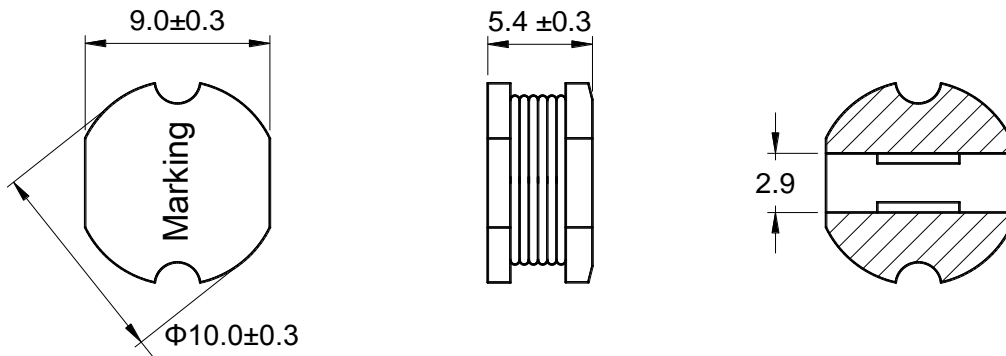


### Outline: 产品概要

- Small size, high rated current, low DCR.  
小尺寸，耐大电流，低直流电阻。
- Lead free product, RoHS compliant.  
无铅产品，符合 RoHS 指令。
- Carrier tape packing, suitable for SMT process.  
载带包装，适用于回流焊 SMT 工艺。
- Widely used in buck converter, displayer, laptop, network communication equipment, and etc.  
广泛应用于升降压转换器，显示器，笔记本电脑，网络通信设备等。
- Operating temperature :  $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$   
(Including coil's temperature rise)  
工作温度： $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$  (包含线圈发热)

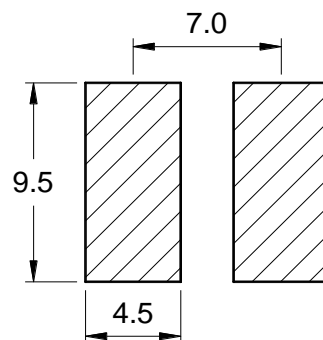
### 1 Appearance and dimensions (mm) 外形尺寸



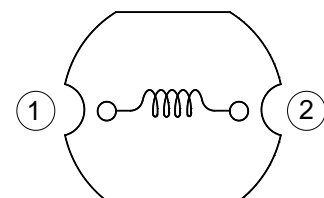
### 2 Marking 印字标识



### 3 Reference land pattern (mm) 参考基板尺寸



### 4 Schematic 原理图



## 5 Electrical characteristics

### 电气特性

Part No. 型号	Inductance (μH) 电感值 ※1	D.C.R. (mΩ) 直流电阻		Saturation current (A) 饱和电流 ※2		Temperature rise current (A) 温升电流 ※3
		Typical	Max	Typical	Max	Typical
SP105-1R2M	1.20 ±20%	5.91	7.09	12.0	9.60	8.81
SP105-1R8M	1.80 ±20%	7.22	8.66	10.2	8.16	8.26
SP105-3R3M	3.30 ±20%	10.3	12.3	7.90	6.32	6.65
SP105-4R7M	4.70 ±20%	12.0	14.3	7.00	5.60	6.46
SP105-6R8M	6.80 ±20%	15.4	18.4	5.80	4.64	5.72
SP105-8R2M	8.20 ±20%	19.3	23.1	5.10	4.08	5.17
SP105-100K	10.0 ±10%	21.0	25.1	4.50	3.60	4.89
SP105-120K	12.0 ±10%	25.2	30.2	4.20	3.36	4.47
SP105-150K	15.0 ±10%	29.5	35.4	3.80	3.04	4.11
SP105-180K	18.0 ±10%	36.4	43.7	3.50	2.80	3.73
SP105-220K	22.0 ±10%	45.6	54.7	3.20	2.56	3.31
SP105-270K	27.0 ±10%	54.1	64.9	2.85	2.28	3.06
SP105-330K	33.0 ±10%	67.0	80.4	2.60	2.08	2.72
SP105-390K	39.0 ±10%	80.7	96.8	2.40	1.92	2.49
SP105-470K	47.0 ±10%	92.7	111	2.20	1.76	2.32
SP105-560K	56.0 ±10%	109	131	2.00	1.60	2.17
SP105-680K	68.0 ±10%	129	155	1.80	1.44	1.96
SP105-820K	82.0 ±10%	161	193	1.60	1.28	1.76
SP105-101K	100 ±10%	190	228	1.45	1.16	1.62
SP105-121K	120 ±10%	234	280	1.35	1.08	1.44
SP105-151K	150 ±10%	265	318	1.23	0.98	1.37
SP105-181K	180 ±10%	341	410	1.13	0.90	1.23
SP105-221K	220 ±10%	400	480	1.02	0.82	1.12
SP105-271K	270 ±10%	500	600	0.92	0.74	1.00
SP105-331K	330 ±10%	627	752	0.82	0.66	0.88
SP105-391K	390 ±10%	706	847	0.76	0.61	0.83
SP105-471K	470 ±10%	850	1,020	0.70	0.56	0.76
SP105-561K	560 ±10%	1,000	1,200	0.63	0.50	0.70
SP105-681K	680 ±10%	1,204	1,445	0.58	0.46	0.65
SP105-821K	820 ±10%	1,430	1,716	0.51	0.41	0.58
SP105-102K	1,000 ±10%	1,842	2,210	0.47	0.38	0.52
SP105-222K	2,200 ±10%	3,850	4,620	0.35	0.28	0.36
SP105-472K	4,700 ±10%	8,640	1,0300	0.24	0.20	0.24

■ All data is tested based on 25°C ambient temperature.  
所有数据基于环境温度 25°C 条件下测试。

※1 Inductance measure condition at 1kHz, 0.25V.  
电感测试条件为 1kHz, 0.25V。

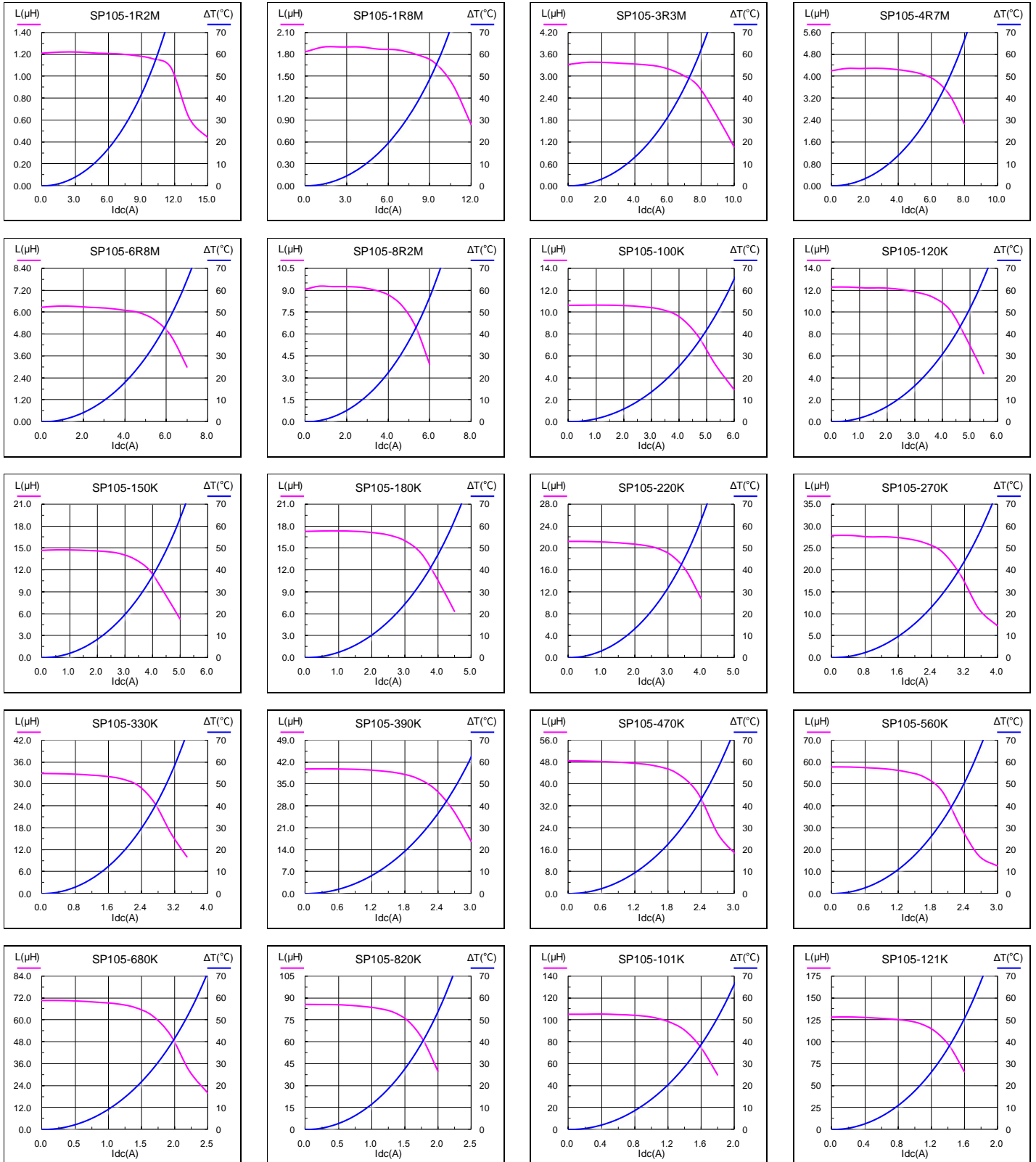
※2 Saturation current: the actual value of DC current when the inductance decrease 20% of its initial value.  
饱和电流: 电感值下降其初始值的 20% 时所加载的实际直流电流值。

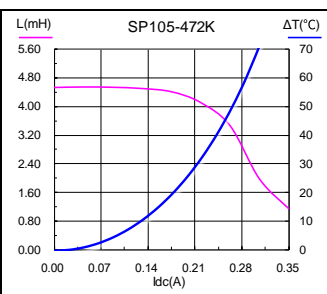
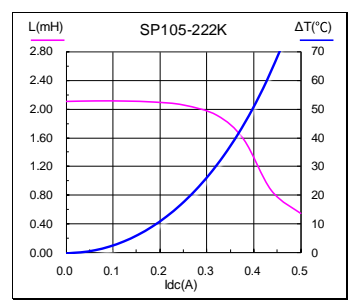
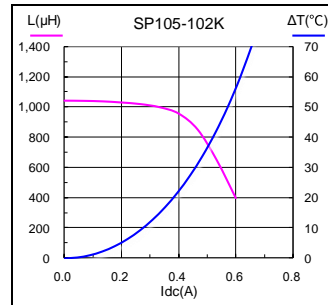
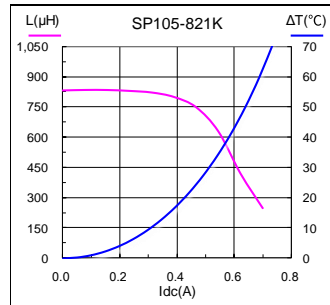
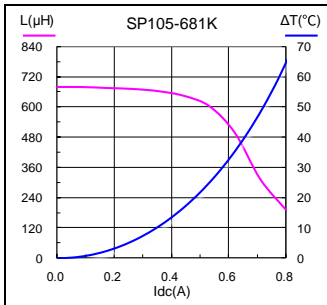
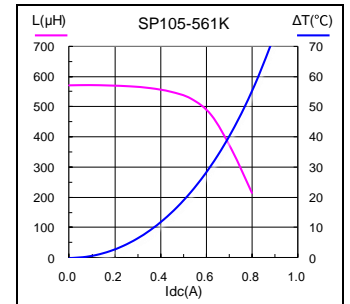
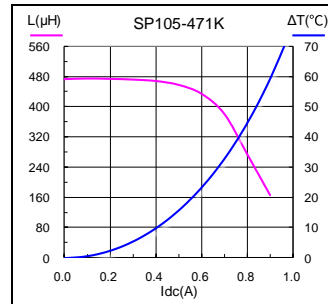
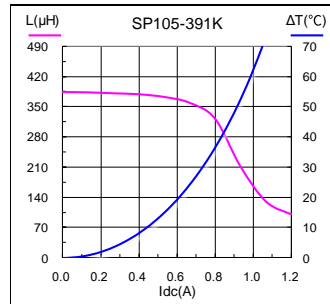
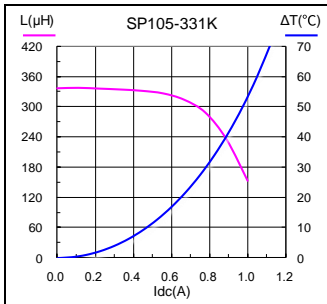
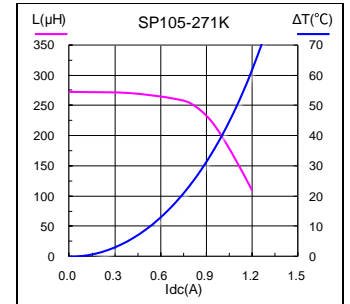
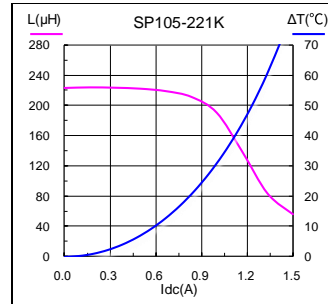
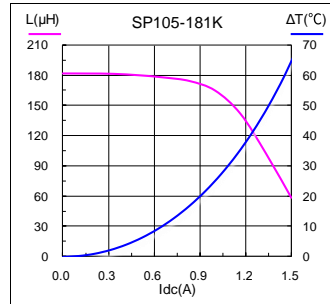
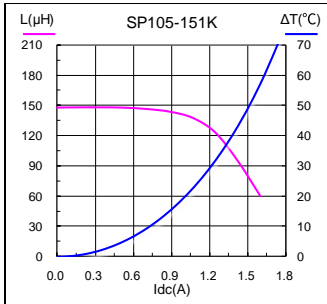
※3 Temperature rise current: the actual value of DC current when the temperature rise is ΔT40°C (Ta=25°C).  
温升电流: 使产品温度上升到 ΔT40°C 时所加载的实际直流电流值 (Ta=25°C)。

※ Special remind: Circuit design, component placement, PWB size and thickness, cooling system and etc. all will affect the product temperature. Please verify the product temperature in the final application.  
特别提醒: 线路设计, 组件布局, 印刷电路板(PWB)尺寸及厚度, 散热系统等均会影响产品温度。

请务必在最终应用时, 验证产品发热状况。

## 6 Saturation current VS temperature rise current curve 饱和电流 VS 温升电流曲线



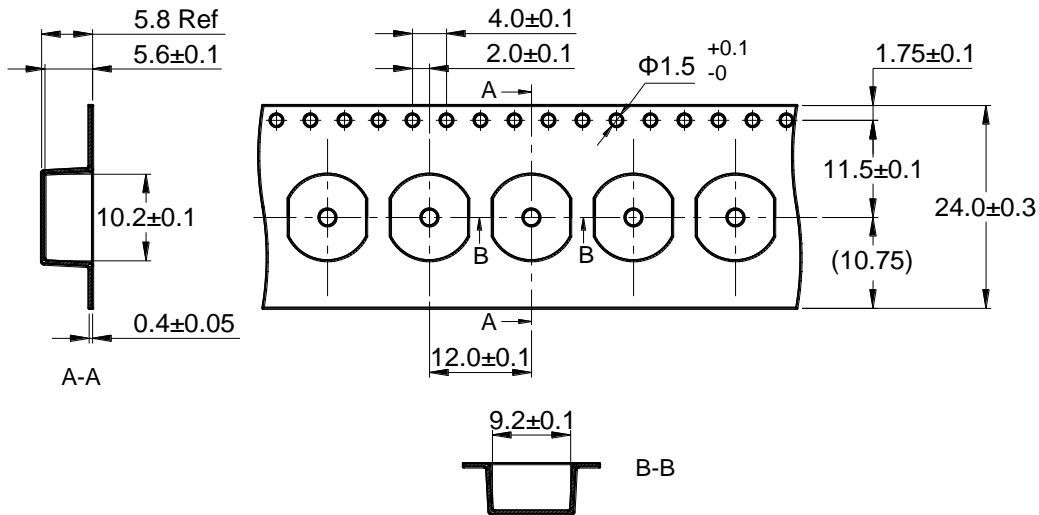


## 7 Packing specification

### 包装规格

#### 7.1 Carrier tape dimensions (mm)

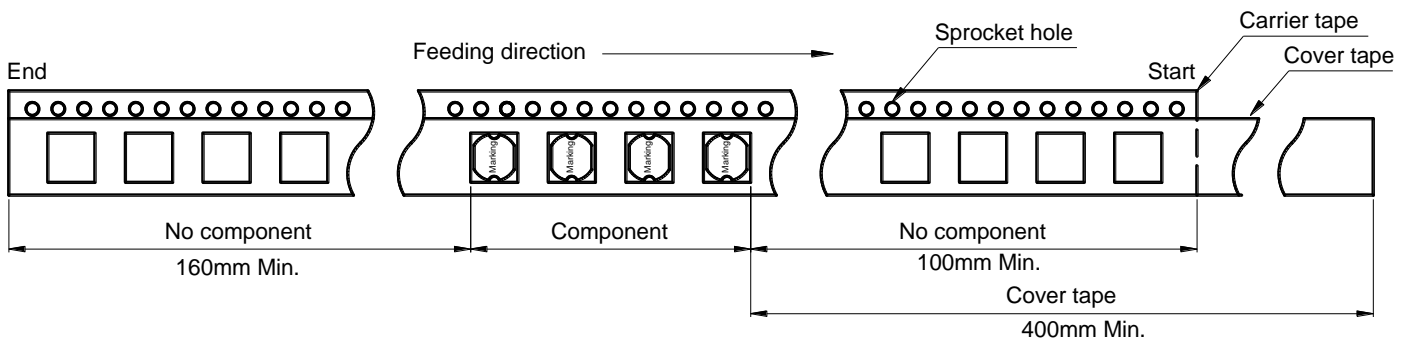
##### 载带尺寸



※ Packing is referred to the international standard IEC 60286-3.  
包装参照国际标准 IEC 60286-3。

#### 7.2 Tape direction

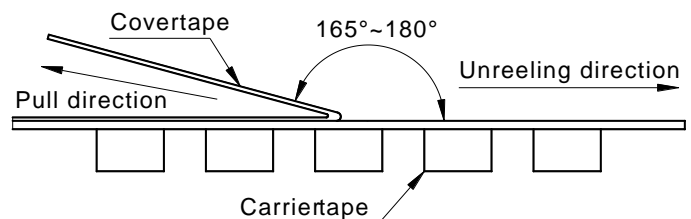
##### 捆包方向



#### 7.3 Cover tape peel off condition

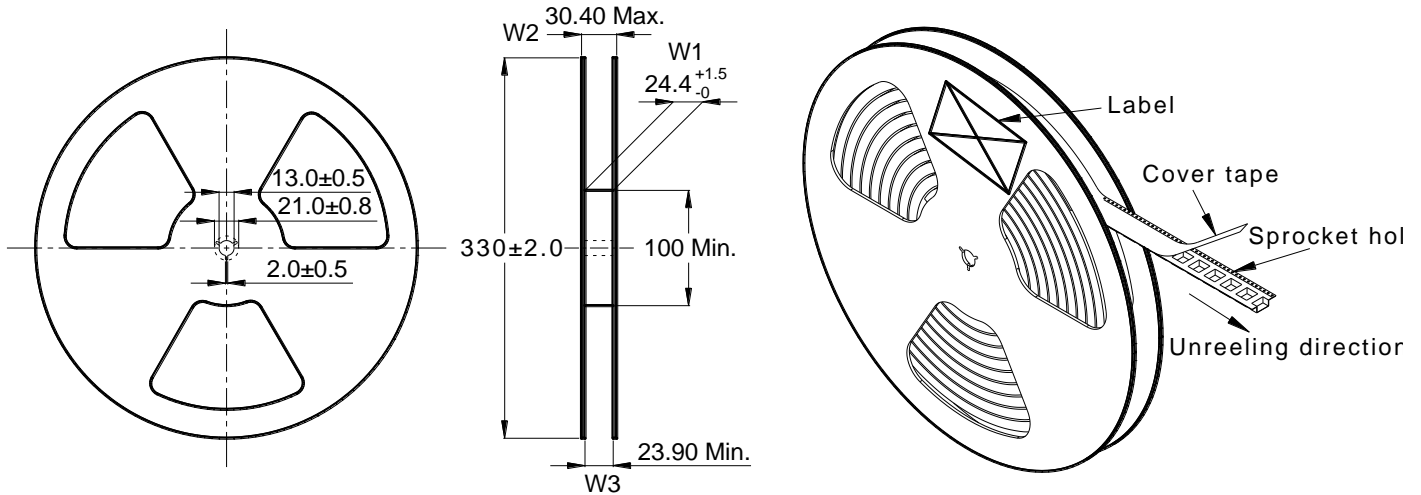
##### 盖带剥离条件

- Cover tape peel force shall be 0.1 to 1.3N.  
盖带剥离力度为 0.1~1.3N。
- Reference peel speed 300±10mm/min.  
参考剥离速度 300±10mm/分钟。



## 7.4 Reel dimensions (mm)

卷盘尺寸



## 7.5 Carton dimensions and packing quantity

包装箱尺寸和包装数量

■ Inner Carton: 365×345×105mm  
内包装盒

■ Out Carton : 385×365×245mm  
外包装箱

Product Series 产品系列	Quantity / Reel 数量 / 卷	Inner Carton Quantity 内盒 包装数量	Out Carton Quantity 外箱 包装总数量
SP105	1000pcs	(1000×3) = 3000pcs	(3000×2) = 6000pcs

## 7.6 Label making

标签标识

The following items will be marked on the reel of product label and shipping label.

以下项目将明确标识于产品卷盘标签以及运输标签上。

Production Label 产品标签
■ Part No. 产品型号
■ Electrical Information 产品电性信息
■ Quantity 数量
■ Packing No. 包装流水号

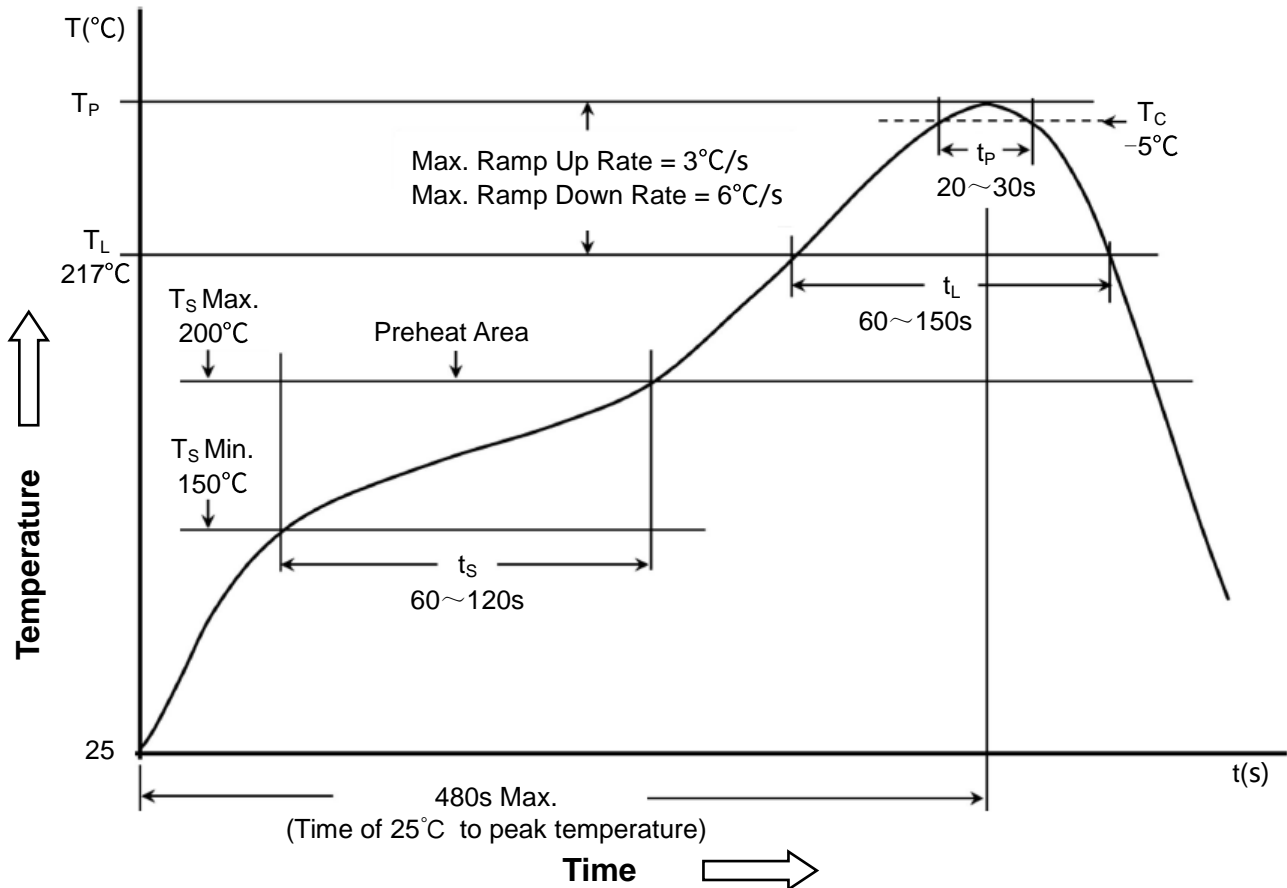
Shipping Label 运输标签
■ Customer Name 客户名称
■ Customer Part No. 客户型号
■ Supplier Part No. 供应商型号
■ Supplier Name 供应商名称
■ Country of origin 产品产地

## 8 Soldering specification

### 焊接规格

#### 8.1 Reflow profile for SMT components

SMT 回流焊温度曲线



#### 8.2 Classification of peak package body temperature (T<sub>P</sub>)

封装体峰值温度(T<sub>P</sub>)分类

	Package Thickness 封装厚度	Package Volume 封装体积		
		<350 mm <sup>3</sup>	350~2000 mm <sup>3</sup>	>2000 mm <sup>3</sup>
PB-Free Assembly 无铅装配	<1.6mm	260°C	260°C	260°C
	1.6~2.5mm	260°C	250°C	245°C
	≥2.5mm	250°C	245°C	245°C

※ Reflow is referred to standard IPC/JEDEC J-STD-020D.  
回流焊参照标准 IPC/JEDEC J-STD-020D.