOLDER	温度: 250°C, 蒸汽老化8小时 Temperature: 250°C, Time: 8hours	浸锡率 ≥ 95% Solder Coverage ≥ 95%
11	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