

编号	SCTF202403351
日期	2024/3/26
版本	B01



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:	差分输出石英晶体振荡器
产品描述 Description:	OSC SMD7050 100.000MHz/3.3V/LVDS
供应商物料料号 Part NO.:	SX7DF100.000B20F30DNN
供应商名称 Supplier Name :	深圳市星通时频电子有限公司

PLEASE CONFIRM OUR SPECIFICATION. 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

地址: 深圳市南山区龙珠四路方大城T2栋10楼

Add: 10 / F, Building T2, Fangdacheng, Longzhu 4th Road, Nanshan District, Shenzhen, China.

Website: www.sctf-crystal.com

Email: info@sctf-crystal.com

TEL: 0755-86097430

FAX: 0755-86097259

Page: 1

■ Electrical Specification 电气参数

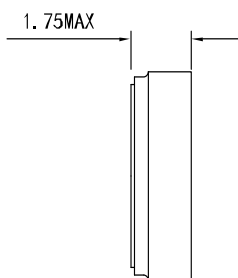
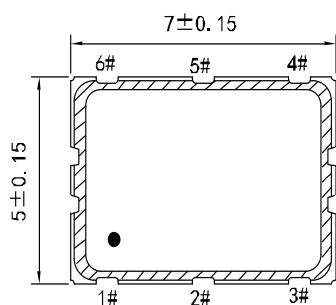
N0.	Item	Electrical Spec.	Notes
1	Holder Type 封装	SMD7050	
2	Nominal Frequency 标称频率	100.000000 MHz	
3	Frequency stability 常温频差	±20ppm	at 25°C±2°C
4	Temperature Drift 温度频差	±30ppm	at -40~85°C
5	Operating voltage 工作电压	3.3V	±5% max.
6	Output 输出模式	LVDS	
7	Output load 输出负载	100Ω	Between OUT & OUTN,EN=Open
8	Current consumption 消耗电流	11 mA Typ.	22 mA max. V _{DD} =3.3V, EN=Open
9	Operating temperature Range 工作温度范围	-40~85°C	
10	Storage Temperature Range 存储温度范围	-55~125°C	
11	Duty Cycle 占空比	45%-55%	
12	Rise / Fall Time 上升/下降沿时间	1 nS max.	20~80%V _{opp}
13	High output voltage 高电平	1.6V max.	DC Characteristics
14	Low output voltage 低电平	0.9V min.	DC Characteristics
15	Start-up Time 起振时间	10mS max.	To 90% of Final Amplitude
16	Phase noise 相位噪声	-130dBc/Hz Typ.	at 1KHz offset.-125dBc/Hz Max.
17	RMS Phase Jitter 均方根抖动	0.1pSec Typ.	12KHz - 20MHz.0.3pSec Max.
18	Enable Voltage High (Logic 1) 使能高电平	70%V _{dd} min.	Output will be enable if EN is Logic 1 or open ; Output will be disable if EN is Logic 0. 输出使能EN是高电平1或者悬空, 频率输出; 输出使能EN是低电平0, 则无频率输出。
19	Enable Voltage Low (Logic 0) 使能低电平	30%V _{dd} max.	
20	Aging 老化	±3ppm	1st. Year at 25°C

SHENZHEN SCTF ELECTRONICS CO. , LTD

DATE	Specification of differential output oscillator 差分输出石英晶体振荡器规格书	Page:
2024/3/26	P/N: SX7DF100.000B20F30DNN Spec.NO.: SCTF202403351	3

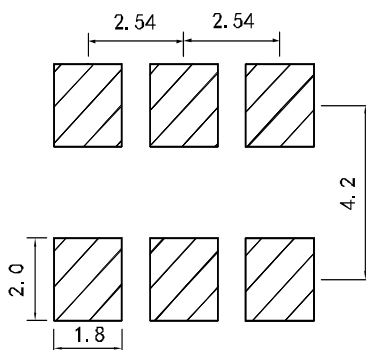
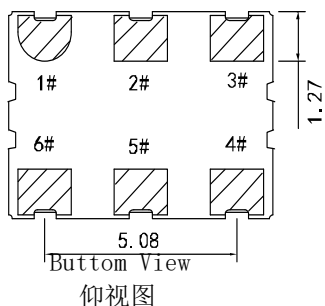
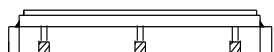
■ DIMENSIONS 产品尺寸

Units (单位): mm(毫米)



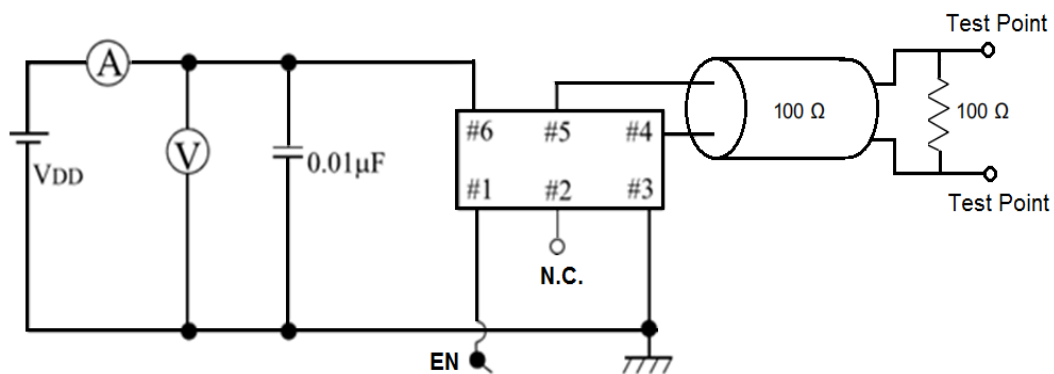
Pad Functions:

1. EN
2. NC
3. GND
4. OUT
5. OUTN
6. VDD



suggested solder pad layout

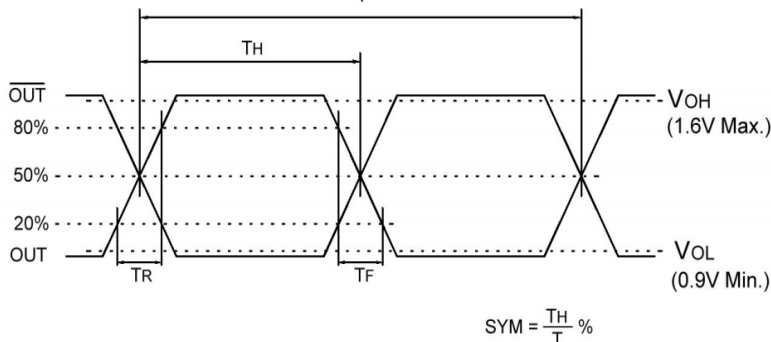
■ TESTING CIRCUIT 测试电路



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

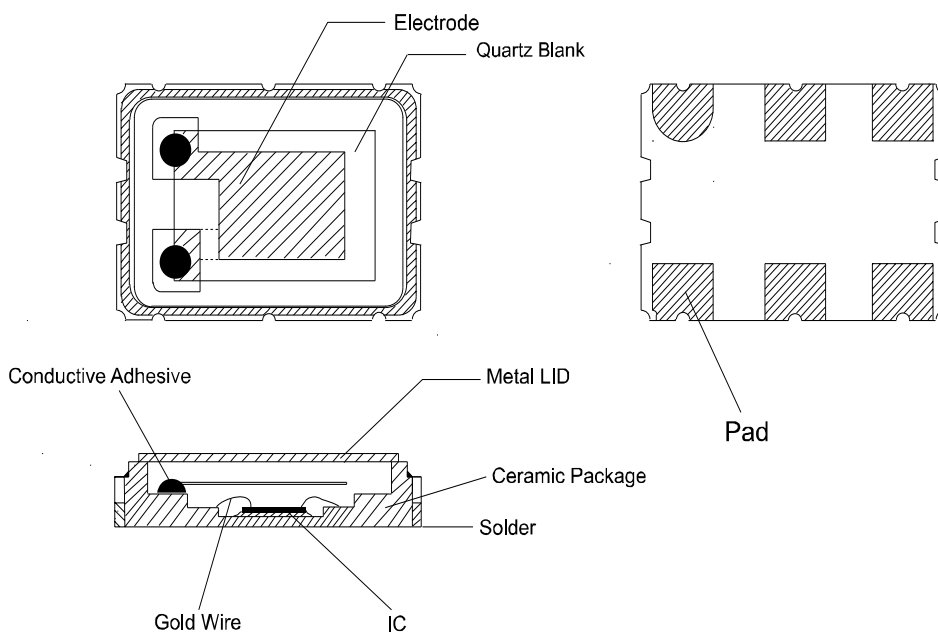
SHENZHEN SCTF ELECTRONICS CO. , LTD		
DATE	Specification of differential output oscillator 差分输出石英晶体振荡器规格书	Page:
2024/3/26	P/N: SX7DF100.000B20F30DNN Spec.NO.: SCTF202403351	4

■ WAVEFORM CONDITIONS 输出波形

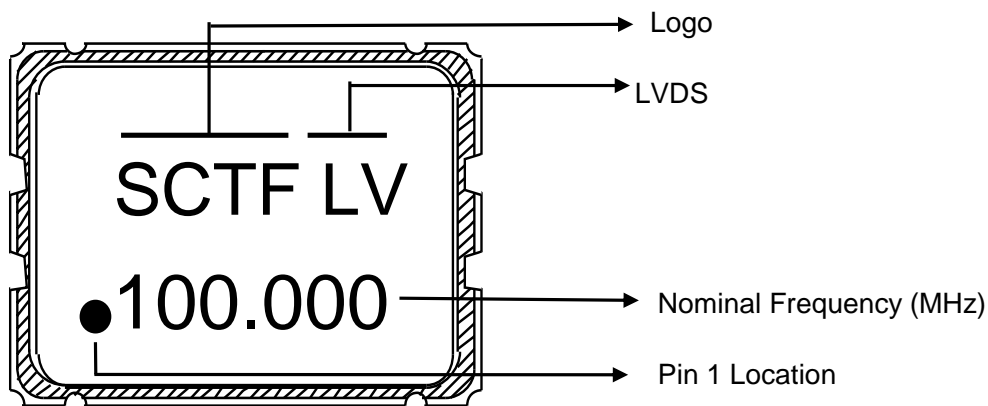


Waveform measurement system should have a min. bandwidth of 5 times the frequency being tested.

■ Product Structure 产品结构



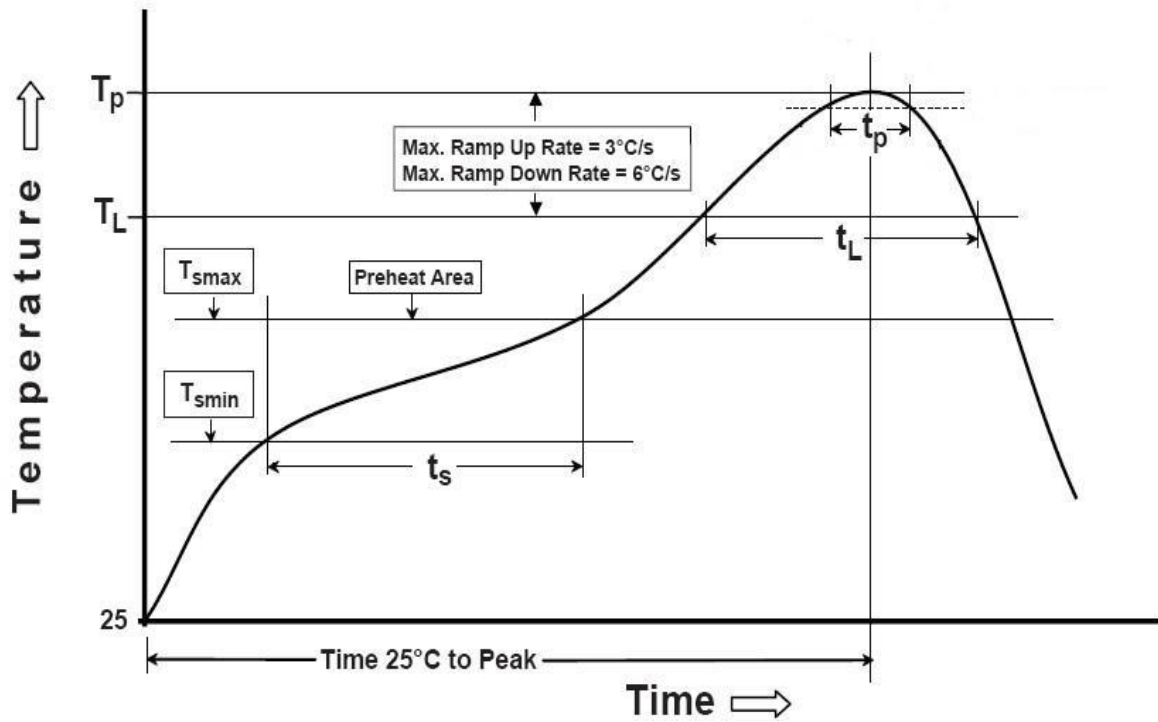
■ Marking 印字



SHENZHEN SCTF ELECTRONICS CO. , LTD		
DATE	Specification of differential output oscillator 差分输出石英晶体振荡器规格书	Page:
2024/3/26	P/N: SX7DF100.000B20F30DNN Spec.NO.: SCTF202403351	5

REFLOW PROFILES 回流焊条件

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat/Soak		
● Temperature Min(T_s min)	100 °C	150 °C
● Temperature Max (T_s max)	150 °C	200 °C
● Time (T_s min to T_s max)	60-120 seconds	60-120 seconds
Ramp-up rate (T_L to T_p)	3 °C/second max.	3 °C/second max.
Time maintained above		
● Liquidous temperature (T_L)	183 °C	217 °C
● Time (t_L) maintained above T_L	60-150 seconds	60-150 seconds
Peak package body temperature (T_p)	235 °C	260 °C
Time within 5 °C of the specified classification temperature (T_p)	20 seconds	30 seconds
Ramp-down rate (T_p to T_L)	6 °C/second max.	6 °C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.
Suggest reflow times	2 Times max.	



SHENZHEN SCTF ELECTRONICS CO. , LTD

DATE	Specification of differential output oscillator 差分输出石英晶体振荡器规格书	Page:
2024/3/26	P/N: SX7DF100.000B20F30DNN Spec.NO.: SCTF202403351	6

■ 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	55cm高处自由跌落到3cm厚木板上,3次 High:55cm;Thickness:3cm;3 times.	$\Delta FL \leq \pm 5 \text{ppm}$
2	振动 Vibration	频率 Frequency:10~57.7Hz:幅度 Amplitude: $\pm 0.75 \text{mm}$ 频率Frequency:57.7Hz~500Hz:加速度幅度acceleration rate:98m/s ² 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.	$\Delta FL \leq \pm 5 \text{ppm}$
3	低温存储 Low Temperature Storage	温度: $-40^\circ\text{C} \pm 2^\circ\text{C}$;时间:96小时 Temp: $-40^\circ\text{C} \pm 2^\circ\text{C}$;Times:96h	$\Delta FL \leq \pm 5 \text{ppm}$
4	高温存储 High Temperature Storage	温度: $125^\circ\text{C} \pm 2^\circ\text{C}$;时间:96小时 Temp: $125^\circ\text{C} \pm 2^\circ\text{C}$;Times:96h	$\Delta FL \leq \pm 5 \text{ppm}$
5	高温高湿 High Temp&Homidit	温度: $85^\circ\text{C} \pm 2^\circ\text{C}$;湿度85% $\pm 5\%$;时间:1000小时 Temp: $80^\circ\text{C} \pm 2^\circ\text{C}$;Humidity:85% $\pm 5\%$;Times:1000h	$\Delta FL \leq \pm 5 \text{ppm}$
6	冷热冲击 Thermal Shock	$-40^\circ\text{C} \pm 2^\circ\text{C}$ (30min) \leftrightarrow $85^\circ\text{C} \pm 2^\circ\text{C}$ (30min);循环100次 $-40^\circ\text{C} \pm 2^\circ\text{C}$ (30min) \leftrightarrow $85^\circ\text{C} \pm 2^\circ\text{C}$ (30min);For 100 cycles	$\Delta FL \leq \pm 5 \text{ppm}$
7	回流焊 Reflow	$150^\circ\text{C} \pm 5^\circ\text{C}$ 保持120s后升到 $265^\circ\text{C} \pm 5^\circ\text{C}$ 保持10s, 升温和保温时间 小于200s, 常温放置1~2h后测定 Keep $150^\circ\text{C} \pm 5^\circ\text{C}$ 120s and then rose to $265^\circ\text{C} \pm 5^\circ\text{C}$ for 10s, warming and holding time is less than the 200s, placed at room temperature 1 ~ 2h after test	$\Delta FL \leq \pm 5 \text{ppm}$
8	盐雾 Salt Spray	盐雾浓度:5%;温度: 35°C ;时间:24小时 Salt density:5%;Temp: 35°C ;Times:24h	目测无明显腐蚀现象 Visual no significant corrosion.
9	老化 Aging	温度: 85°C ;时间:30天 Temp: 85°C ;Times:30days	$\Delta FL \leq \pm 5 \text{ppm}$
10	气密性 Leakage Test	使用氦谱检测设备。 Measured by the helium leak detector.	漏气小于 $1.0 \times 10^{-9} \text{Pa}$ $< 1.0 \times 10^{-9} \text{Pa m}^3/\text{s}$.
11	可焊性 Soldering Test	在 $245^\circ\text{C} \pm 5^\circ\text{C}$ 的锡槽中浸渍 3 ± 0.5 秒。 Dipping in solder bath at $245 \text{deg.C} \pm 5 \text{deg.C}$ for $3 \pm 0.5 \text{ sec}$.	浸锡率大于95% Soldering tin rate greater than 90%

SHENZHEN SCTF ELECTRONICS CO. , LTD

DATE

Specification of differential output oscillator
差分输出石英晶体振荡器规格书

Page:

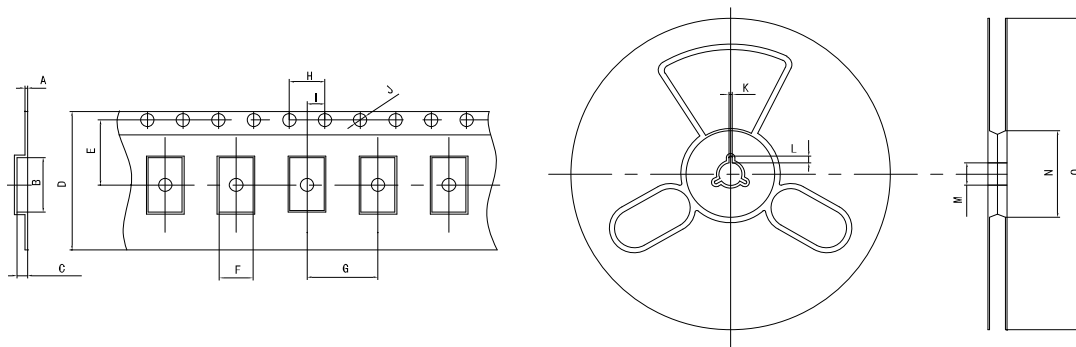
2024/3/26

P/N: SX7DF100.000B20F30DNN
Spec.NO.: SCTF202403351

7

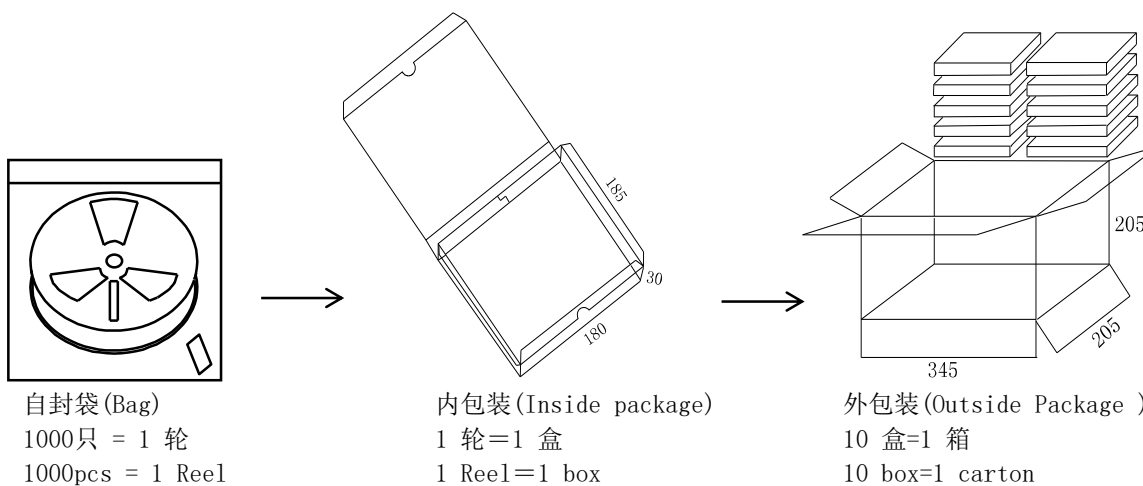
■ Taping Specifications 编带规格

UNIT (单位): mm (毫米)



TEYE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5×7 SMD	0.3	7.5	2.0	16.0	7.5	5.5	8.0	4.0	2.0	1.5	2.0	4.0	13.0	60.0	180.0

■ Packaging specifications 包装规格



SHENZHEN SCTF ELECTRONICS CO., LTD		
DATE	Specification of differential output oscillator 差分输出石英晶体振荡器规格书	Page:
2024/3/26	P/N: SX7DF100.000B20F30DNN Spec.NO.: SCTF202403351	8