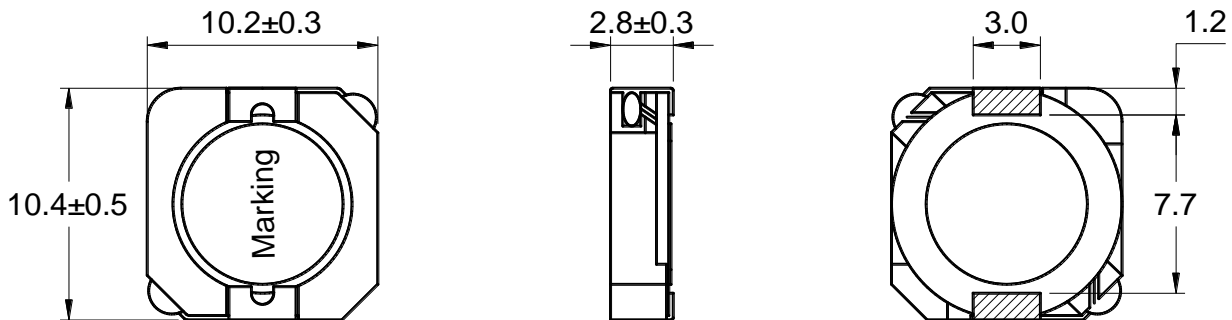


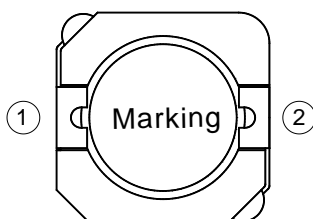
Outline: 产品概要

- Low DCR, high rated current.
低直流电阻, 耐大电流。
- Magnetic shielded structure
磁性屏蔽结构
- 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, laptop, displayer, network communication equipment, and etc.
广泛应用于升降压转换器, 笔记本电脑, 显示器, 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)

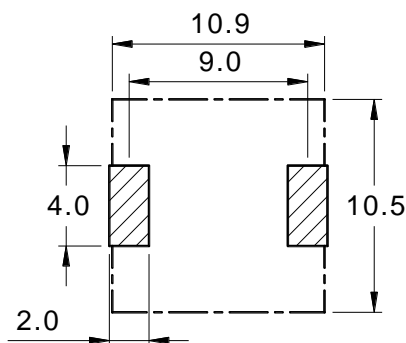
1 Appearance and dimensions (mm) 外形尺寸



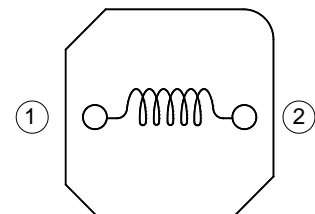
2 Marking 印字标识



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
SPQ103-1R2N	1.20 ± 30%	8.27	9.92	6.30	5.04	6.95
SPQ103-2R2N	2.20 ± 30%	10.3	12.4	5.50	4.40	6.23
SPQ103-3R3N	3.30 ± 30%	12.5	15.0	4.80	3.84	5.65
SPQ103-4R7N	4.70 ± 30%	20.5	24.6	3.60	2.88	4.41
SPQ103-6R8N	6.80 ± 30%	23.2	27.8	3.20	2.56	4.15
SPQ103-8R2N	8.20 ± 30%	30.0	36.0	2.80	2.24	3.65
SPQ103-100M	10.0 ± 20%	33.5	40.2	2.60	2.08	3.45
SPQ103-120M	12.0 ± 20%	44.5	53.4	2.35	1.88	3.00
SPQ103-150M	15.0 ± 20%	50.0	60.0	2.05	1.64	2.83
SPQ103-180M	18.0 ± 20%	65.0	78.0	1.95	1.56	2.48
SPQ103-220M	22.0 ± 20%	75.3	90.0	1.75	1.40	2.30
SPQ103-270M	27.0 ± 20%	85.0	102	1.65	1.32	2.17
SPQ103-330M	33.0 ± 20%	114	136	1.45	1.16	1.88
SPQ103-390M	39.0 ± 20%	126	151	1.30	1.04	1.78
SPQ103-470M	47.0 ± 20%	140	168	1.20	0.96	1.69
SPQ103-560M	56.0 ± 20%	174	209	1.10	0.88	1.52
SPQ103-680M	68.0 ± 20%	194	232	1.00	0.80	1.44
SPQ103-820M	82.0 ± 20%	235	282	0.90	0.72	1.30
SPQ103-101M	100 ± 20%	283	340	0.82	0.66	1.19
SPQ103-121M	120 ± 20%	337	404	0.75	0.60	1.09
SPQ103-151M	150 ± 20%	405	486	0.67	0.54	0.99
SPQ103-181M	180 ± 20%	507	608	0.63	0.50	0.89
SPQ103-221M	220 ± 20%	580	696	0.55	0.44	0.83
SPQ103-271M	270 ± 20%	772	926	0.50	0.40	0.72
SPQ103-331M	330 ± 20%	863	1,036	0.46	0.37	0.68
SPQ103-391M	390 ± 20%	1,053	1,264	0.43	0.34	0.62
SPQ103-471M	470 ± 20%	1,335	1,602	0.39	0.31	0.55
SPQ103-561M	560 ± 20%	1,472	1,766	0.35	0.28	0.52
SPQ103-681M	680 ± 20%	2,070	2,484	0.32	0.26	0.44
SPQ103-821M	820 ± 20%	2,330	2,796	0.28	0.22	0.41
SPQ103-102M	1,000 ± 20%	2,786	3,343	0.25	0.20	0.38

■ 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 100kHz, 0.1V.

电感测试条件为 100kHz, 0.1V。

※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)。

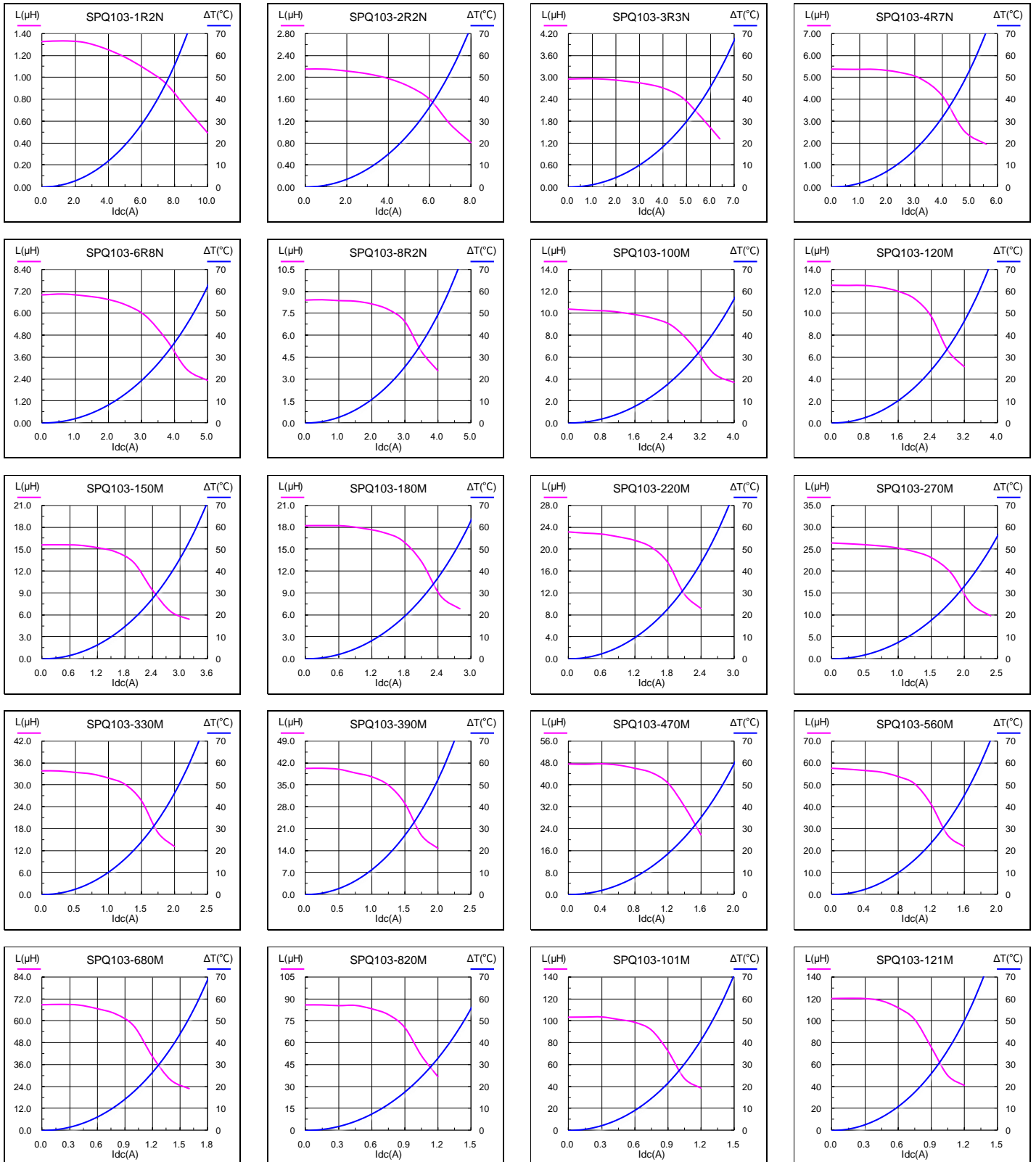
※ Special remind: Circuit design, component placement, PWB size and thickness, cooling system and etc.

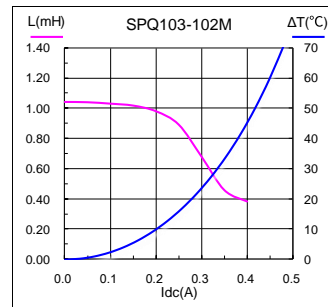
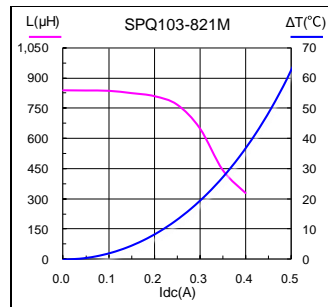
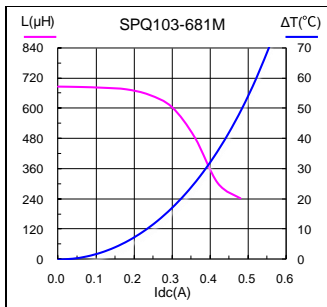
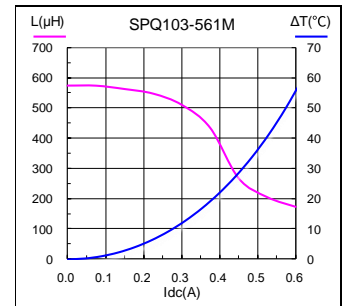
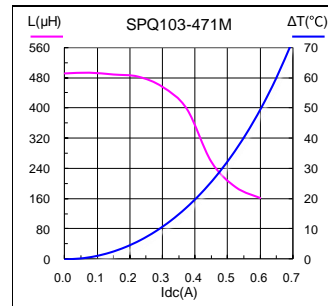
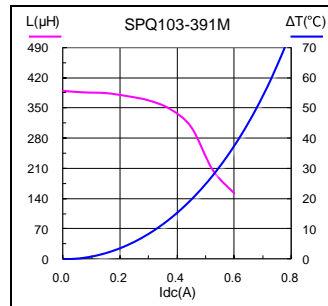
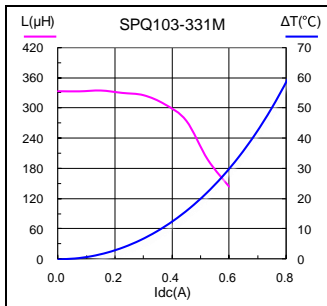
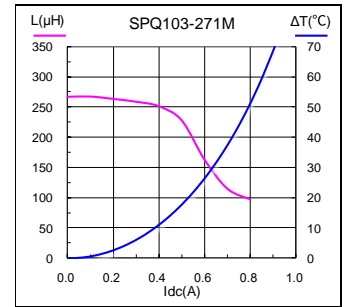
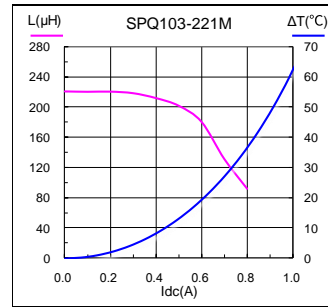
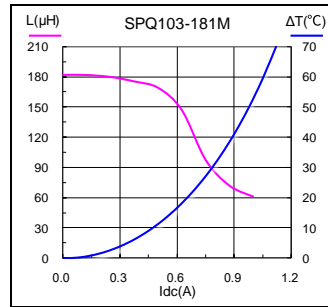
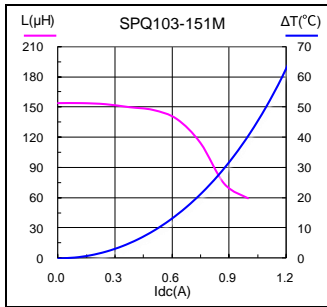
all will affect the product temperature. Please verify the product temperature in the final application.

特别提醒: 线路设计, 组件布局, 印刷线路板(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



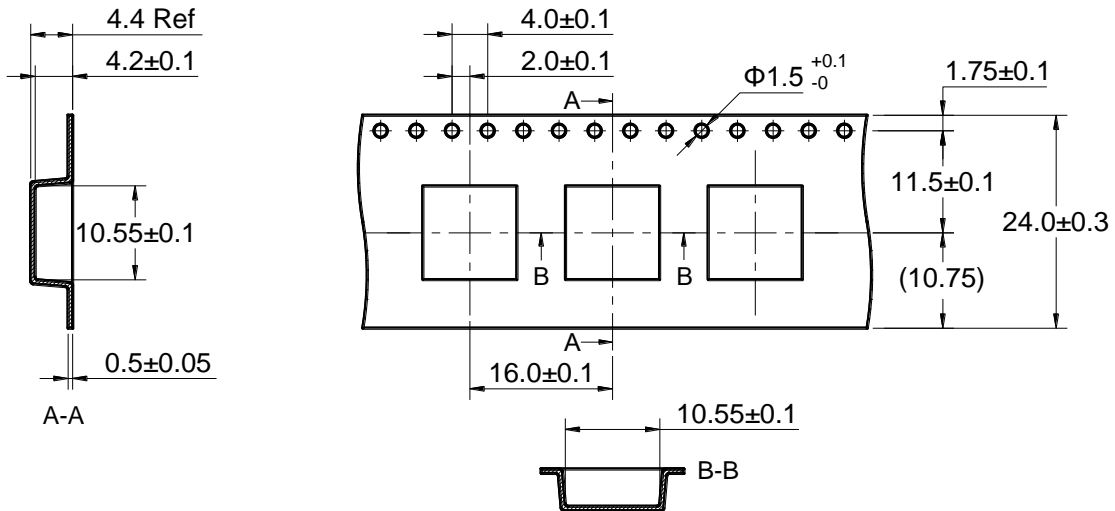


7 Packing specification

包装规格

7.1 Carrier tape dimensions (mm)

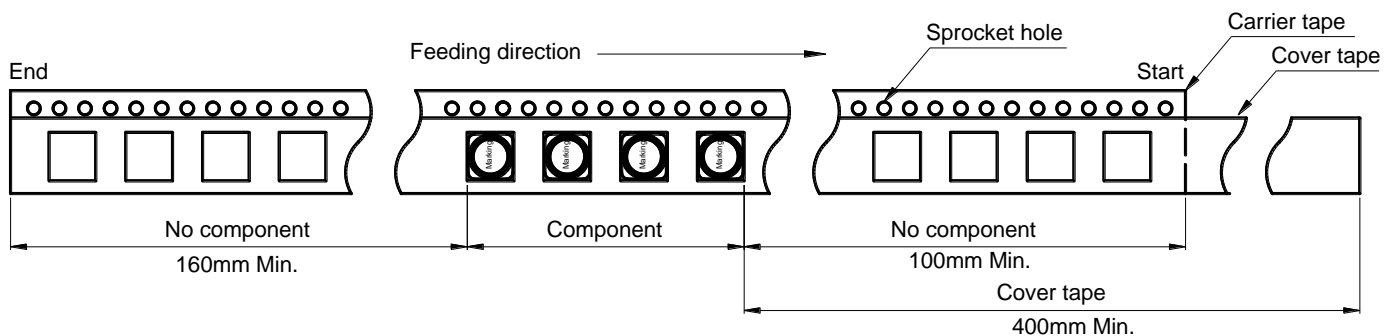
载带尺寸



※ 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

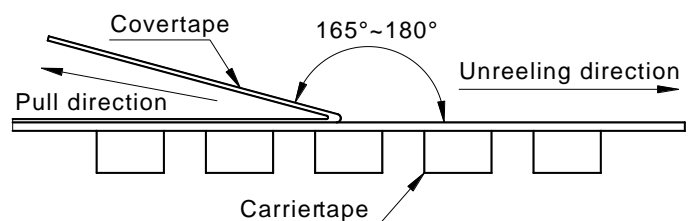
捆包方向



7.3 Cover tape peel off condition

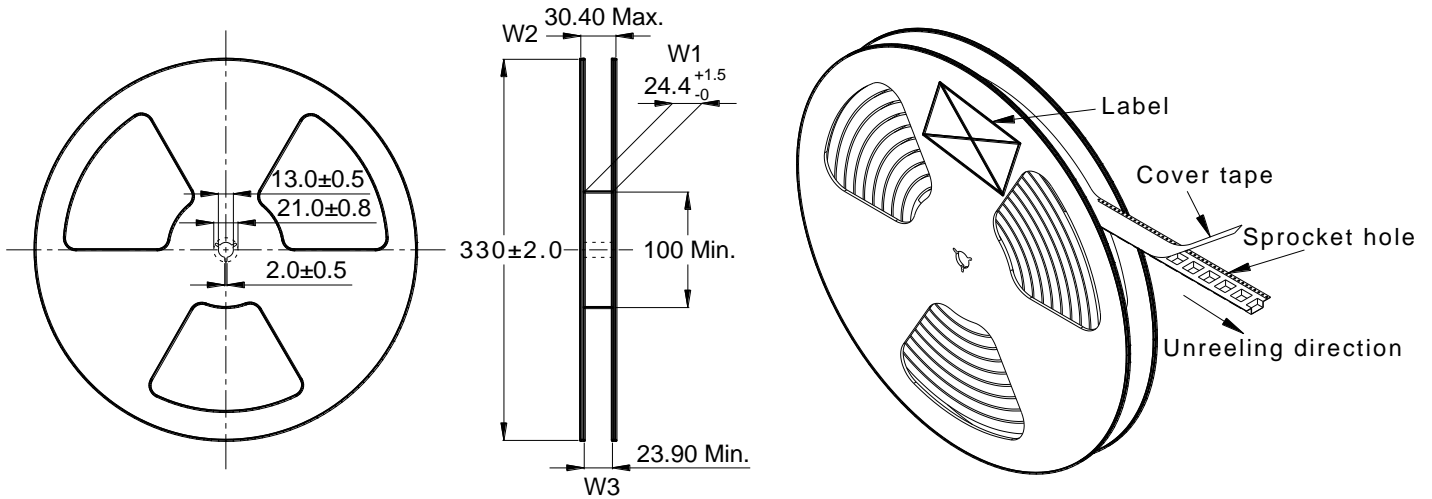
盖带剥离条件

- 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
SPQ103	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

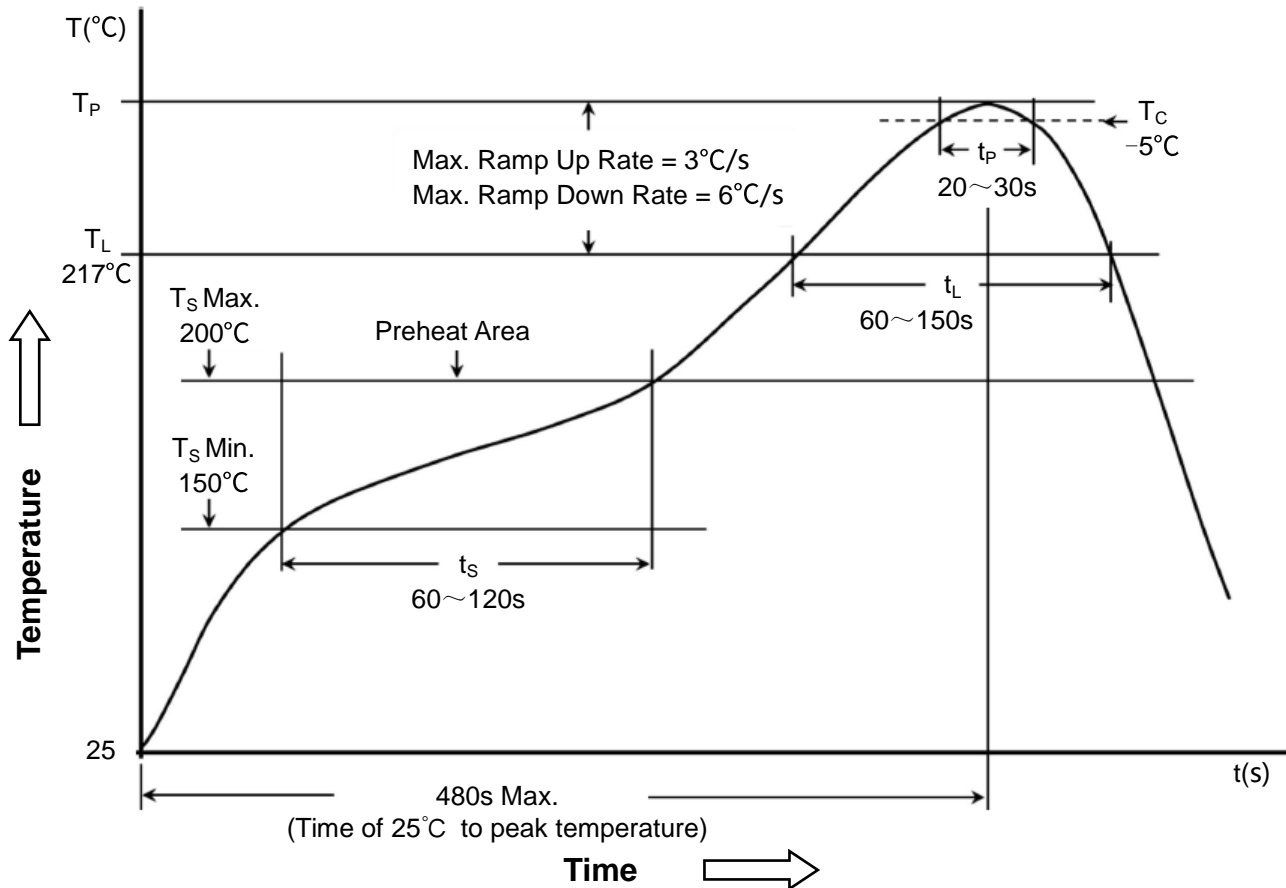
Shipping Label 运输标签
■ Customer Name 客户名称
■ Customer Part No. 客户型号
■ Supplier Part No. 供应商型号
■ Supplier Name 供应商名称
■ Country of origin 产品产地

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_P)

封装体峰值温度(T_P)分类

	Package Thickness 封装厚度	Package Volume 封装体积		
		<350 mm ³	350~2000 mm ³	>2000 mm ³
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.