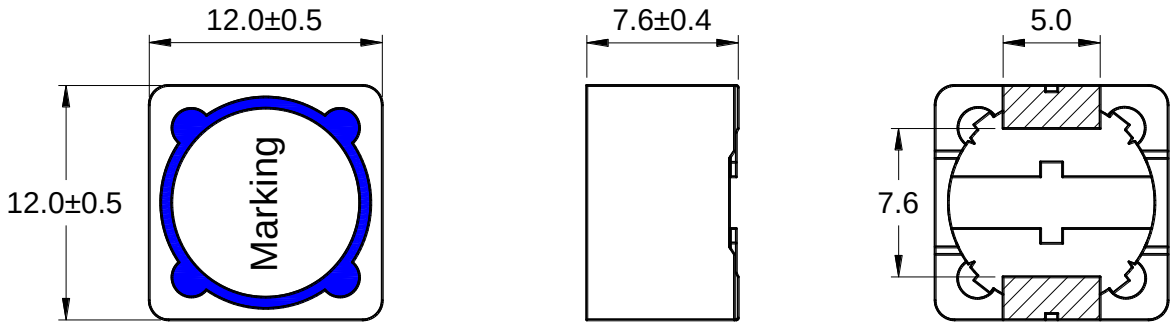
CODACA科达嘉

SMD Power Inductor
- SPRH127 Series

Outline:
产品概要

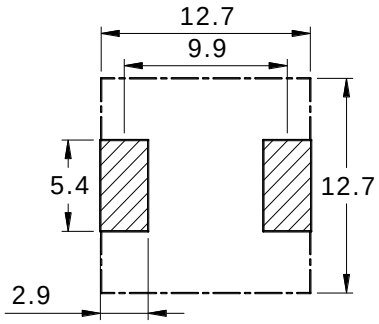
- Low DCR, high rated current.
  低直流电阻，耐大电流。
- Magnetic shielded structure
  磁性屏蔽结构
- Lead free product, RoHS compliant.
  无铅产品，符合 RoHS 指令。
- Carrier tape packing, suitable for SMT process.
  载带包装，适用于回流焊 SMT 工艺。
- Widely used in buck converter, laptop, displayer, network communication equipment, and etc.
  广泛应用于升降压转化器，笔记本电脑，显示器，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

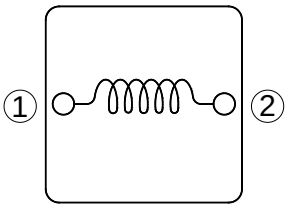


2 Marking
印字标识

3 Reference land pattern (mm)
参考基板尺寸



4 Schematic
原理图



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
SPRH127-6R8N	6.80	±30%	20.3	24.4	12.0	9.60	5.23
SPRH127-8R2N	8.20	±30%	22.2	26.6	10.9	8.72	5.08
SPRH127-100M	10.0	±20%	24.1	28.9	10.2	8.16	4.95
SPRH127-120M	12.0	±20%	28.6	34.3	9.00	7.20	4.61
SPRH127-150M	15.0	±20%	31.0	37.2	8.40	6.72	4.49
SPRH127-180M	18.0	±20%	32.9	39.5	7.80	6.24	4.42
SPRH127-220M	22.0	±20%	38.0	45.6	7.00	5.60	4.17
SPRH127-270M	27.0	±20%	43.0	51.6	6.20	4.96	3.97
SPRH127-330M	33.0	±20%	48.5	58.2	5.50	4.40	3.74
SPRH127-390M	39.0	±20%	60.8	73.0	5.20	4.16	3.34
SPRH127-470M	47.0	±20%	70.0	84.0	4.60	3.68	3.11
SPRH127-560M	56.0	±20%	75.4	90.5	4.30	3.44	3.00
SPRH127-680M	68.0	±20%	94.8	114	3.90	3.12	2.67
SPRH127-820M	82.0	±20%	105	126	3.60	2.88	2.54
SPRH127-101M	100	±20%	137	164	3.20	2.56	2.22
SPRH127-121M	120	±20%	176	211	2.90	2.32	1.96
SPRH127-151M	150	±20%	202	242	2.60	2.08	1.83
SPRH127-181M	180	±20%	258	310	2.40	1.92	1.62
SPRH127-221M	220	±20%	288	346	2.20	1.76	1.53
SPRH127-271M	270	±20%	370	444	2.00	1.60	1.35
SPRH127-331M	330	±20%	410	492	1.80	1.44	1.29
SPRH127-391M	390	±20%	508	610	1.65	1.32	1.15
SPRH127-471M	470	±20%	630	756	1.45	1.16	1.04
SPRH127-561M	560	±20%	760	912	1.35	1.08	0.94
SPRH127-681M	680	±20%	954	1,145	1.20	0.96	0.84
SPRH127-821M	820	±20%	1,065	1,278	1.10	0.88	0.80
SPRH127-102M	1,000	±20%	1,315	1,578	1.00	0.80	0.71

■ 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。

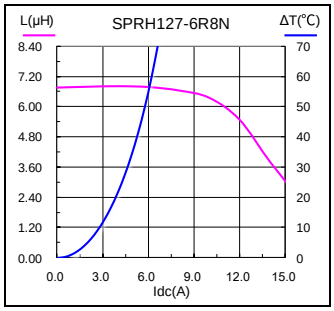
※1 Inductance measure condition at 100kHz, 0.1V.
电感测试条件为 100kHz, 0.1V。

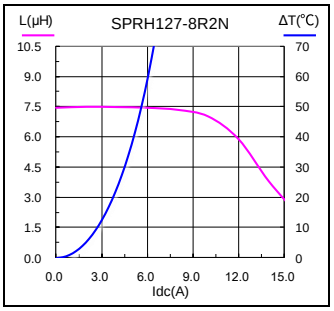
※2 Saturation current：the actual value of DC current when the inductance decrease 20% of its initial value.
饱和电流：电感值下降其初始值的 20%时所加载的实际直流电流值。

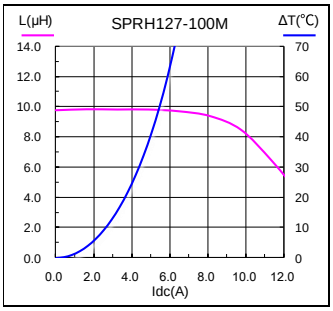
※3 Temperature rise current：the actual value of DC current when the temperature rise is ΔT40℃(Ta=25℃).
温升电流：使产品温度上升到 ΔT40℃时所加载的实际直流电流值(Ta=25℃)。

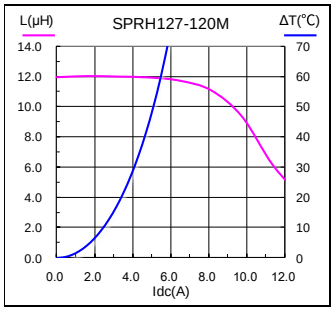
※ Special remind：Circuit design, component placement, PWB size and thickness, cooling system and etc. all will affect the product temperature. Please verify the product temperature in the final application.
特别提醒：线路设计，组件布局，印刷线路板(PWB)尺寸及厚度，散热系统等均会影响产品温度。
请务必在最终应用时，验证产品发热状况。

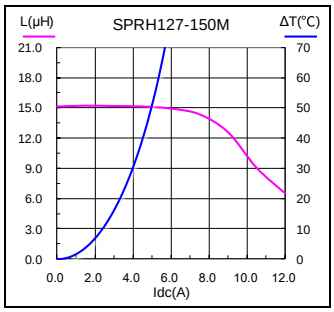
6 Saturation current VS temperature rise current curve
饱和电流 VS 温升电流曲线

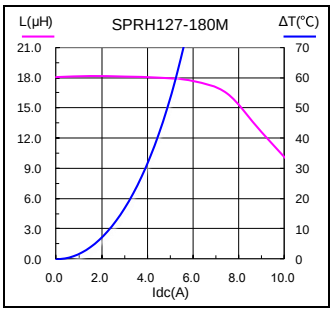


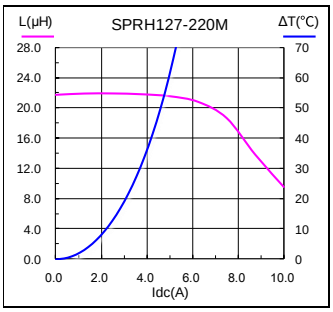


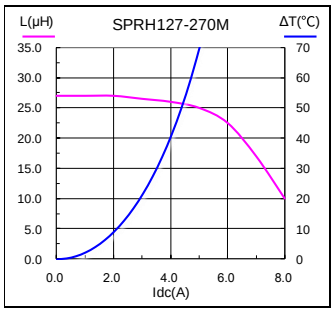


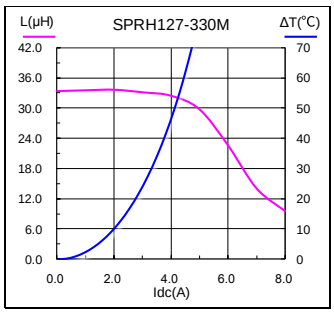


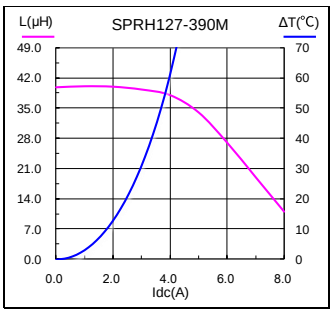


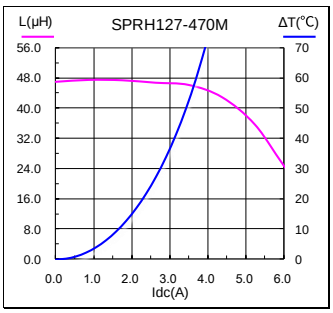


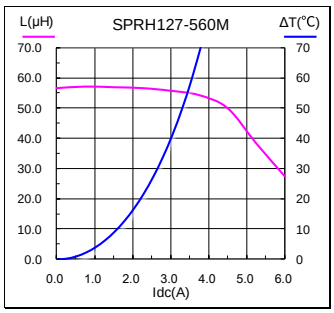


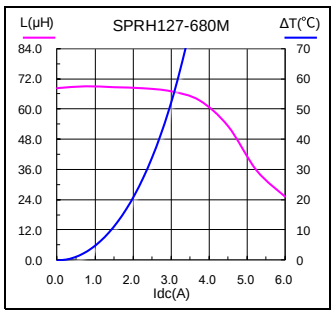


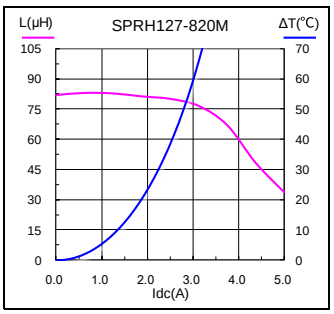


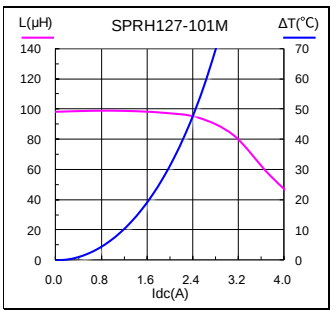


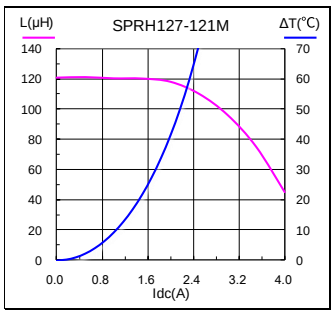


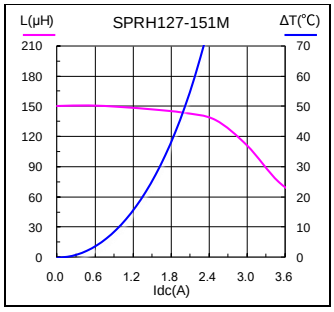


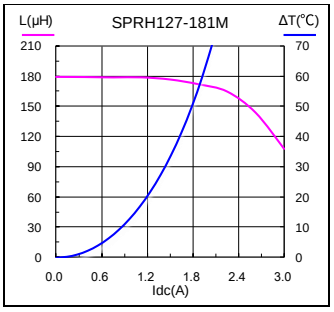


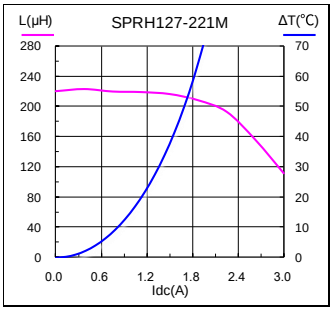


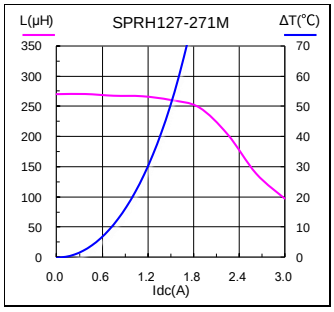


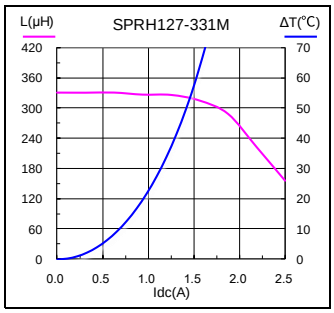


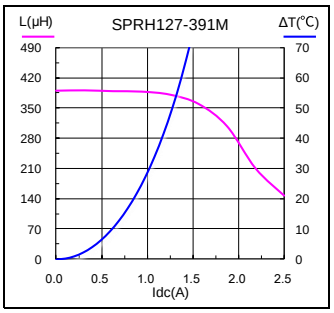


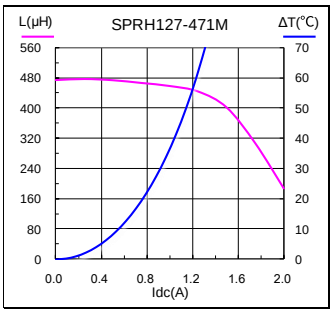


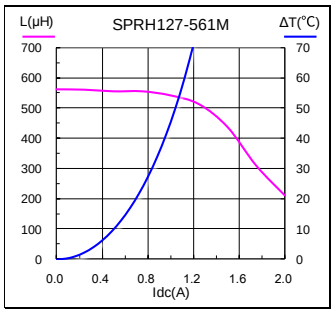


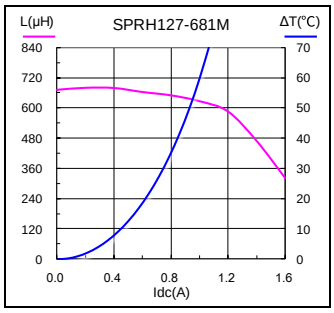


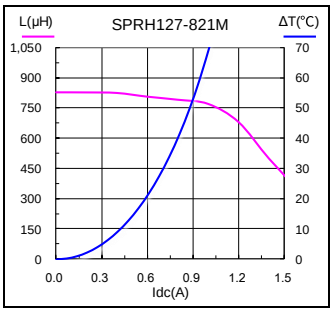

L(μH)
SPRH127-331M
ΔT(℃)
420 360 300 240 180 120 60 0
70 60 50 40 30 20 10 0
0.0 0.5 1.0 1.5 2.0 2.5
Idc(A)

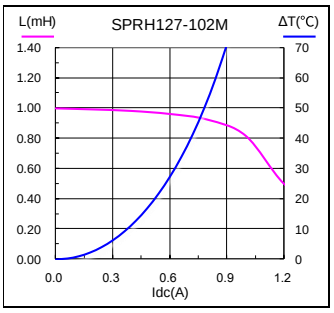

L(μH)
SPRH127-391M
ΔT(℃)
490 420 350 280 210 140 70 0
70 60 50 40 30 20 10 0
0.0 0.5 1.0 1.5 2.0 2.5
Idc(A)


L(μH)
SPRH127-471M
ΔT(℃)
560 480 400 320 240 160 80 0
70 60 50 40 30 20 10 0
0.0 0.4 0.8 1.2 1.6 2.0
Idc(A)


L(μH)
SPRH127-561M
ΔT(℃)
700 600 500 400 300 200 100 0
70 60 50 40 30 20 10 0
0.0 0.4 0.8 1.2 1.6 2.0
Idc(A)

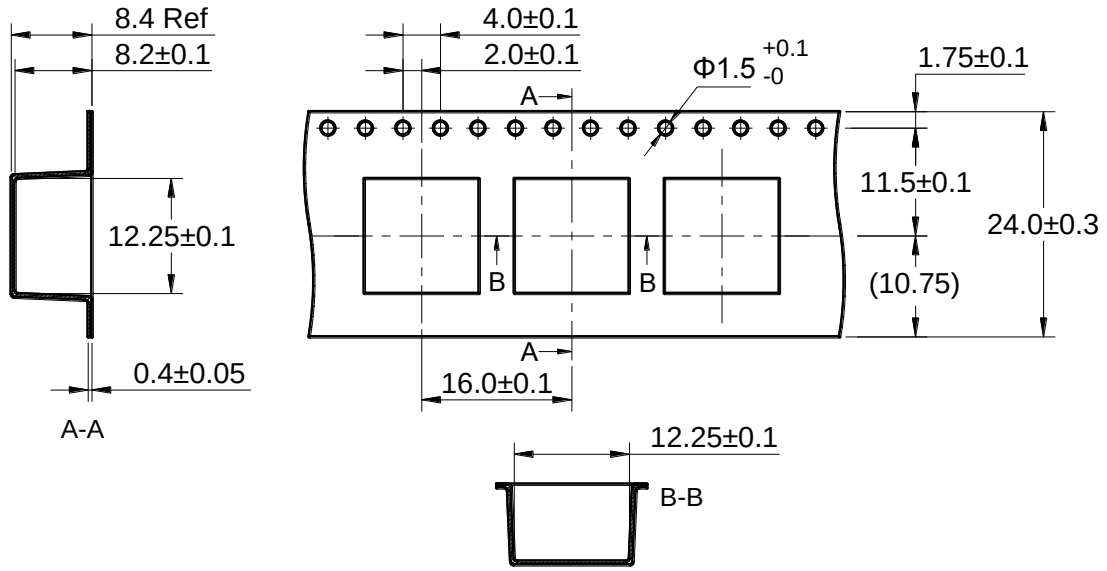

L(μH)
SPRH127-681M
ΔT(℃)
840 720 600 480 360 240 120 0
70 60 50 40 30 20 10 0
0.0 0.4 0.8 1.2 1.6
Idc(A)


L(μH)
SPRH127-821M
ΔT(℃)
1,050 900 750 600 450 300 150 0
70 60 50 40 30 20 10 0
0.0 0.3 0.6 0.9 1.2 1.5
Idc(A)


L(mH)
SPRH127-102M
ΔT(℃)
1.40 1.20 1.00 0.80 0.60 0.40 0.20 0.00
70 60 50 40 30 20 10 0
0.0 0.3 0.6 0.9 1.2
Idc(A)

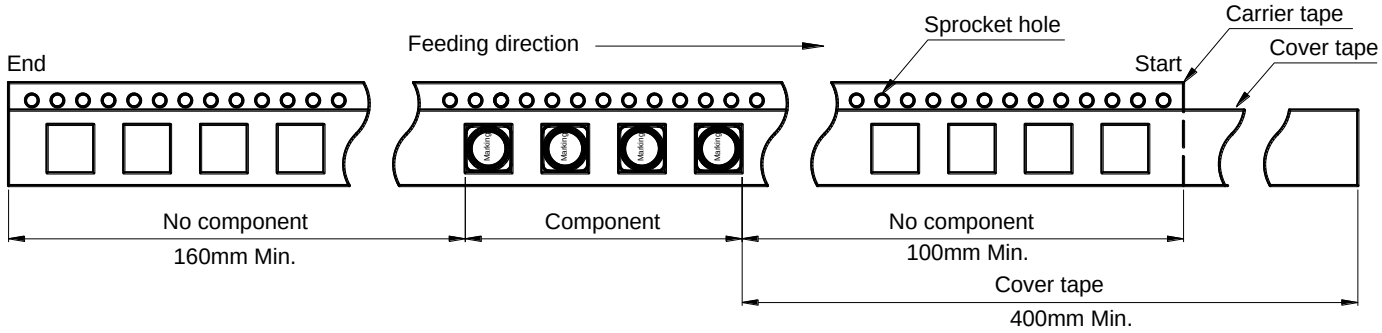
7 Packing specification
包装规格

7.1 Carrier tape dimensions (mm)
载带尺寸



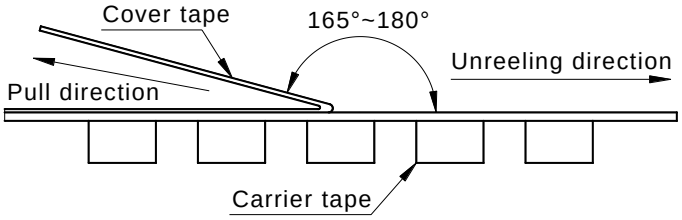
※ Packing is referred to the international standard IEC 60286-3.
包装参照国际标准 IEC 60286-3。

7.2 Tape direction
捆包方向

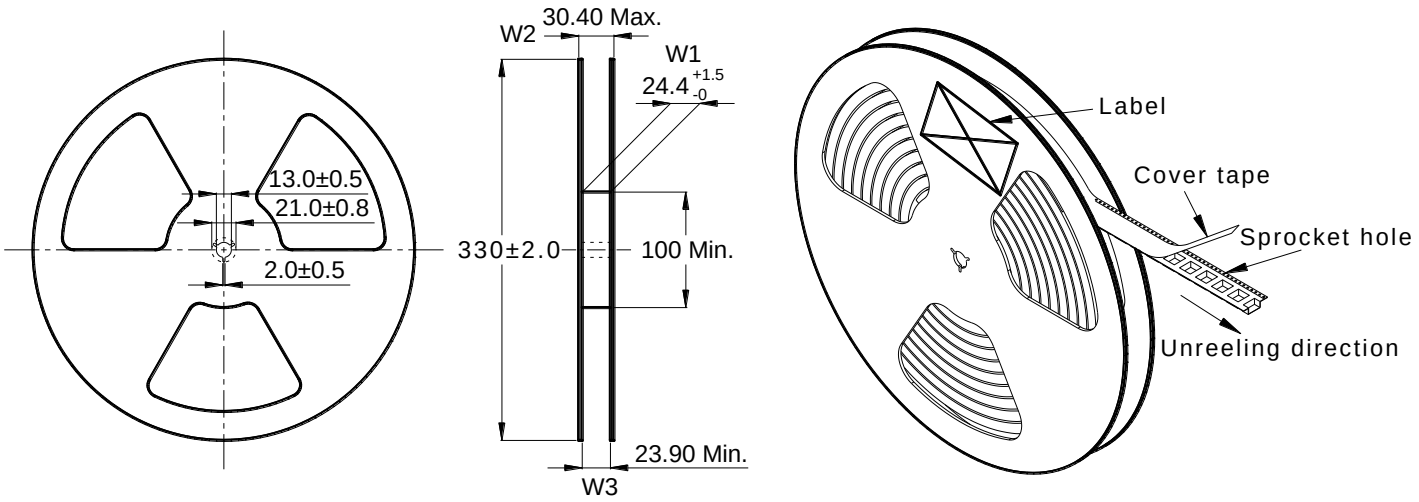


7.3 Cover tape peel off condition
盖带剥离条件

- 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
SPRH127	500pcs	(500×3) = 1500pcs	(1500×2) = 3000pcs

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

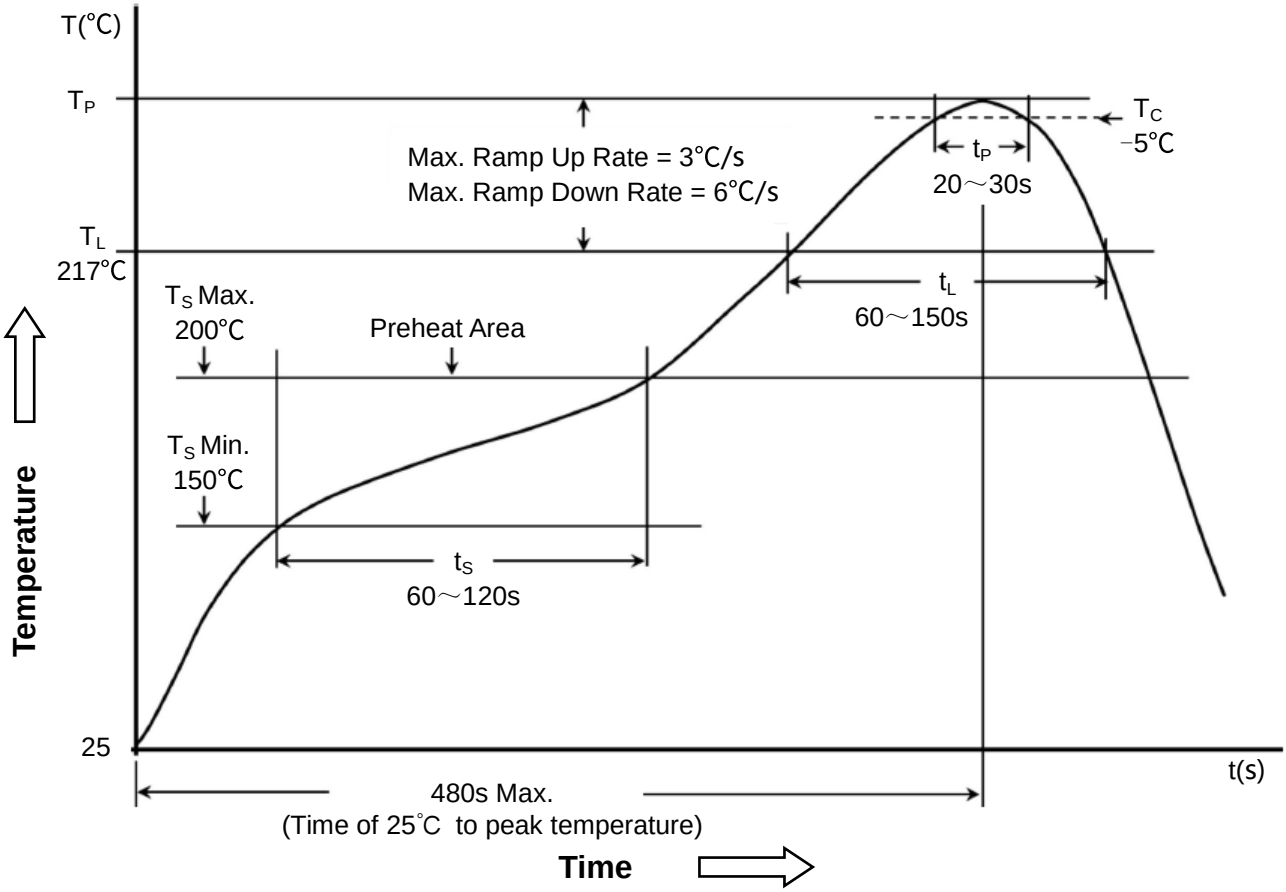
■ Part No.
产品型号
■ Electrical Information
产品电性信息
■ Quantity
数　量
■ Packing No.
包装流水号

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。