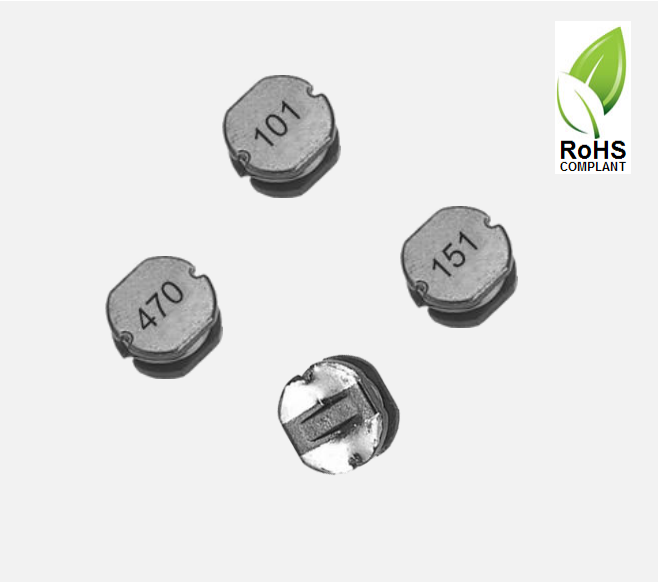
CODACA科达嘉

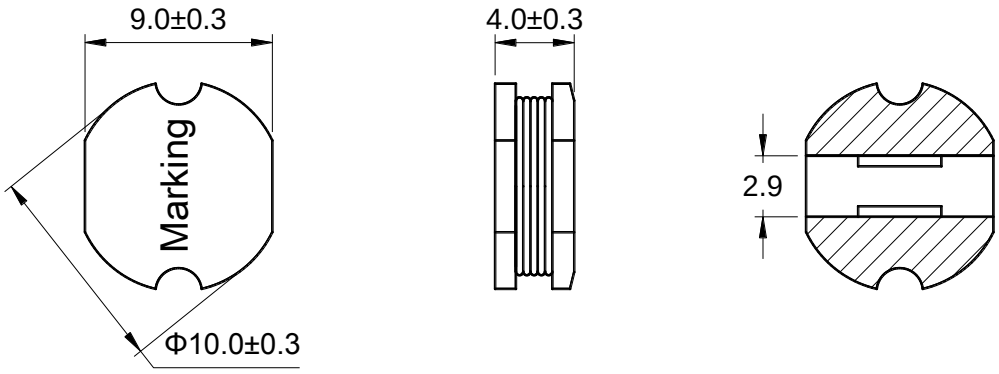
SMD Power Inductor
- SP104 Series



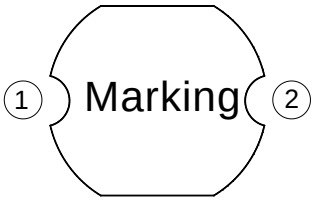
Outline:
产品概要

- 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化器，显示器，笔记本电脑，网络通信设备等。
- Operating temperature : -40℃ ～ +125℃ (Including coil's temperature rise)
  工作温度：-40℃ ～ +125℃ (包含线圈发热)

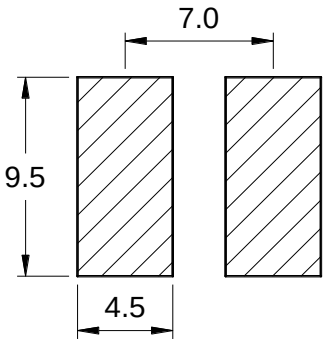
1 Appearance and dimensions (mm)
外形尺寸



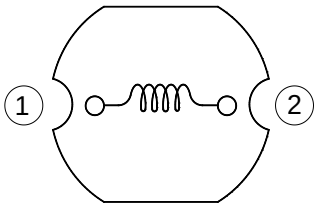
2 Marking
印字标识



3 Reference land pattern (mm)
参考基板尺寸



4 Schematic
原理图



深圳市科达嘉电子有限公司
SHENZHEN CODACA ELECTRONIC CO., LTD

Tel: +86 755 89585372 Fax: +86 755 89585280
E-mail: codaca@codaca.com.cn
http://www.codaca.com http://www.codaca.com.cn

5 Electrical characteristics
电气特性

Part No. 型　号	Inductance (μH) 电感值 ※1 ±10%	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
SP104-100K	10.0	28.2	33.8	5.20	4.16	4.24
SP104-120K	12.0	36.4	43.7	4.80	3.84	3.69
SP104-150K	15.0	44.7	53.6	4.20	3.36	3.33
SP104-180K	18.0	52.2	62.6	3.70	2.96	3.04
SP104-220K	22.0	61.3	73.5	3.40	2.72	2.84
SP104-270K	27.0	74.9	89.9	3.08	2.46	2.57
SP104-330K	33.0	91.5	110	2.70	2.16	2.33
SP104-390K	39.0	100	120	2.58	2.06	2.22
SP104-470K	47.0	123	147	2.42	1.94	2.01
SP104-560K	56.0	142	170	2.15	1.72	1.87
SP104-680K	68.0	174	209	1.98	1.58	1.69
SP104-820K	82.0	227	272	1.72	1.38	1.48
SP104-101K	100	263	316	1.60	1.28	1.37
SP104-121K	120	326	391	1.48	1.18	1.30
SP104-151K	150	443	532	1.27	1.02	1.06
SP104-181K	180	499	599	1.17	0.94	1.00
SP104-221K	220	580	696	1.10	0.88	0.92
SP104-271K	270	693	832	1.00	0.80	0.85
SP104-331K	330	848	1,017	0.88	0.70	0.76
SP104-391K	390	1,049	1,259	0.79	0.63	0.69
SP104-471K	470	1,230	1,476	0.72	0.58	0.63
SP104-561K	560	1,416	1,699	0.67	0.54	0.59
SP104-681K	680	1,710	2,052	0.62	0.50	0.54
SP104-821K	820	2,046	2,455	0.56	0.45	0.50
SP104-102K	1,000	2,525	3,030	0.51	0.41	0.45

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

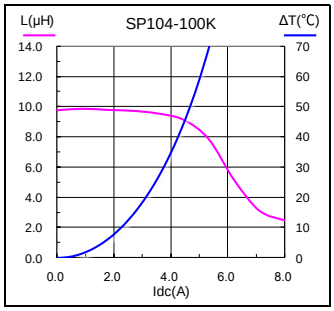
※1 Inductance measure condition at 1kHz, 0.25V.
电感测试条件为 1kHz, 0.25V。

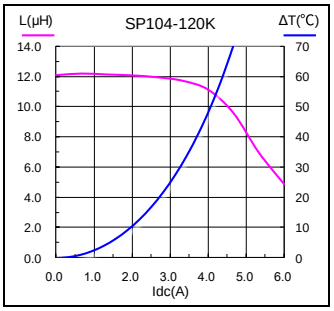
※2 Saturation current：the actual value of DC current when the inductance decrease 20% of its initial value.
饱和电流：电感值下降其初始值的 20%时所加载的实际直流电流值。

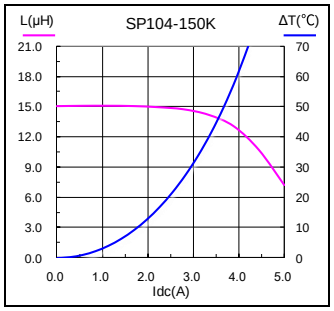
※3 Temperature rise current：the actual value of DC current when the temperature rise is ΔT40℃(Ta=25℃).
温升电流：使产品温度上升到 ΔT40℃时所加载的实际直流电流值(Ta=25℃)。

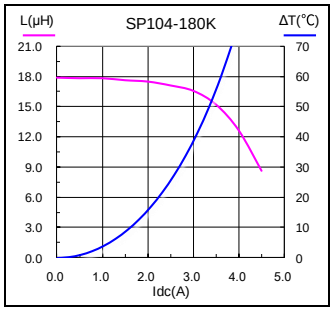
※ Special remind：Circuit design, component placement, PWB size and thickness, cooling system and etc. all will affect the product temperature. Please verify the product temperature in the final application.
特别提醒：线路设计，组件布局，印刷线路板(PWB)尺寸及厚度，散热系统等均会影响产品温度。
请务必在最终应用时，验证产品发热状况。

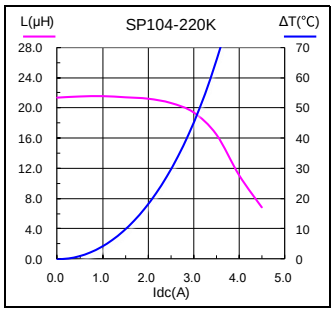
6 Saturation current VS temperature rise current curve
饱和电流 VS 温升电流曲线

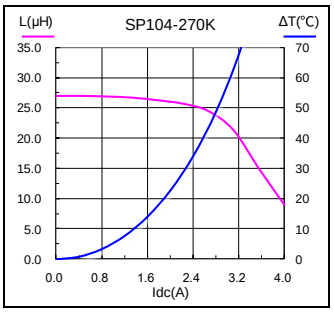


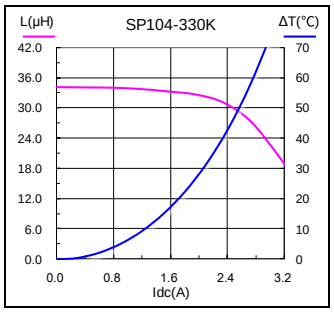


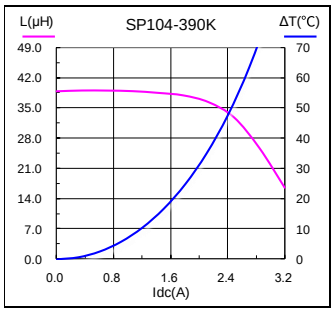


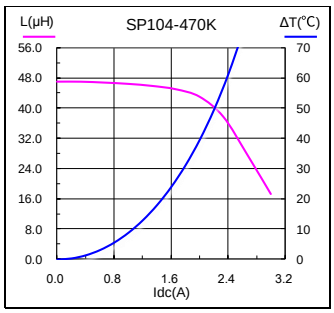


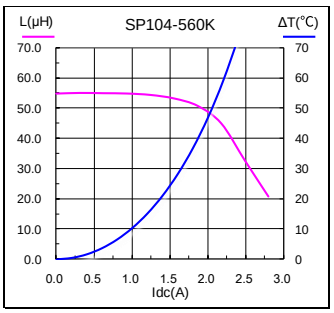


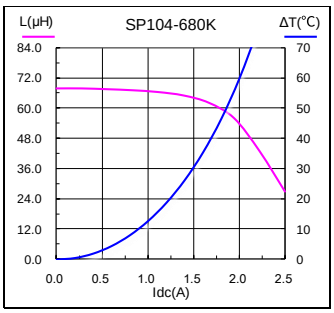


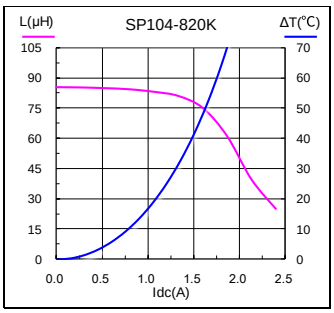


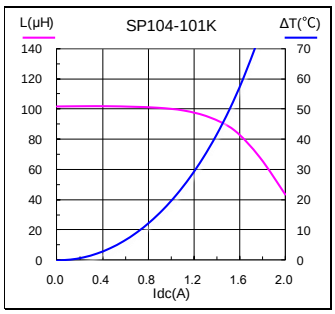


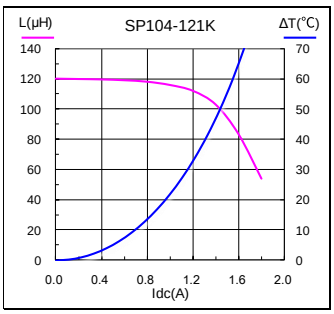


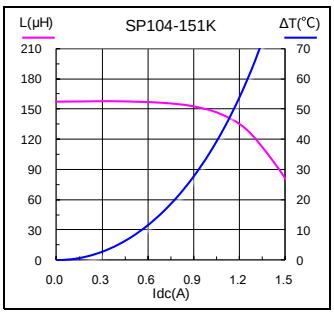


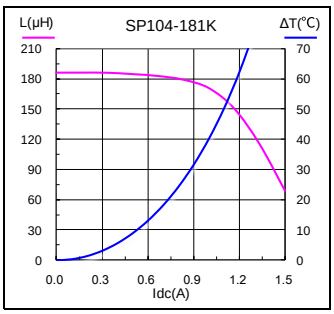


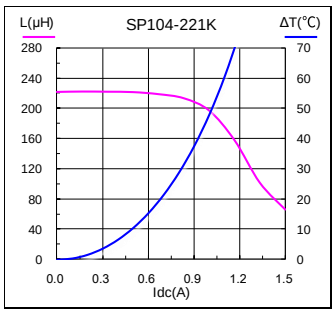


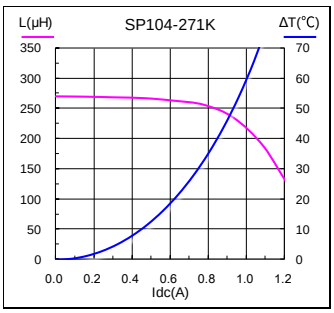


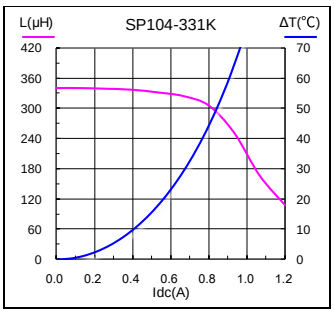


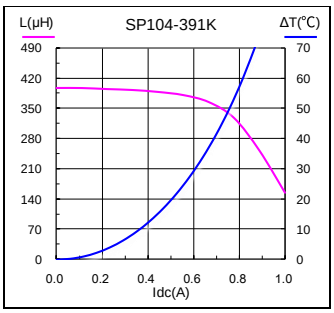


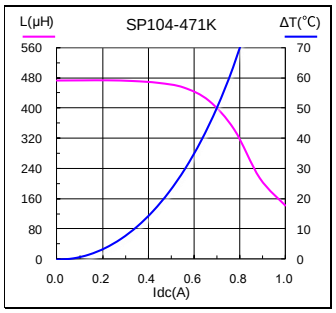


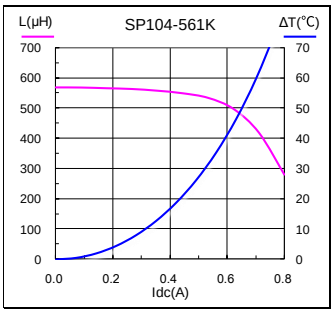


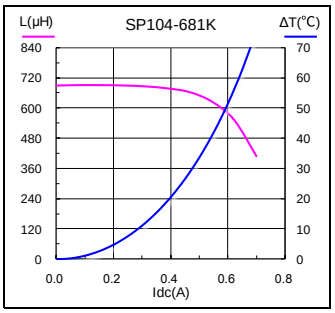


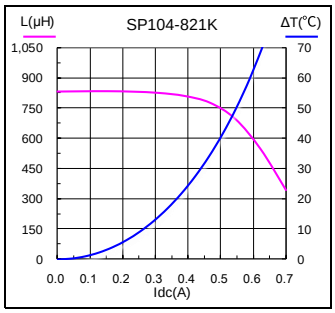


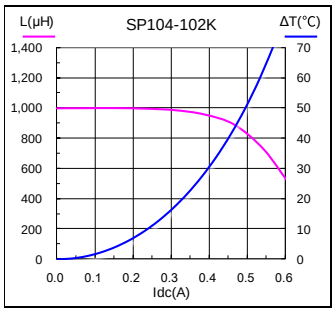



L(μH)
SP104-471K
ΔT(℃)
560
480
400
320
240
160
80
0
70
60
50
40
30
20
10
0
0.0 0.2 0.4 0.6 0.8 1.0
Idc(A)


L(μH)
SP104-561K
ΔT(℃)
700
600
500
400
300
200
100
0
70
60
50
40
30
20
10
0
0.0 0.2 0.4 0.6 0.8
Idc(A)

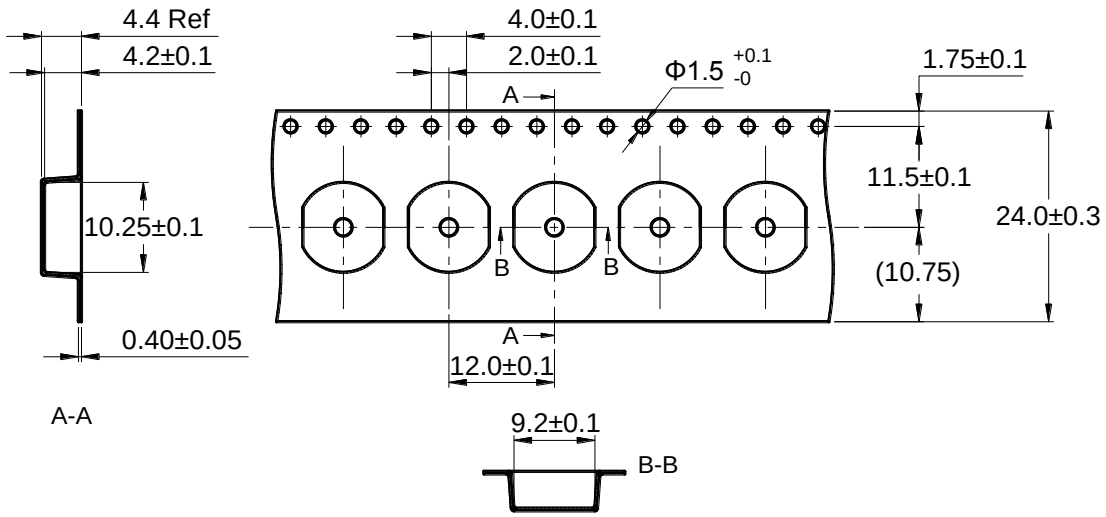

L(μH)
SP104-681K
ΔT(℃)
840
720
600
480
360
240
120
0
70
60
50
40
30
20
10
0
0.0 0.2 0.4 0.6 0.8
Idc(A)


L(μH)
SP104-821K
ΔT(℃)
1,050
900
750
600
450
300
150
0
70
60
50
40
30
20
10
0
0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7
Idc(A)


L(μH)
SP104-102K
ΔT(℃)
1,400
1,200
1,000
800
600
400
200
0
70
60
50
40
30
20
10
0
0.0 0.1 0.2 0.3 0.4 0.5 0.6
Idc(A)

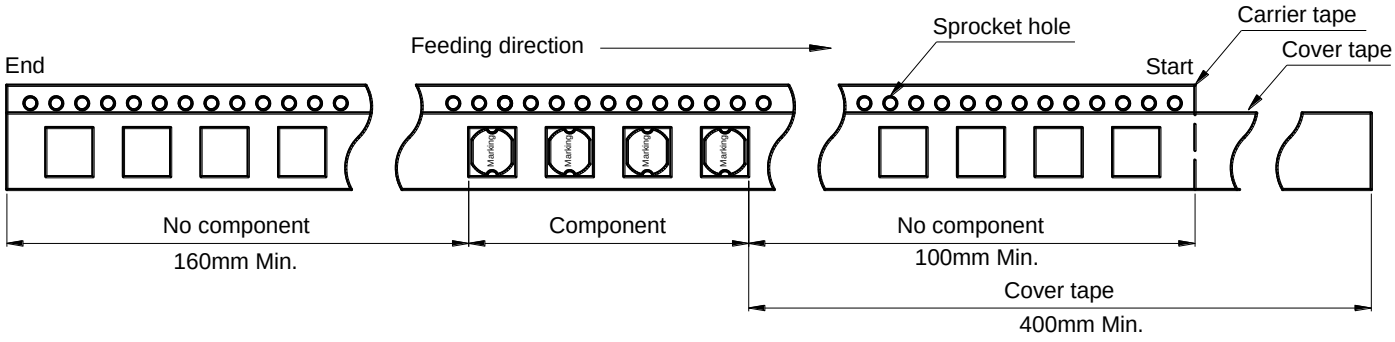
7 Packing specification
包装规格

7.1 Carrier tape dimensions (mm)
载带尺寸



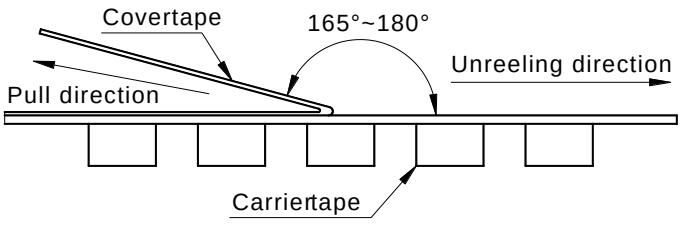
※ Packing is referred to the international standard IEC 60286-3.
包装参照国际标准 IEC 60286-3。

7.2 Tape direction
捆包方向

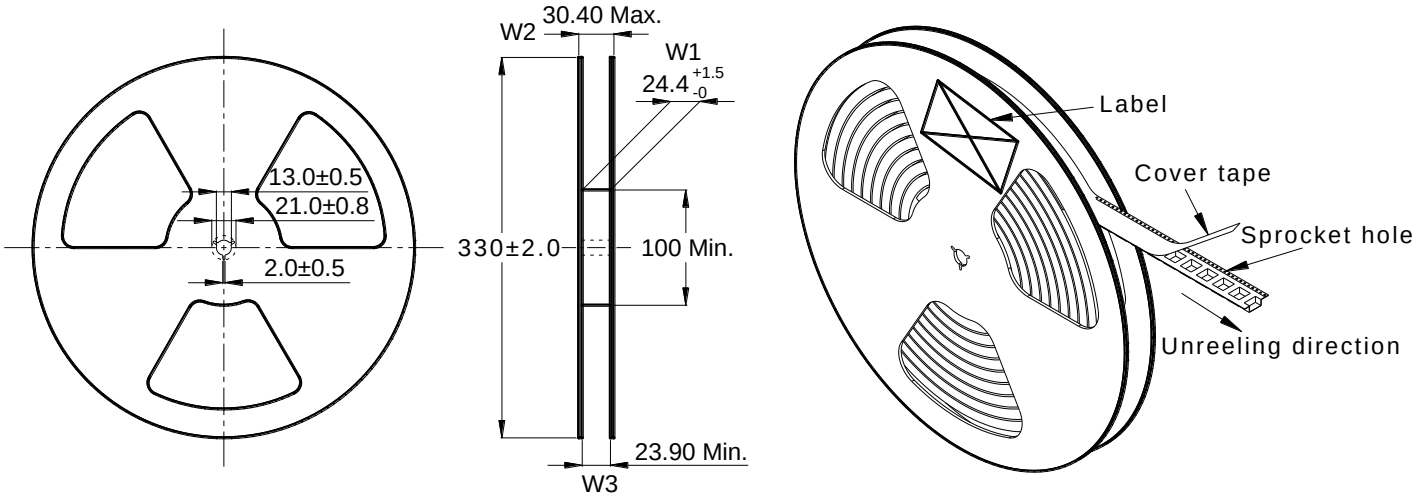


7.3 Cover tape peel off condition
盖带剥离条件

- 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
SP104	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

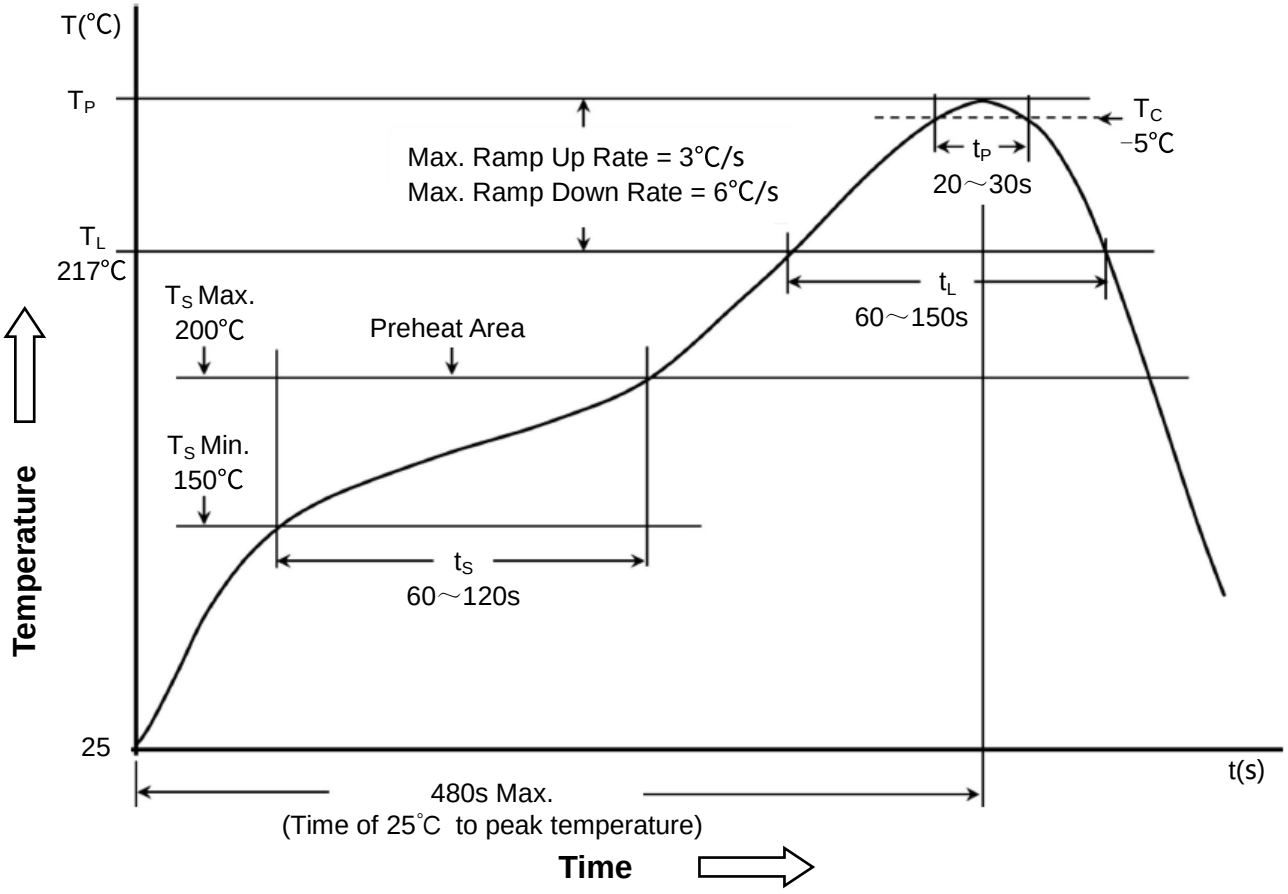
■ Part No.
产品型号
■ Electrical Information
产品电性信息
■ Quantity
数 量
■ Packing No.
包装流水号

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。