深 圳 市 星 通 时 频 电 子 有 限 公 司
SHENZHEN SCTF ELECTRONICS CO., LTD

编号	SCTF202304289
日期	2023/4/14
版本	B01

RoHS compliant

承 认 书

SPECIFICATION FOR APPROVAL

客户名称 Customer Name：	立创商城
供应商物料名称 Part Name：	石英晶体振荡器
产品描述 Description：	SMD7050 16.000MHz/3.3V
供应商物料料号 Part NO.：	SX7M16.000B10G40TNN
供应商名称 Supplier Name ：	深圳市星通时频电子有限公司

PLEASECONFIRMOURSPECIFICATION。敬请确认规格书之内容。

CUSTOMER APPROVAL 客户审批		
物料代号 PART NO. _____ 使用于机型 USED IN MODEL: _____		
工程部	品质部	采购部

(敬请承认后返回一份，谢谢！)

SUPPLIER APPROVAL 供应商审批		
DGN.制表人	CKD. 校对	APPD. 审核、签章
吴丽红	李良	胡华才

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RoHS Compliant

Revision Record				
Rev.	Revise page 修订页	Revise contents 修订内容	Rev. Date 修订日期	Reviser 修订人
A02	N/A	Initial released.	2013/1/1	Martin.Hu
A03	N/A	The version is upgraded and the content remains unchanged.	2018/2/25	Martin.Hu
B01	Page2	The version is upgraded and add revision record page.	2021/2/24	Martin.Hu

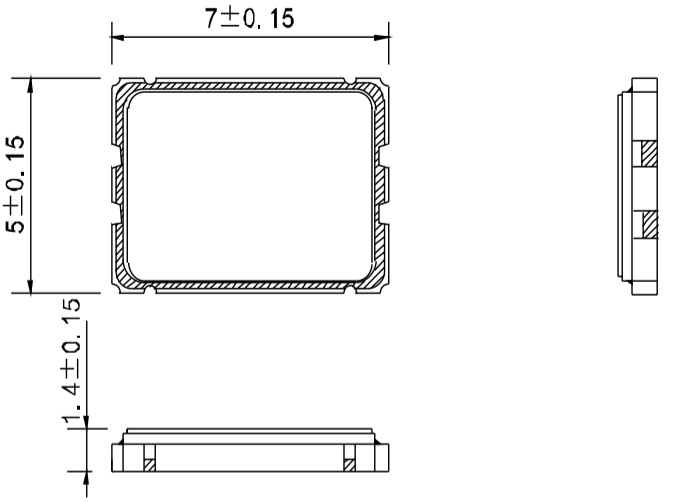
■ Electrical Specification 电气参数

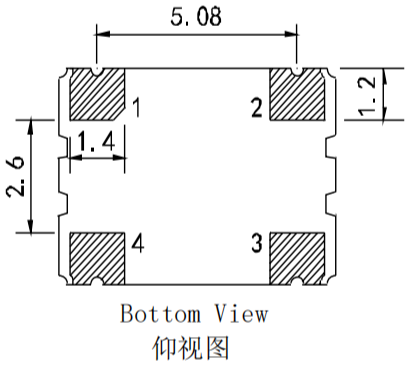
N0.	Item	Electrical Spec.	Notes
1	Holder Type 封装	SMD7050	
2	Nominal Frequency 标称频率	16.000000 MHz	
3	Frequency stability 常温频差	±10ppm	at 25℃±2℃
4	Temperature Drift 温度频差	±40ppm	at -40～105℃
5	Operating voltage 工作电压	3.3V	±10% max.
6	Output 输出模式	CMOS	
7	Output load condition 负载	15pF	
8	Current consumption 消耗电流	10 mA max.	
9	Operating temperature Range 工作温度范围	-40～105℃	
10	Storage Temperature Range 存储温度范围	-55～125℃	
11	Duty Cycle 占空比	45%-55%	
12	Rise / Fall Time 上升/下降沿时间	5 nS max.	
13	High output voltage 高电平	0.9Vdd min.	
14	Low output voltage 低电平	0.1Vdd max.	
15	Start-up Time 起振时间	5mS max.	To 90% of Final Amplitude
16	Enable Voltage High (Logic 1) 使能高电平	70%Vdd min.	Output will be enable if OE is Logic 1 or open ; Output will be disable if OE is Logic 0. 输出使能OE是高电平1或者悬空，频率输出；输出使能OE是低电平0，则无频率输出。
17	Enable Voltage Low (Logic 0) 使能低电平	30%Vdd max.	
18	Enable Delay Time 使能延迟	150 uS max.	
19	Aging 老化	±3ppm	1st. Year at 25℃

■ DIMENSIONS 产品尺寸

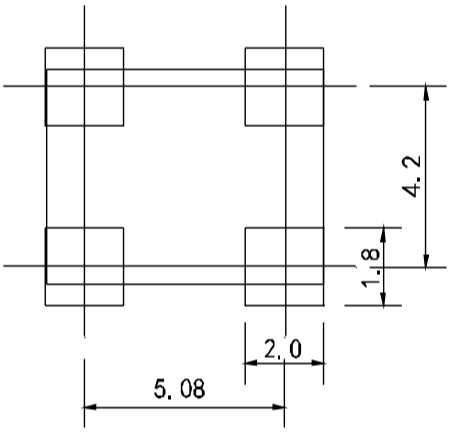
Units (单位)：mm(毫米)

Pad Functions:
1. ENABLE CONTROL
2. GND
3. OUT PUT
4. VDD



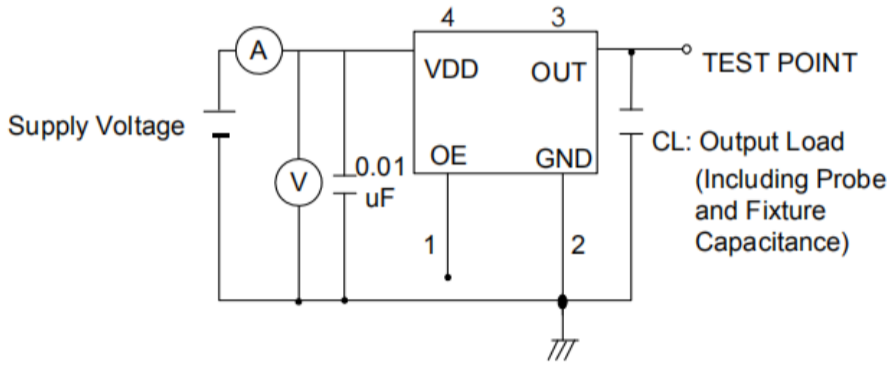


Bottom View
仰视图



suggested solder pad layout

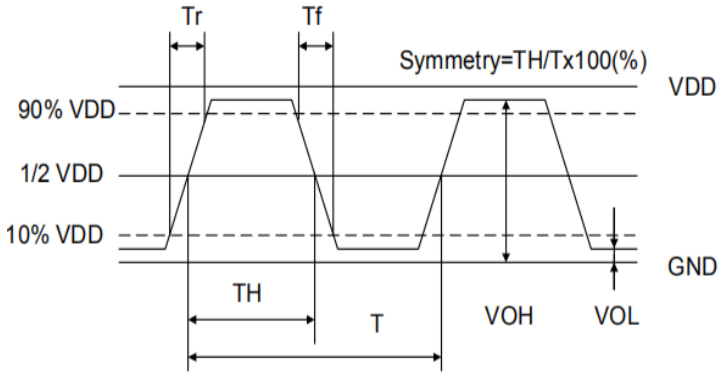
■ TESTING CIRCUIT测试电路



※ Notes: PIN 1 connected to Vdd or floating, the product is working properly;connected to GND,stops working.

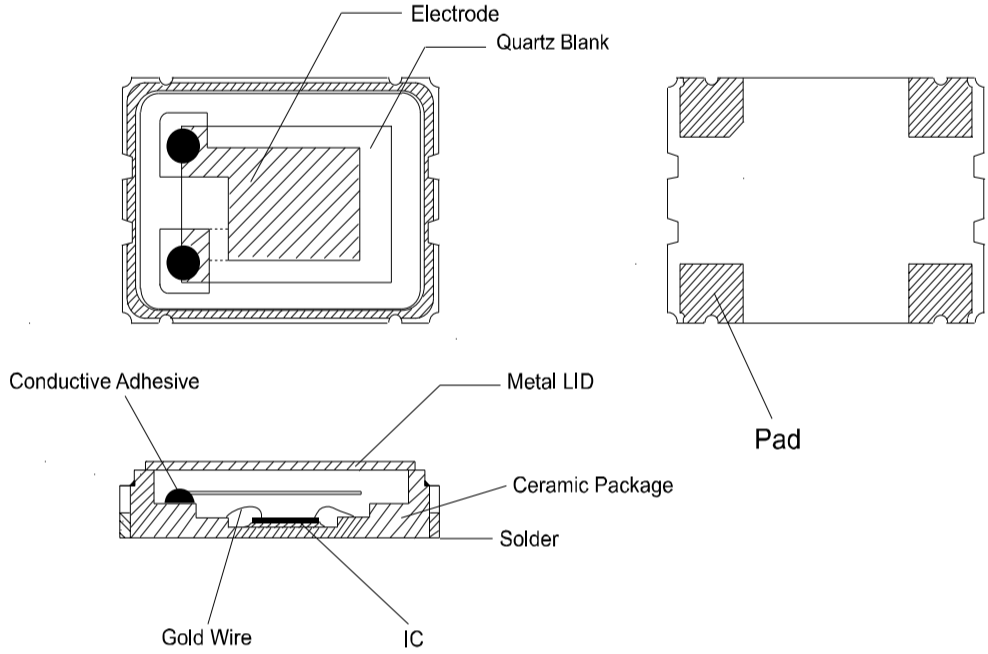
SHENZHEN SCTF ELECTRONICS CO. , LTD		
DATE	Specification of quartz crystal oscillator 石英晶体振荡器规格书	Page:
2023/4/14	P/N: SX7M16.000B10G40TNN Spec.NO.: SCTF202304289	4

■ WAVEFORM CONDITIONS 输出波形

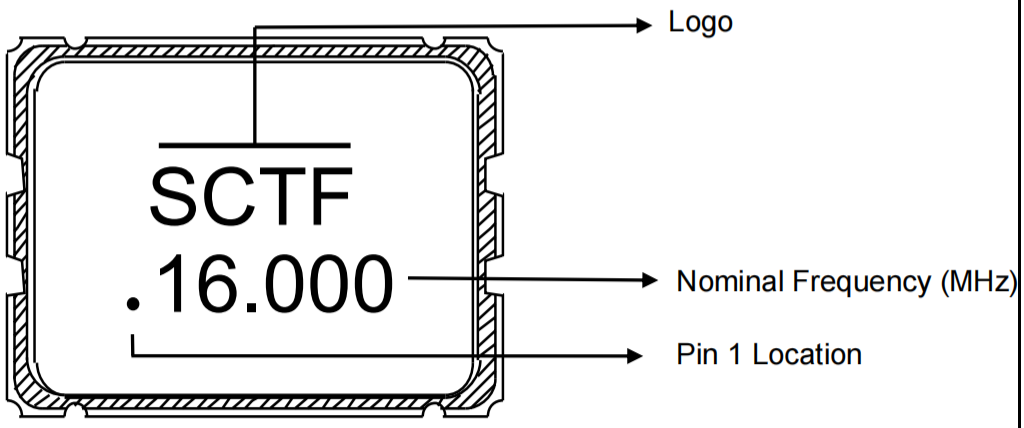


Waveform measurement system should have a min. bandwidth of 5 times the frequency being tested.

◆ Product Structure产品结构

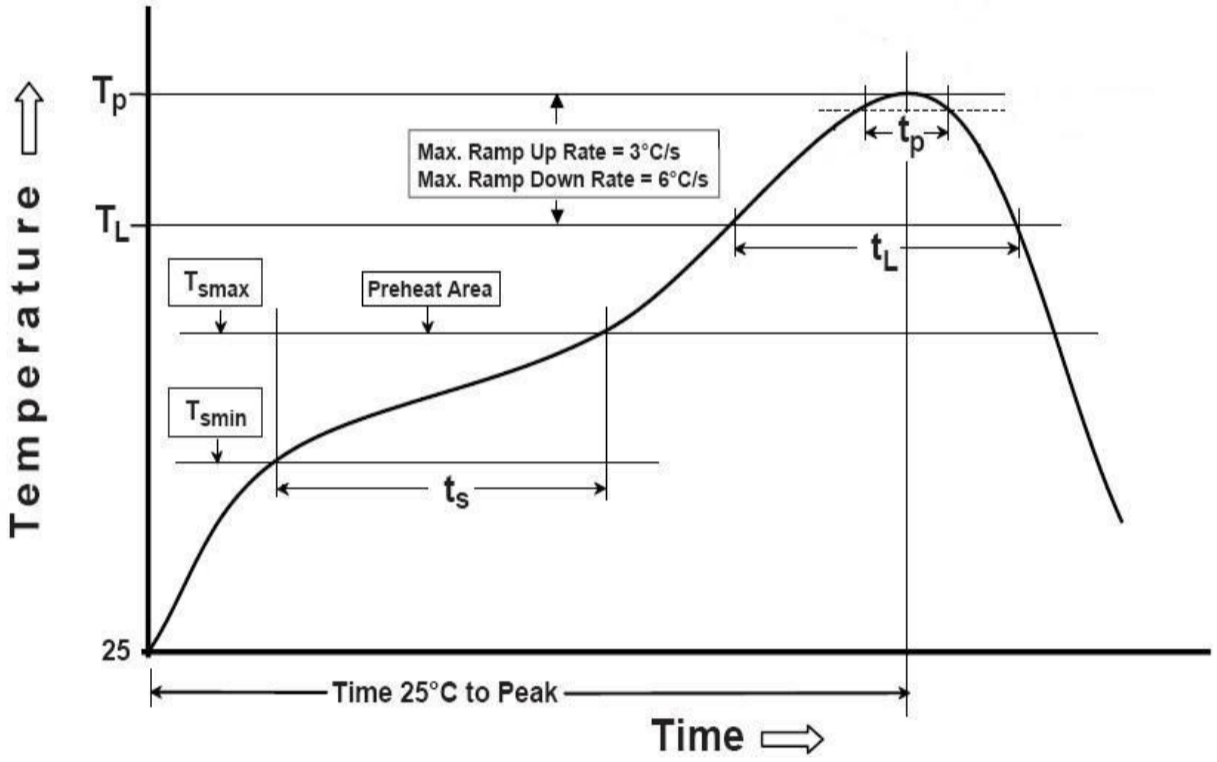


◆ Marking印字



◆ REFLOW PROFILES 回流焊条件

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat/Soak ●Temperature Min(Ts min) ●Temperature Max (Ts max) ●Time (Ts min to Ts max)	 100 °C 150 °C 60-120 seconds	 150 °C 200 °C 60-120 seconds
Ramp-up rate (TL to Tp)	3 °C/second max.	3 °C/second max.
Time maintained above ●Liquidous temperature (TL) ●Time (tL) maintained above TL	 183 °C 60-150 seconds	 217 °C 60-150 seconds
Peak package body temperature (Tp)	235℃	260℃
Time within 5 °C of the specified classification temperature (Tp)	20 seconds	30 seconds
Ramp-down rate (Tp to TL)	6 °C/second max.	6 °C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.
Suggust reflow times	**3 Times max.**	



◆ RELIABILITY SPECIFICATION可靠性参数

序号 NO.	项目 ITEM	条件 CONDITIONS	合格标准 BASIS OF VERDICT
1	跌落 DROP	100cm高处自由跌落到3cm厚木板上,3次 High:100cm;Thickness:3cm;3 times.	△FL≤±5ppm
2	振动 VIBRATION	频率 Frequency:10~57.7Hz:幅度 Amplitude:±0.75mm 频率Frequency:57.7Hz~500Hz:加速度幅度acceleration rate:98m/s2 周期 Cycle time:10-500-10Hz：15min 振动方向 Direction:X,Y, Z 振动时间 Duration: 每个方向2小时 2 h/direction.	△FL≤±5ppm
3	温度变化 TEMPERATURE SHOCK	-40℃±2℃（30min）←→85℃±2℃（30min）;循环10次 -40℃±2℃（30min）←→85℃±2℃（30min）;For 10 cycles	△FL≤±5ppm
4	湿热 HUMIDITY	温度:40℃±2℃;湿度90-95%;时间:96小时 Temp:40℃±2℃;Humidity:90-95%;Times:96h	△FL≤±5ppm
5	低温 COLD RESISTANCE	温度:-40℃±2℃;时间:96小时 Temp:-40℃±2℃;Times:96h	△FL≤±5ppm
6	高温1 HEAT RESISTANCE 1	温度:100℃±2℃;时间:96小时 Temp:100℃±2℃;Times:96h	△FL≤±5ppm
7	高温2 HEAT RESISTANCE 2	温度:155℃±2℃;时间:2小时 Temp:155℃±2℃;Times:2h	△FL≤±5ppm
8	高温3 HEAT RESISTANCE 3	温度:85℃±2℃;电压:3.3V/5.0V;时间:96小时 Temp:85℃±2℃;Voltage:3.3V/5.0V;Times:96h	△FL≤±5ppm
9	回流焊 REFLOW	150℃±5℃保持120s后升到270℃±5℃保持10s，升温和保温时间小于200s，常温放置1～2h后测定 Keep 150 ℃ ± 5 ℃ 120s and then rose to 270 ℃ ± 5 ℃ for 10s, warming and holding time is less than the 200s, placed at room temperature 1 ~ 2h after test	△FL≤±5ppm
10	盐雾 SALT SPRAY	盐雾浓度:5%;温度:35℃;时间:24小时 Salt density:5%;Temp:35℃;Times:24h	目测无明显腐蚀现象 Visual no significant corrosion.
11	老化 AGING	温度:85℃;时间:30天 Temp:85℃;Times:30days	△FL≤±5ppm
12	气密性 LEAKAGE	氦气(0.6~0.65MPa):10分钟 He(0.6~0.65MPa):10min	≤3*10-9Pa.m3/s
13	焊接 SOLDER	温度:260℃±5℃ Temp:260℃±5℃	浸锡率大于90% Soldering tin rate greater than 90%