

编号	SCTF2022LC914
日期	2022-9-19
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 : 差分石英晶体振荡器

产品描述 Description : OSC7050 148.500MHz 3.3V LVDS ±20ppm

供应商物料料号 Part NO. : SX7M148.500B20F30DNN

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	APPR. 审核/印章
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**产品规格书**  
**SPECIFICATION FOR APPROVAL**

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### 3 Revised Page

Rev.	Revise page	Revise Contents	Date	Ref. No.	Reviser
1	N/A	Initial released	2022-9-19	N/A	吴丽红

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# 4 QUARTZ CRYSTAL UNIT SPECIFICATION

## ■ Electrical Specification 电气参数

No.	Item	Symb.	Electrical Spec.	Unit	Notes
1	Holder Type 封装		SMD 7050		
2	Nominal Frequency 标称频率	Fo	148.500000	MHz	
3	Frequency Stability 常温频差	Fo_tol	± 20	ppm	T_use = + 25°C
4	Temperature Drift 温度频差	Fo_Tc	± 30	ppm	T_use = - 40°C ~ +85 °C
5	Operating Voltage 工作电压	VDD	3.3	V	± 10% max.
6	Output 输出模式		LVDS		
7	Output Load 负载		100	Ω	
8	Current Consumption 消耗电流	Icc	75 Max.	mA	At maximum supply voltage
9	Operating Temperature Range 工作温度范围	T_use	-40~+85	°C	
10	Storage Temperature Range 保存温度范围	T_stg	-55~+125	°C	
11	Duty Cycle 占空比	TH/T	45 ~ 55	%	
12	Rise / Fall Time 上升/下降沿时间	Tr/Tf	1.0 Max.	ns	
13	Low Output Voltage 低电平	VoL	0.9 Min.	V	
14	High Output Voltage 高电平	VoH	1.6 Max.	V	
15	Start-up Time 启动时间	S_T	3.0 Max.	ms	
16	Enable Voltage High (Logic 1) 使能高电平	Vhi	70% Vdd Min.	V	Logic "1" Or Floating input, Outputs enable; Logic "0", Outputs disable
17	Enable Voltage Low (Logic 0) 使能低电平	Vlo	30% Vdd Max.	V	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
18	RMS Phase Jitter 抖动		0.5 Max.	pSec	Period Jitter(12KHz-20MHz)
19	Aging 老化	f_age	± 3.0	ppm	First year at 25°C

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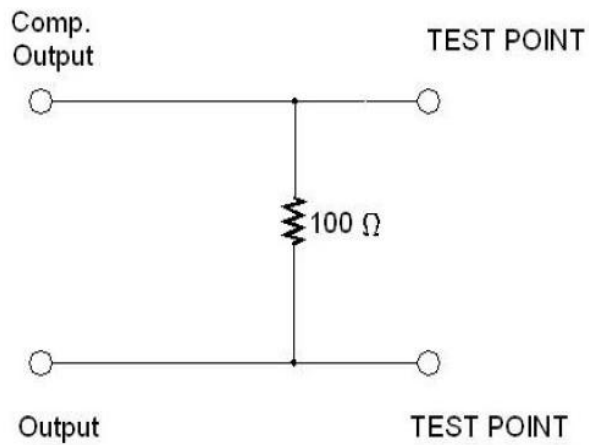
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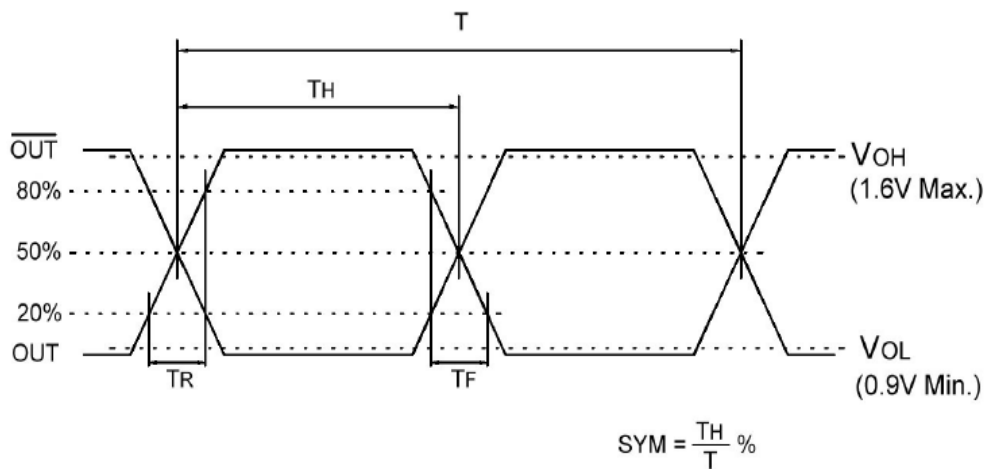
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## 5 TEST CIRCUIT & OUTPUT WAVEFORM

### ■ TESTING CIRCUIT 测试电路



### ■ WAVEFORM CONDITIONS 输出波形



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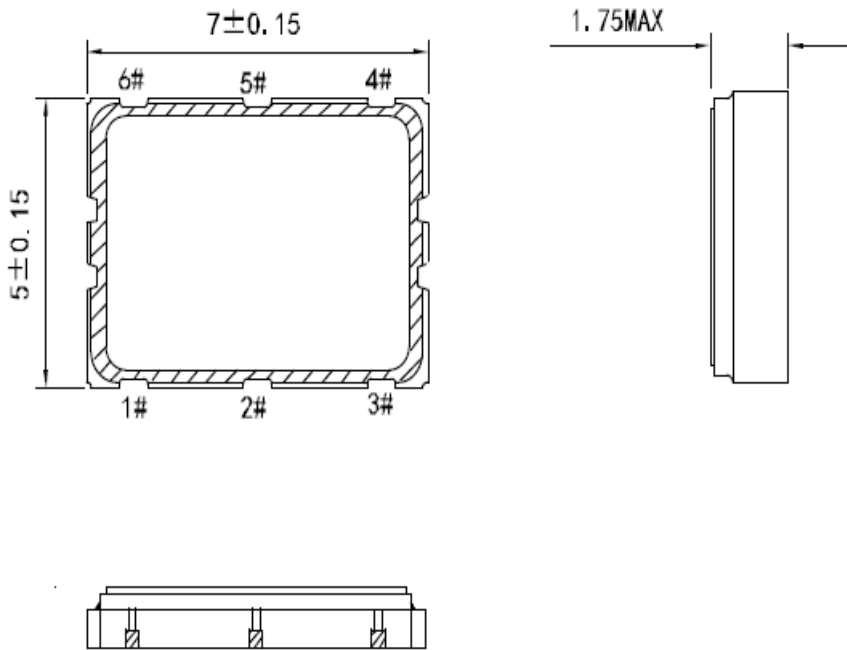
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## 6 DIMENSIONS

### ■ DIMENSIONS 产品尺寸

Units (单位): mm(毫米)

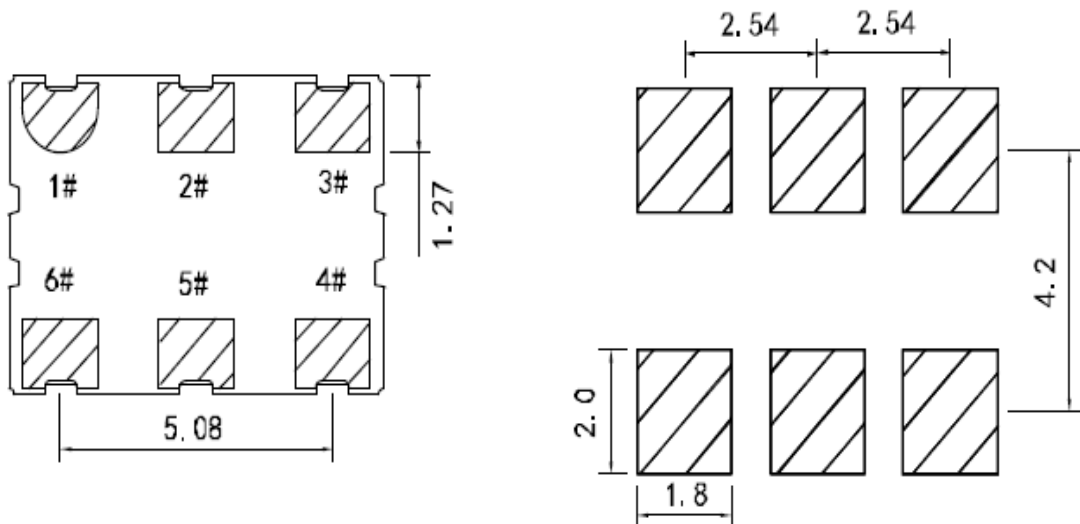


Pin	Function
#1	Tri-State
#2	N.C
#3	GND.
#4	Output
#5	Comp. Output
#6	$V_{DD}$

### ■ Pad size 焊盘尺寸

Bottom View

Suggested solder pad layout

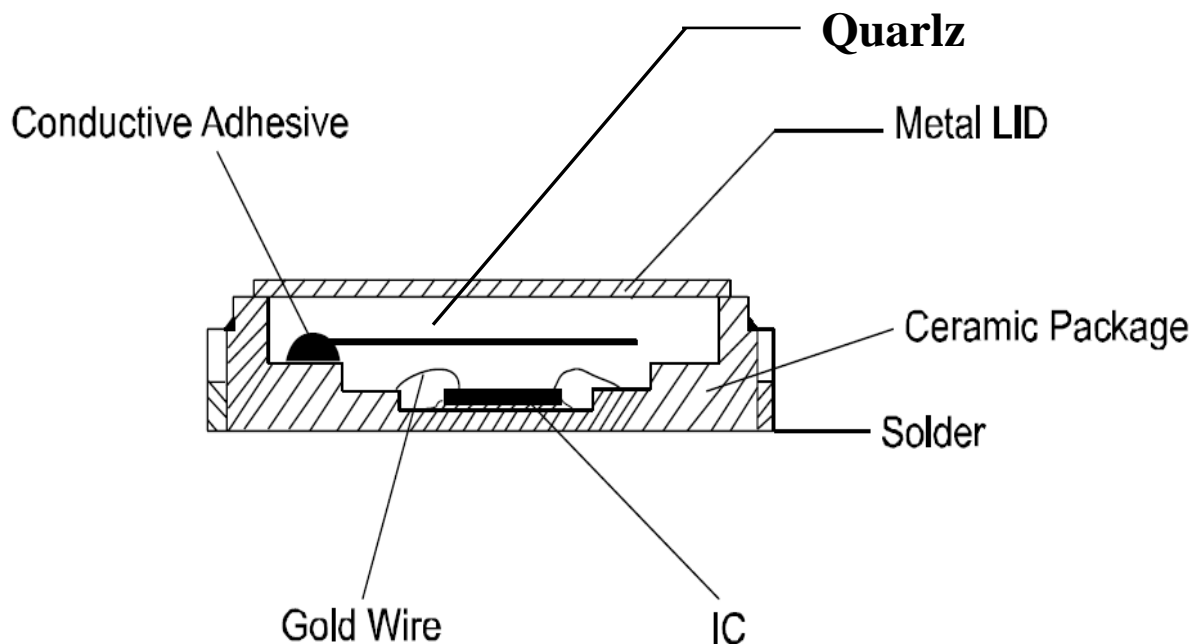


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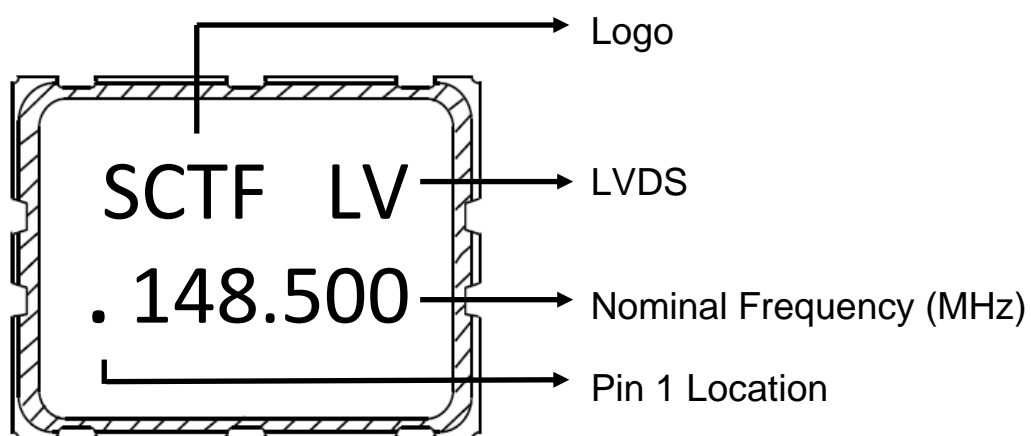
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## 7 PRODUCT STRUCTURE & MARKING

### ■ Product Structure 产品结构



### ■ Marking 印字

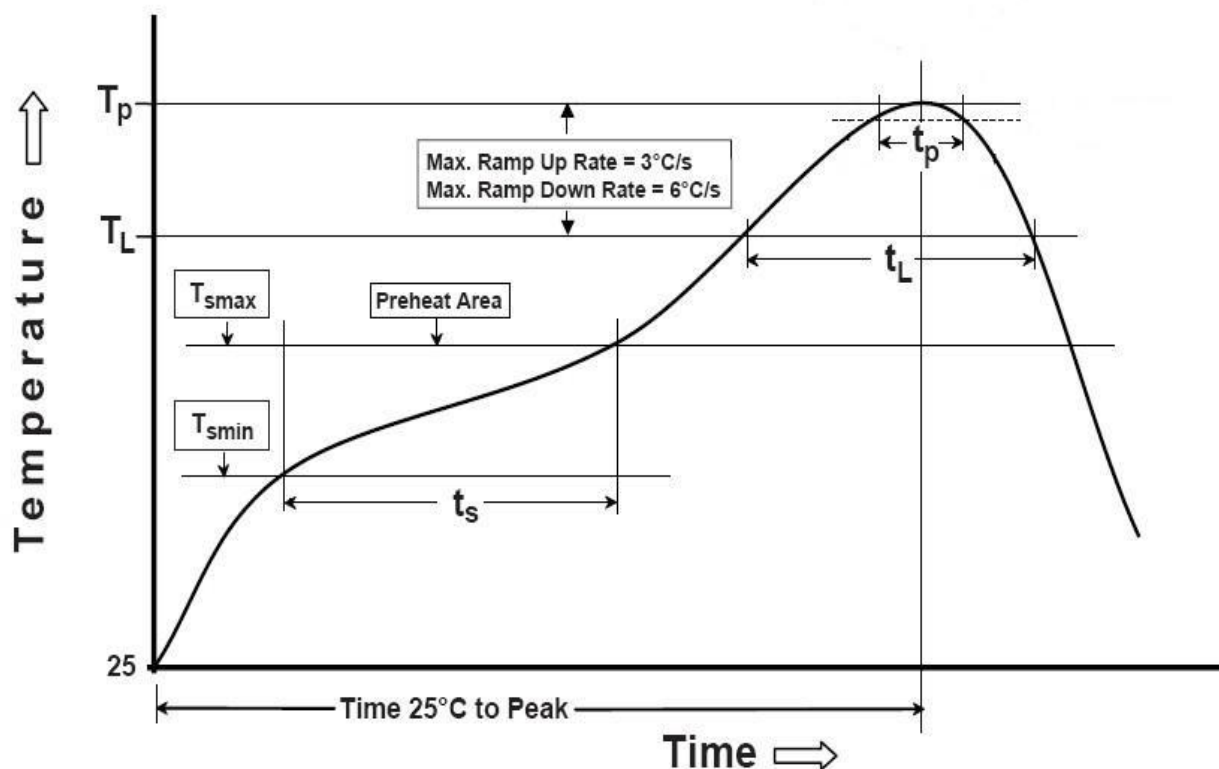


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## 8 REFLOW PROFILES

### REFLOW PROFILES 回流焊条件

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
<b>Preheat/Soak</b>		
● 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 (TL to $T_p$ )	3 °C/second max.	3 °C/second max.
<b>Time maintained above</b>		
● Liquidous temperature (TL)	183 °C	217 °C
● Time ( $t_L$ ) maintained above TL	60-150 seconds	60-150 seconds
Peak package body temperature ( $T_p$ )	235 °C	260 °C
Time within 5 °C of the specified	20 seconds	30 seconds
Ramp-down rate ( $T_p$ 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>	



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## 9 RELIABILITY SPECIFICATION

### ■ Environmental and mechanical characteristics 可靠性参数

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.	$\Delta FL \leq \pm 5PPM$
2	振动 VIBRATION	频率 Frequency:10~57.7Hz:幅度 Amplitude: $\pm 0.75mm$ 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.	$\Delta FL \leq \pm 5PPM$
3	温度变化 TEMPERATURE SHOCK	$-40^{\circ}C \pm 2^{\circ}C$ (30min) $\leftarrow \rightarrow 85^{\circ}C \pm 2^{\circ}C$ (30min);循环10次 $-40^{\circ}C \pm 2^{\circ}C$ (30min) $\leftarrow \rightarrow 85^{\circ}C \pm 2^{\circ}C$ (30min);For 10	$\Delta FL \leq \pm 5PPM$
4	湿热 HUMIDITY	cycles 温度: $40^{\circ}C \pm 2^{\circ}C$ ;湿度90-95%;时间:96小时 Temp: $40^{\circ}C \pm 2^{\circ}C$ ;Humidity:90-95%;Times:96h	$\Delta FL \leq \pm 5PPM$
5	低温 COLD RESISTANCE	温度: $-40^{\circ}C \pm 2^{\circ}C$ ;时间:96小时 Temp: $-40^{\circ}C \pm 2^{\circ}C$ ;Times:96h	$\Delta FL \leq \pm 5PPM$
6	高温1 HEAT RESISTANCE 1	温度: $100^{\circ}C \pm 2^{\circ}C$ ;时间:96小时 Temp: $100^{\circ}C \pm 2^{\circ}C$ ;Times:96h	$\Delta FL \leq \pm 5PPM$
7	高温2 HEAT RESISTANCE 2	温度: $155^{\circ}C \pm 2^{\circ}C$ ;时间:2小时 Temp: $155^{\circ}C \pm 2^{\circ}C$ ;Times:2h	$\Delta FL \leq \pm 5PPM$
8	高温3 HEAT RESISTANCE 3	温度: $85^{\circ}C \pm 2^{\circ}C$ ;电压:3.3V/5.0V;时间:96小时 Temp: $85^{\circ}C \pm 2^{\circ}C$ ;Voltage:3.3V/5.0V;Times:96h	$\Delta FL \leq \pm 5PPM$
9	回流焊 REFLOW	$150^{\circ}C \pm 5^{\circ}C$ 保持120s后升到 $270^{\circ}C \pm 5^{\circ}C$ 保持10s, 升温和 保温时间小于200s, 常温放置1~2h后测定 Keep $150^{\circ}C \pm 5^{\circ}C$ 120s and then rose to $270^{\circ}C \pm 5^{\circ}C$ for 10s, warming and holding time is less than the 200s, placed at room temperature 1 ~ 2h after test	$\Delta FL \leq \pm 5PPM$
10	盐雾 SALT SPRAY	盐雾浓度:5%;温度: $35^{\circ}C$ ;时间:24小时 Salt density:5%;Temp: $35^{\circ}C$ ;Times:24h	目测无明显腐蚀现象 Visual no significant
11	老化 AGING	温度: $85^{\circ}C$ ;时间:30天 Temp: $85^{\circ}C$ ;Times:30days	$\Delta FL \leq \pm 5PPM$
12	气密性 LEAKAGE	氦气(0.6~0.65MPa):10分钟 He(0.6~0.65MPa):10min	$\leq 3 \times 10^{-9} Pa \cdot m^3/s$
13	焊接 SOLDER	温度: $260^{\circ}C \pm 5^{\circ}C$ Temp: $260^{\circ}C \pm 5^{\circ}C$	浸锡率大于90% Soldering tin

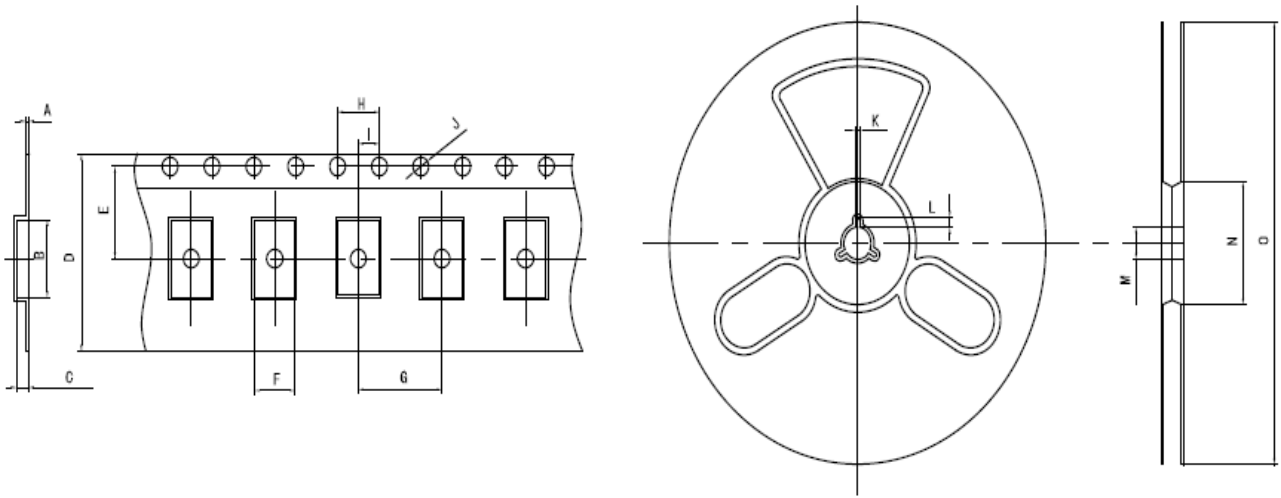
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# 10 PACKAGE

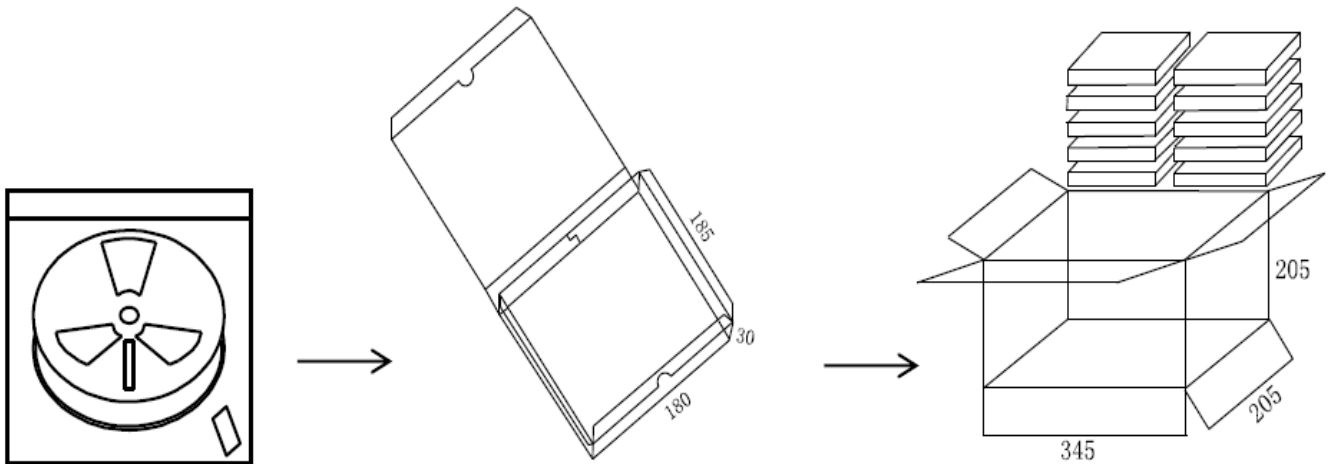
## ■ Taping Specifications 编带

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	1.8	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



自封袋 (Bag)  
1000只 = 1 轮  
1000pcs = 1 Reel

内包装 (Inside package)  
1 轮 = 1 盒  
1 Reel = 1 box

外包装 (Outside Package)  
10 盒 = 1 箱  
10 box = 1 carton

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