

|    |               |
|----|---------------|
| 编号 | SCTF202403348 |
| 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 SMD3225<br>125.000MHz/3.3V/LVDS |
| 供应商物料料号 Part NO.:     | SX3DF125.000B20F30DNN               |
| 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 |
|                            |     |     |

(敬请确认后返回一份, 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



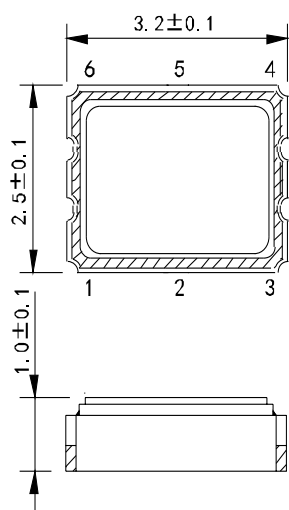
■ Electrical Specification 电气参数

| N0. | Item                                   | Electrical Spec.        | Notes                                                                                                                                       |
|-----|----------------------------------------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Holder Type<br>封装                      | SMD3225                 |                                                                                                                                             |
| 2   | Nominal Frequency<br>标称频率              | 125.000000 MHz          |                                                                                                                                             |
| 3   | Frequency stability<br>常温频差            | ±20ppm                  | at 25°C±2°C                                                                                                                                 |
| 4   | Temperature Drift<br>温度频差              | ±30ppm                  | at -40~85°C                                                                                                                                 |
| 5   | Operating voltage<br>工作电压              | 3.3V                    | ±5% max.                                                                                                                                    |
| 6   | Output<br>输出模式                         | LVDS                    |                                                                                                                                             |
| 7   | Output load<br>输出负载                    | 100Ω                    | Between OUT & OUTN,EN=Open                                                                                                                  |
| 8   | Current consumption<br>消耗电流            | 14 mA max.              | 28 mA max. V <sub>DD</sub> =3.3V, EN=Open                                                                                                   |
| 9   | Operating temperature Range<br>工作温度范围  | -40~85°C                |                                                                                                                                             |
| 10  | Storage Temperature Range<br>存储温度范围    | -55~125°C               |                                                                                                                                             |
| 11  | Duty Cycle<br>占空比                      | 45%-55%                 |                                                                                                                                             |
| 12  | Rise / Fall Time<br>上升/下降沿时间           | 1 nS max.               | 20~80%V <sub>opp</sub>                                                                                                                      |
| 13  | High output voltage<br>高电平             | 1.6V max.               | DC Characteristics                                                                                                                          |
| 14  | Low output voltage<br>低电平              | 0.9V min.               | DC Characteristics                                                                                                                          |
| 15  | Start-up Time<br>起振时间                  | 10mS max.               | To 90% of Final Amplitude                                                                                                                   |
| 16  | Phase noise<br>相位噪声                    | -130dBc/Hz Typ.         | at 1KHz offset.-125dBc/Hz Max.                                                                                                              |
| 17  | RMS Phase Jitter<br>均方根抖动              | 0.1pSec Typ.            | 12KHz - 20MHz.0.3pSec Max.                                                                                                                  |
| 18  | Enable Voltage High (Logic 1)<br>使能高电平 | 70%V <sub>dd</sub> min. | Output will be enable if EN is Logic 1 or open ;<br>Output will be disable if EN is Logic 0.<br>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)<br>使能低电平  | 30%V <sub>dd</sub> max. |                                                                                                                                             |
| 20  | Aging<br>老化                            | ±3ppm                   | 1st. Year at 25°C                                                                                                                           |

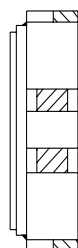
SHENZHEN SCTF ELECTRONICS CO. , LTD

| DATE      | Specification of differential output oscillator<br>差分输出石英晶体振荡器规格书 | Page: |
|-----------|-------------------------------------------------------------------|-------|
| 2024/3/26 | P/N: SX3DF125.000B20F30DNN<br>Spec.NO.: SCTF202403348             | 3     |

## ■ DIMENSIONS 产品尺寸

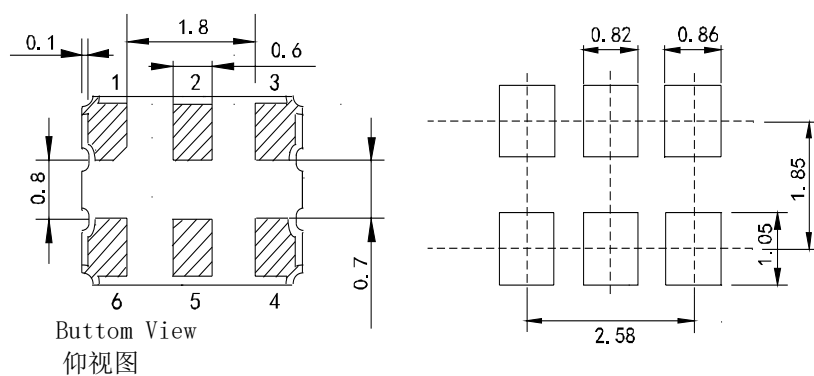


Units (单位): mm(毫米)

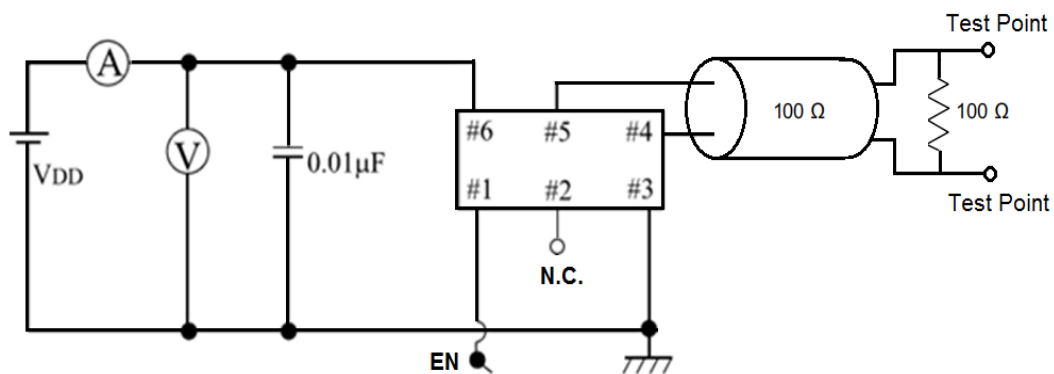


Pad Functions:

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



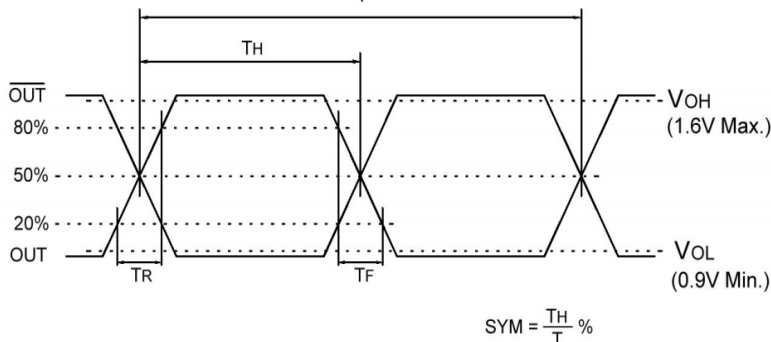
## ■ TESTING CIRCUIT 测试电路



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

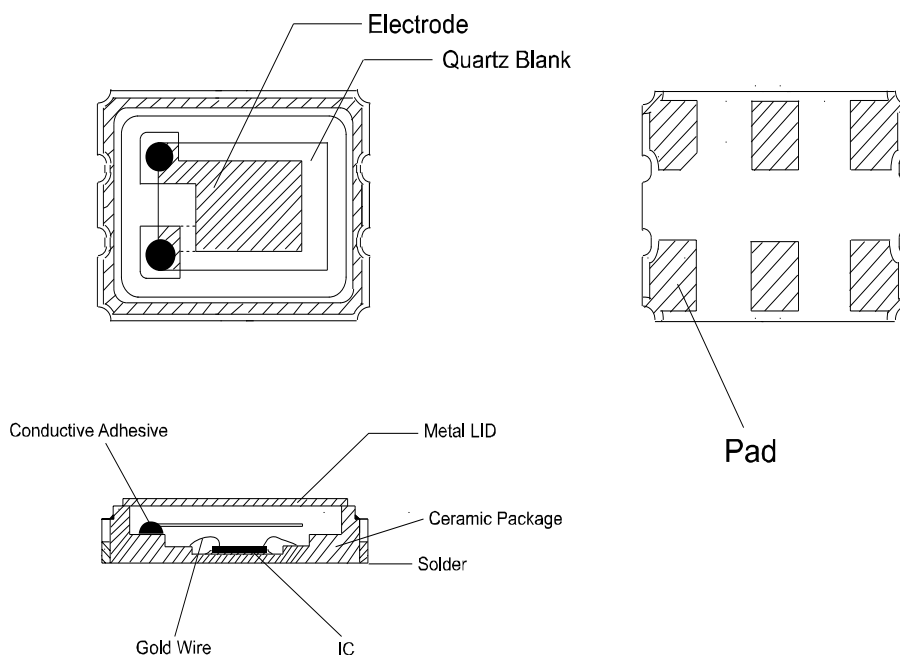
| SHENZHEN SCTF ELECTRONICS CO. , LTD |                                                                   |       |
|-------------------------------------|-------------------------------------------------------------------|-------|
| DATE                                | Specification of differential output oscillator<br>差分输出石英晶体振荡器规格书 | Page: |
| 2024/3/26                           | P/N: SX3DF125.000B20F30DNN<br>Spec.NO.: SCTF202403348             | 4     |

■ WAVEFORM CONDITIONS 输出波形

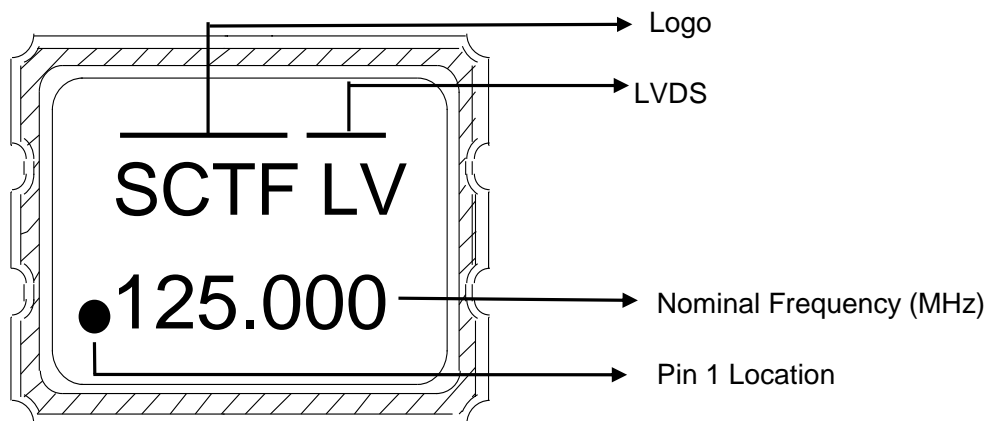


Waveform measurement system should have a min. bandwidth of 5 times the frequency being tested.

■ Product Structure 产品结构



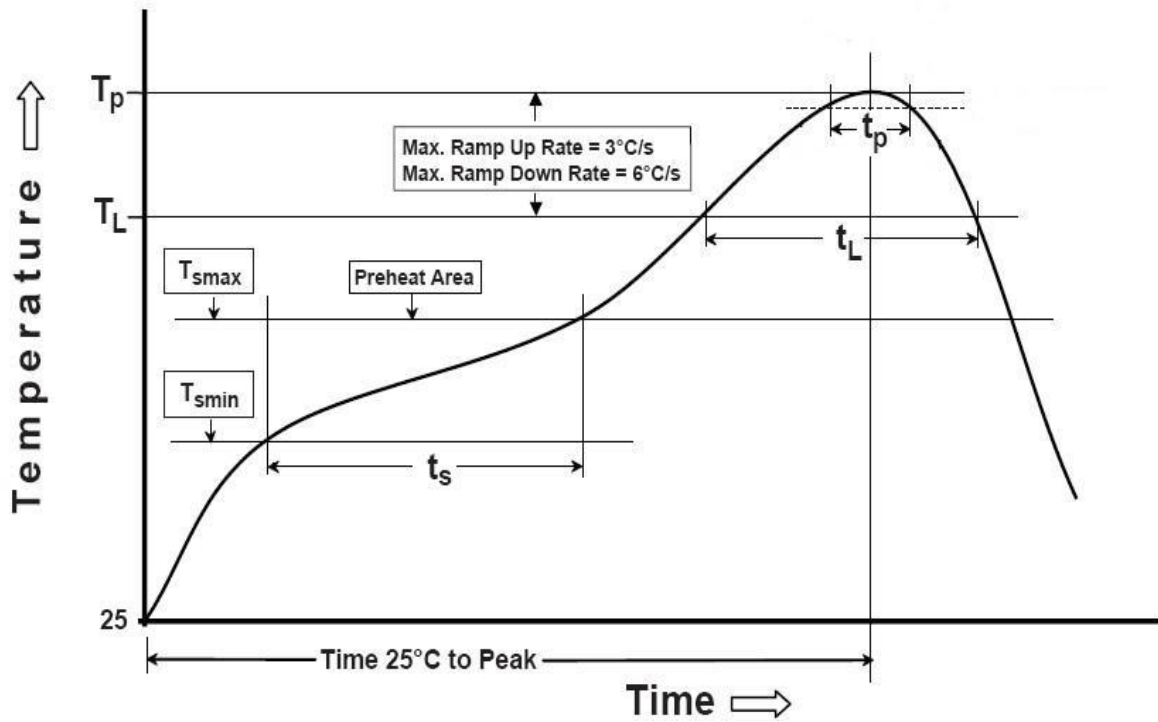
■ Marking 印字



|                                     |                                                                   |       |
|-------------------------------------|-------------------------------------------------------------------|-------|
| SHENZHEN SCTF ELECTRONICS CO. , LTD |                                                                   |       |
| DATE                                | Specification of differential output oscillator<br>差分输出石英晶体振荡器规格书 | Page: |
| 2024/3/26                           | P/N: SX3DF125.000B20F30DNN<br>Spec.NO.: SCTF202403348             | 5     |

REFLOW PROFILES 回流焊条件

| Profile Feature                                                   | Sn-Pb Eutectic Assembly | Pb-Free Assembly |
|-------------------------------------------------------------------|-------------------------|------------------|
| Preheat/Soak                                                      |                         |                  |
| ● Temperature Min(Ts min)                                         | 100 °C                  | 150 °C           |
| ● Temperature Max (Ts max)                                        | 150 °C                  | 200 °C           |
| ● Time (Ts min to Ts max)                                         | 60-120 seconds          | 60-120 seconds   |
| Ramp-up rate (TL to Tp)                                           | 3 °C/second max.        | 3 °C/second max. |
| Time maintained above                                             |                         |                  |
| ● Liquidous temperature (TL)                                      | 183 °C                  | 217 °C           |
| ● Time (tL) maintained above TL                                   | 60-150 seconds          | 60-150 seconds   |
| Peak package body temperature (Tp)                                | 235 °C                  | 260 °C           |
| 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.   |
| <b>Suggest reflow times</b>                                       | <b>2 Times max.</b>     |                  |



|                                     |                                                                   |       |
|-------------------------------------|-------------------------------------------------------------------|-------|
| SHENZHEN SCTF ELECTRONICS CO. , LTD |                                                                   |       |
| DATE                                | Specification of differential output oscillator<br>差分输出石英晶体振荡器规格书 | Page: |
| 2024/3/26                           | P/N: SX3DF125.000B20F30DNN<br>Spec.NO.: SCTF202403348             | 6     |

## ■ RELIABILITY SPECIFICATION 可靠性参数

| 序号<br>NO. | 项目<br>ITEM                       | 条件<br>CONDITIONS                                                                                                                                                                                                                                                                                                                                                          | 合格标准<br>BASIS OF VERDICT                                                               |
|-----------|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1         | 跌落<br>DROP                       | 75cm高处自由跌落到3cm厚木板上,3次<br>High:55cm;Thickness:3cm;3 times.                                                                                                                                                                                                                                                                                                                 | $\Delta FL \leq \pm 5 \text{ppm}$                                                      |
| 2         | 振动<br>Vibration                  | 频率 Frequency:10~57.7Hz:幅度 Amplitude: $\pm 0.75 \text{mm}$<br>频率Frequency:57.7Hz~500Hz:加速度幅度acceleration<br>rate:98m/s <sup>2</sup><br>周期 Cycle time:10-500-10Hz: 15min<br>振动方向 Direction:X,Y, Z<br>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<br>Low Temperature Storage  | 温度: $-40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ ;时间:96小时<br>Temp: $-40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ ;Times:96h                                                                                                                                                                                                                                                  | $\Delta FL \leq \pm 5 \text{ppm}$                                                      |
| 4         | 高温存储<br>High Temperature Storage | 温度: $125^{\circ}\text{C} \pm 2^{\circ}\text{C}$ ;时间:96小时<br>Temp: $125^{\circ}\text{C} \pm 2^{\circ}\text{C}$ ;Times:96h                                                                                                                                                                                                                                                  | $\Delta FL \leq \pm 5 \text{ppm}$                                                      |
| 5         | 高温高湿<br>High Temp&Homidit        | 温度: $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$ ;湿度85% $\pm 5\%$ ;时间:1000小时<br>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<br>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<br>$-40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ (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<br>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<br>小于200s, 常温放置1~2h后测定<br>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,<br>warming and holding time is less than the 200s, placed at room<br>temperature 1 ~ 2h after test | $\Delta FL \leq \pm 5 \text{ppm}$                                                      |
| 8         | 盐雾<br>Salt Spray                 | 盐雾浓度:5%;温度: $35^{\circ}\text{C}$ ;时间:24小时<br>Salt density:5%;Temp: $35^{\circ}\text{C}$ ;Times:24h                                                                                                                                                                                                                                                                        | 目测无明显腐蚀现象<br>Visual no significant<br>corrosion.                                       |
| 9         | 老化<br>Aging                      | 温度: $85^{\circ}\text{C}$ ;时间:30天<br>Temp: $85^{\circ}\text{C}$ ;Times:30days                                                                                                                                                                                                                                                                                              | $\Delta FL \leq \pm 5 \text{ppm}$                                                      |
| 10        | 气密性<br>Leakage Test              | 使用氦谱检测设备。<br>Measured by the helium leak detector.                                                                                                                                                                                                                                                                                                                        | 漏气小于 $1.0 \times 10^{-9} \text{Pa}$<br>$< 1.0 \times 10^{-9} \text{Pa m}^3/\text{s}$ . |
| 11        | 可焊性<br>Soldering Test            | 在 $245^{\circ}\text{C} \pm 5^{\circ}\text{C}$ 的锡槽中浸渍 $3 \pm 0.5$ 秒。<br>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%<br>Soldering tin rate<br>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:

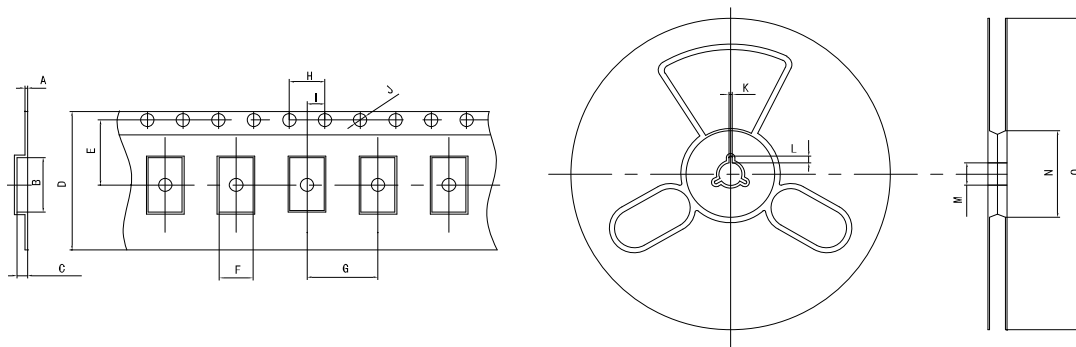
2024/3/26

P/N: SX3DF125.000B20F30DNN  
Spec.NO.: SCTF202403348

7

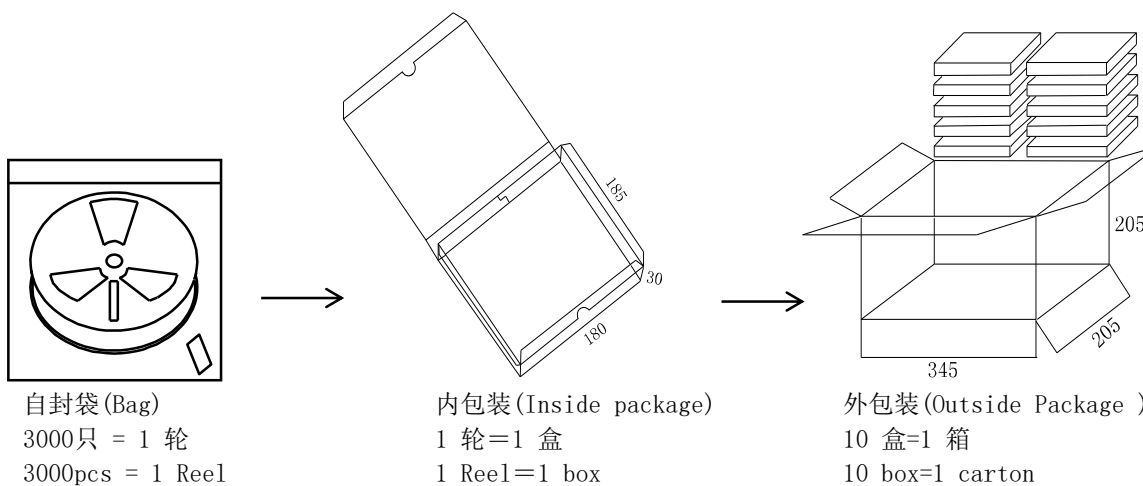
## ■ Taping Specifications 编带规格

UNIT (单位): mm (毫米)



| TEYE        | A    | B    | C    | D    | E    | F    | G    | H    | I    | J    | K    | L    | M     | N     | O      |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|--------|
| 3.2×2.5 SMD | 0.25 | 3.60 | 1.30 | 8.00 | 3.50 | 2.90 | 4.00 | 4.00 | 2.00 | 1.50 | 2.00 | 4.00 | 13.00 | 60.00 | 180.00 |

## ■ Packaging specifications 包装规格



| SHENZHEN SCTF ELECTRONICS CO. , LTD |                                                                   |       |
|-------------------------------------|-------------------------------------------------------------------|-------|
| DATE                                | Specification of differential output oscillator<br>差分输出石英晶体振荡器规格书 | Page: |
| 2024/3/26                           | P/N: SX3DF125.000B20F30DNN<br>Spec.NO.: SCTF202403348             | 8     |