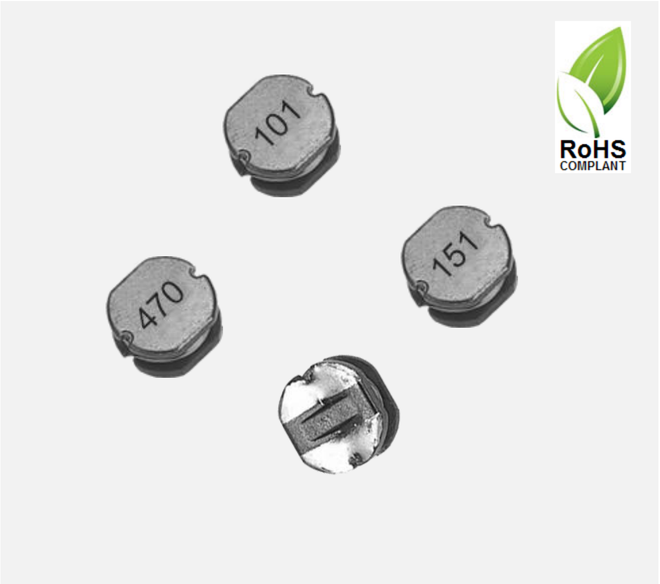
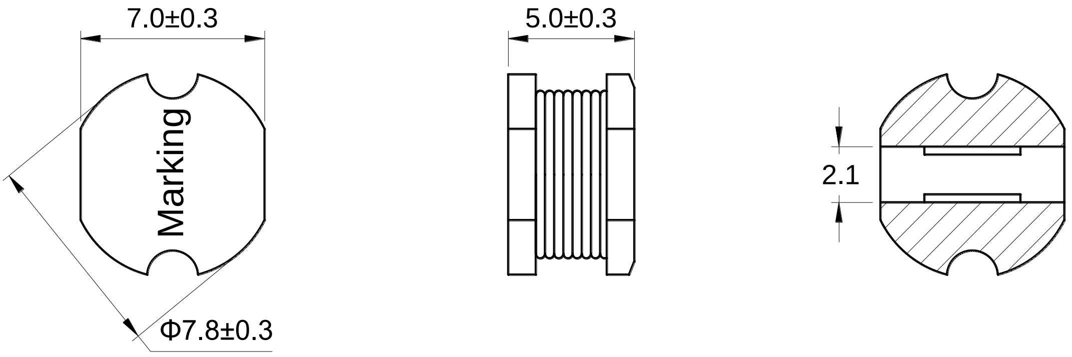
SMD Power Inductor
- SP75 Series



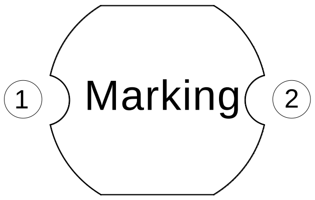
Outline:
产品概要

- 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)

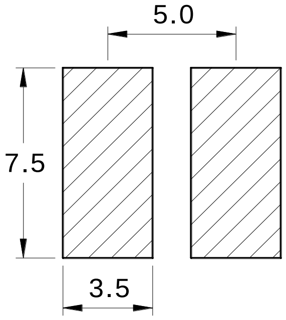
1 Appearance and dimensions (mm)
外形尺寸



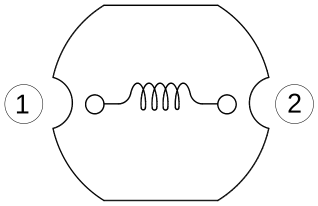
2 Marking
印字标识



3 Reference land pattern (mm)
参考基板尺寸



4 Schematic
原理图



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
SP75-1R0M	1.00 ±20%	5.50	6.60	12.3	9.84	8.81
SP75-2R2M	2.20 ±20%	9.40	11.3	7.80	6.24	6.60
SP75-3R3M	3.30 ±20%	10.9	13.1	6.90	5.52	6.10
SP75-4R7M	4.70 ±20%	16.0	19.2	5.50	4.40	5.22
SP75-6R8M	6.80 ±20%	22.1	26.5	4.50	3.60	4.44
SP75-8R2M	8.20 ±20%	24.0	28.8	4.30	3.44	4.26
SP75-100K	10.0 ±10%	31.3	37.6	3.70	2.96	3.73
SP75-120K	12.0 ±10%	37.2	44.6	3.45	2.76	3.43
SP75-150K	15.0 ±10%	41.9	50.3	3.18	2.54	3.23
SP75-180K	18.0 ±10%	52.0	62.4	2.90	2.32	2.82
SP75-220K	22.0 ±10%	63.4	76.1	2.60	2.08	2.54
SP75-270K	27.0 ±10%	73.0	87.6	2.38	1.90	2.37
SP75-330K	33.0 ±10%	89.0	107	2.10	1.68	2.15
SP75-390K	39.0 ±10%	111	133	1.95	1.56	1.92
SP75-470K	47.0 ±10%	136	163	1.75	1.40	1.74
SP75-560K	56.0 ±10%	149	179	1.65	1.32	1.66
SP75-680K	68.0 ±10%	200	240	1.45	1.16	1.43
SP75-820K	82.0 ±10%	222	266	1.30	1.04	1.29
SP75-101K	100 ±10%	270	324	1.25	1.00	1.23
SP75-121K	120 ±10%	315	378	1.12	0.90	1.07
SP75-151K	150 ±10%	427	512	1.00	0.80	1.00
SP75-181K	180 ±10%	528	634	0.91	0.73	0.90
SP75-221K	220 ±10%	608	730	0.81	0.65	0.84
SP75-271K	270 ±10%	700	840	0.75	0.60	0.78
SP75-331K	330 ±10%	914	1,097	0.66	0.53	0.68
SP75-391K	390 ±10%	1,035	1,242	0.62	0.50	0.64
SP75-471K	470 ±10%	1,300	1,560	0.56	0.45	0.57
SP75-561K	560 ±10%	1,500	1,800	0.51	0.41	0.53
SP75-681K	680 ±10%	1,760	2,112	0.46	0.37	0.50
SP75-821K	820 ±10%	2,260	2,712	0.41	0.33	0.44
SP75-102K	1,000 ±10%	2,590	3,108	0.38	0.30	0.38

■ 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。

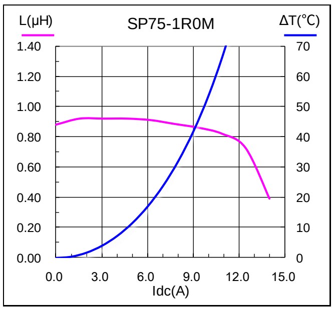
※1 Inductance measure condition at 1kHz, 0.25V.
电感测试条件为 1kHz, 0.25V。

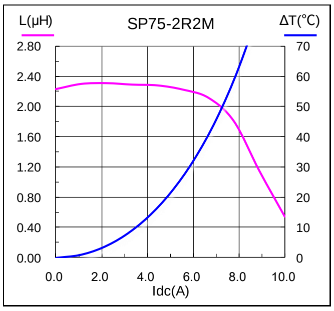
※2 Saturation current：the actual value of DC current when the inductance decrease 20% of its initial value.
饱和电流：电感值下降其初始值的 20%时所加载的实际直流电流值。

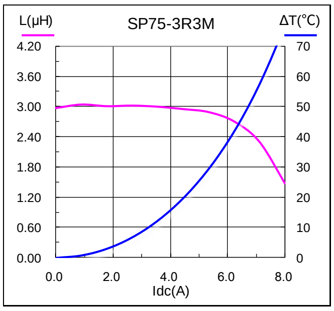
※3 Temperature rise current：the actual value of DC current when the temperature rise is ΔT40℃(Ta=25℃).
温升电流：使产品温度上升到 ΔT40℃时所加载的实际直流电流值(Ta=25℃)。

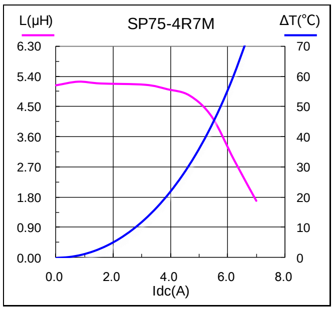
※ Special remind：Circuit design, component placement, PWB size and thickness, cooling system and etc. all will affect the product temperature. Please verify the product temperature in the final application.
特别提醒：线路设计，组件布局，印刷线路板(PWB)尺寸及厚度，散热系统等均会影响产品温度。
请务必在最终应用时，验证产品发热状况。

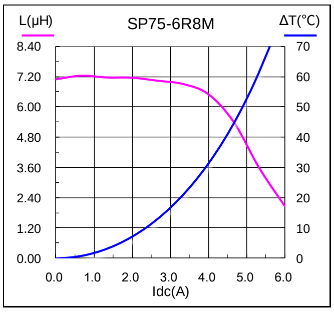
6 Saturation current VS temperature rise current curve
饱和电流 VS 温升电流曲线

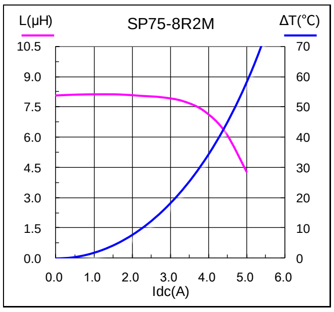


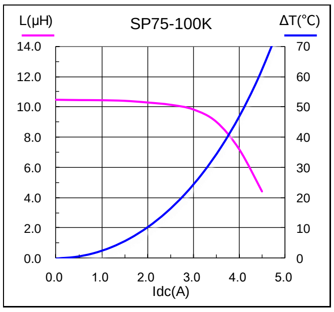


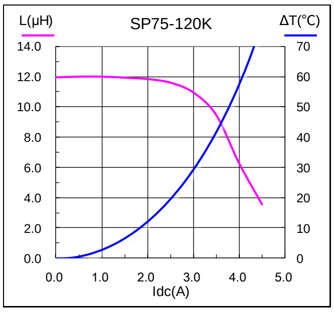


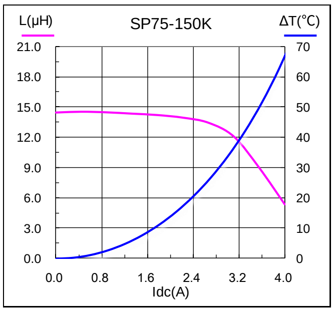


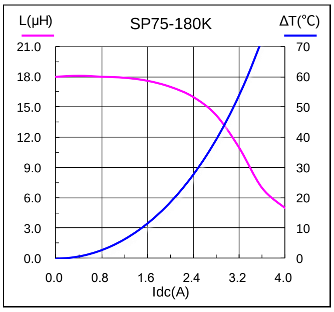


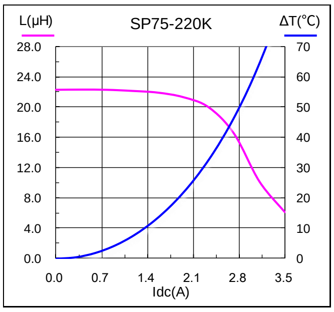


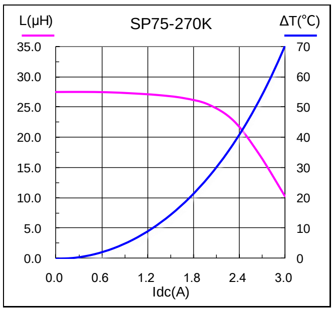


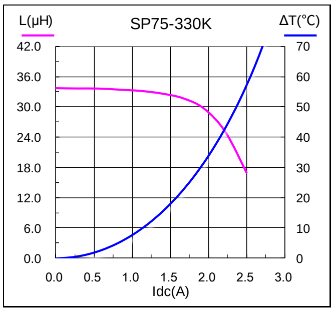


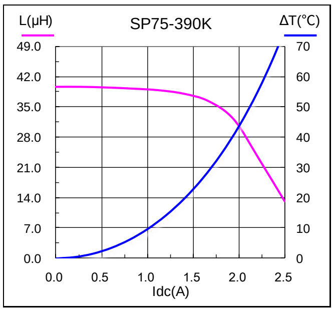


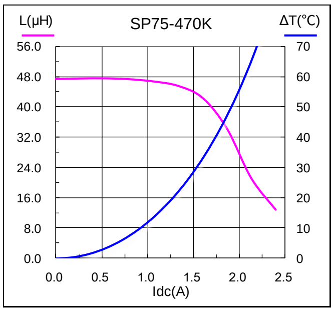


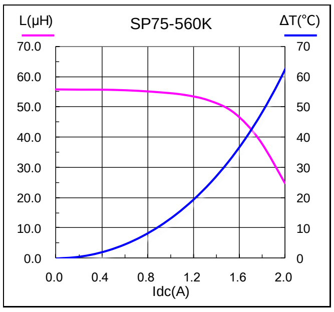


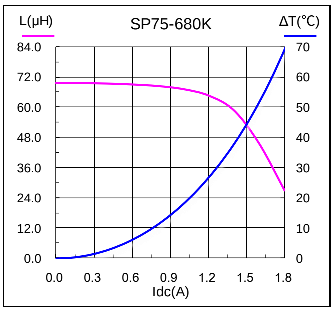


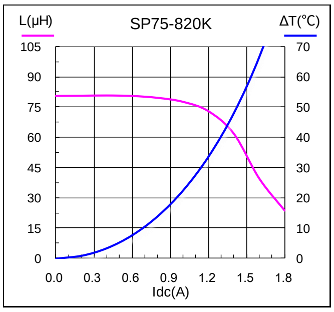


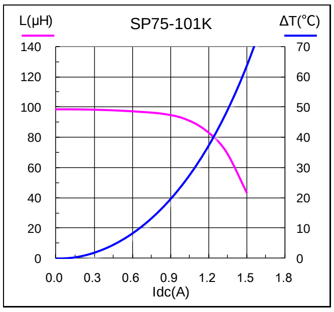


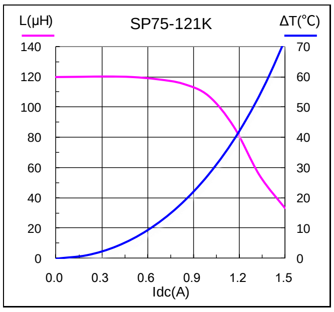


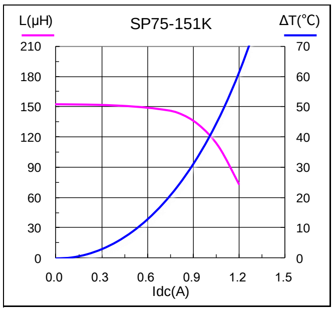


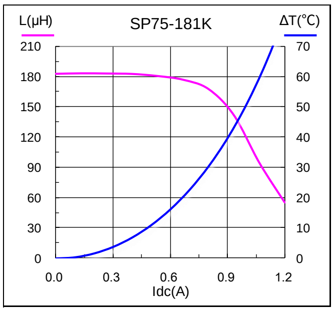


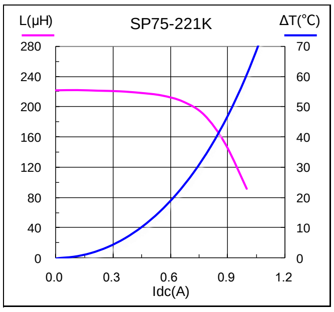


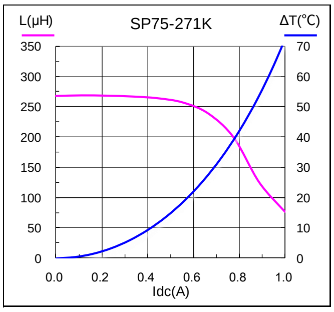


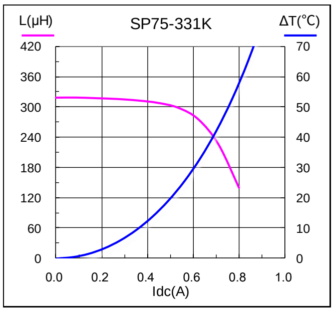


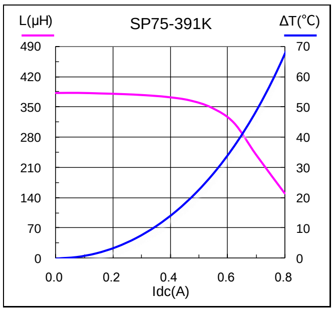

L(μH)
SP75-151K
ΔT(℃)
210
180
150
120
90
60
30
0
70
60
50
40
30
20
10
0
0.0
0.3
0.6
0.9
1.2
1.5
Idc(A)

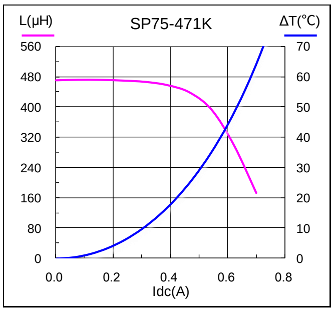

L(μH)
SP75-181K
ΔT(℃)
210
180
150
120
90
60
30
0
70
60
50
40
30
20
10
0
0.0
0.3
0.6
0.9
1.2
Idc(A)

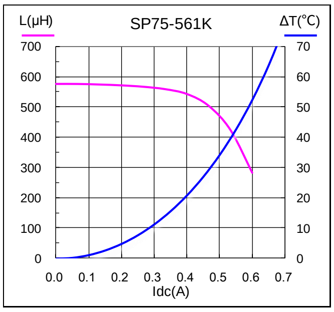

L(μH)
SP75-221K
ΔT(℃)
280
240
200
160
120
80
40
0
70
60
50
40
30
20
10
0
0.0
0.3
0.6
0.9
1.2
Idc(A)

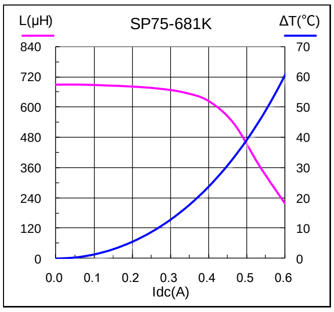

L(μH)
SP75-271K
ΔT(℃)
350
300
250
200
150
100
50
0
70
60
50
40
30
20
10
0
0.0
0.2
0.4
0.6
0.8
1.0
Idc(A)

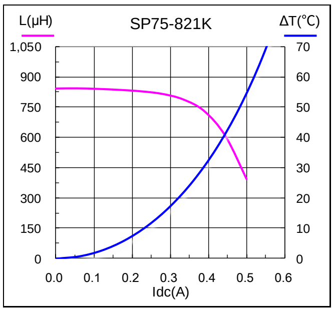

L(μH)
SP75-331K
ΔT(℃)
420
360
300
240
180
120
60
0
70
60
50
40
30
20
10
0
0.0
0.2
0.4
0.6
0.8
1.0
Idc(A)

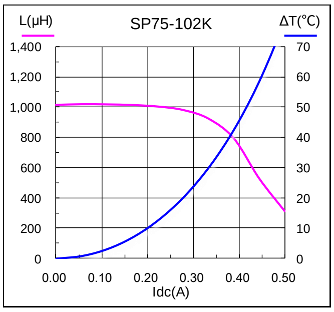

L(μH)
SP75-391K
ΔT(℃)
490
420
350
280
210
140
70
0
70
60
50
40
30
20
10
0
0.0
0.2
0.4
0.6
0.8
Idc(A)


L(μH)
SP75-471K
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
Idc(A)


L(μH)
SP75-561K
ΔT(℃)
700
600
500
400
300
200
100
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)

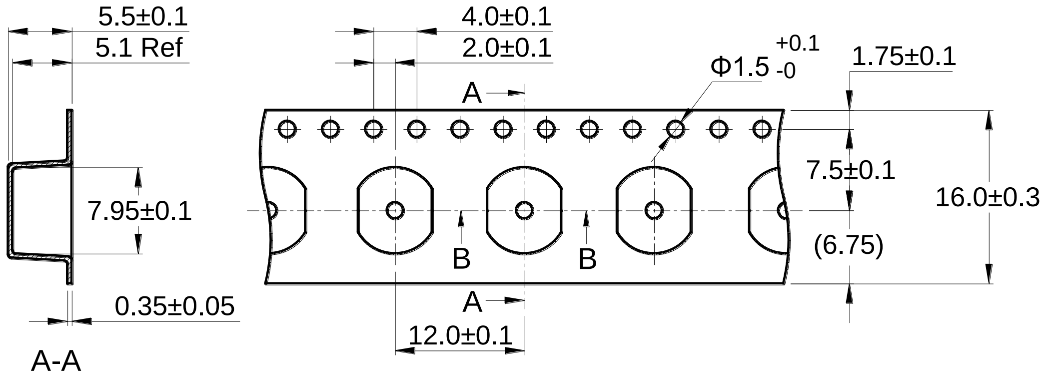

L(μH)
SP75-681K
ΔT(℃)
840
720
600
480
360
240
120
0
70
60
50
40
30
20
10
0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
Idc(A)

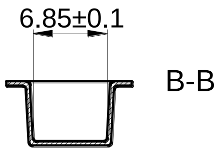

L(μH)
SP75-821K
ΔT(℃)
1,050
900
750
600
450
300
150
0
70
60
50
40
30
20
10
0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
Idc(A)


L(μH)
SP75-102K
ΔT(℃)
1,400
1,200
1,000
800
600
400
200
0
70
60
50
40
30
20
10
0
0.00
0.10
0.20
0.30
0.40
0.50
Idc(A)

7 Packing specification
包装规格

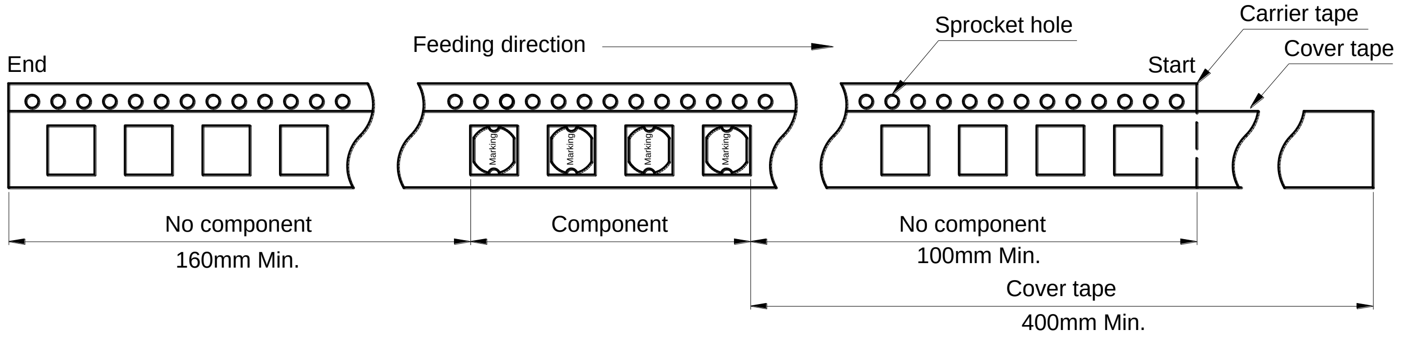
7.1 Carrier tape dimensions (mm)
载带尺寸





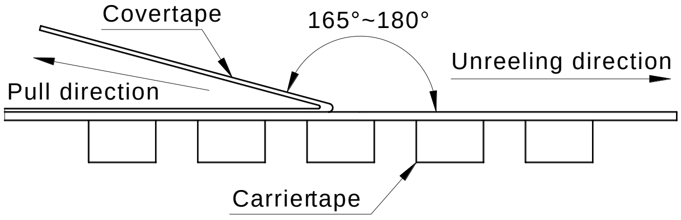
※ Packing is referred to the international standard IEC 60286-3.
包装参照国际标准 IEC 60286-3。

7.2 Tape direction
捆包方向

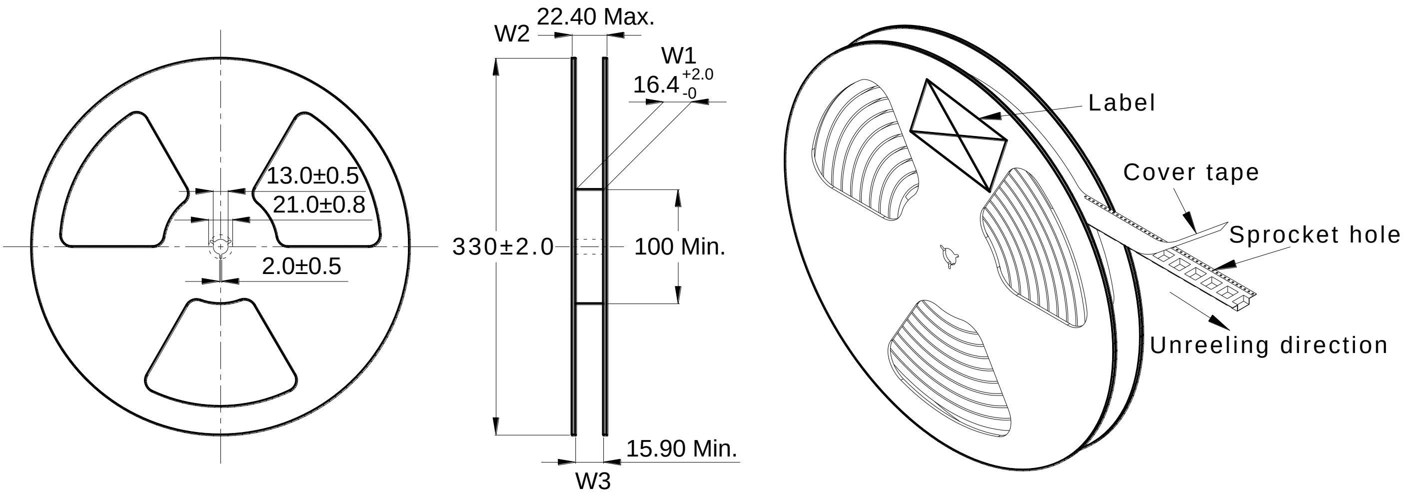


7.3 Cover tape peel off condition
盖带剥离条件

- ■ 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
SP75	1000pcs	(1000×4) = 4000pcs	(4000×2) = 8000pcs

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

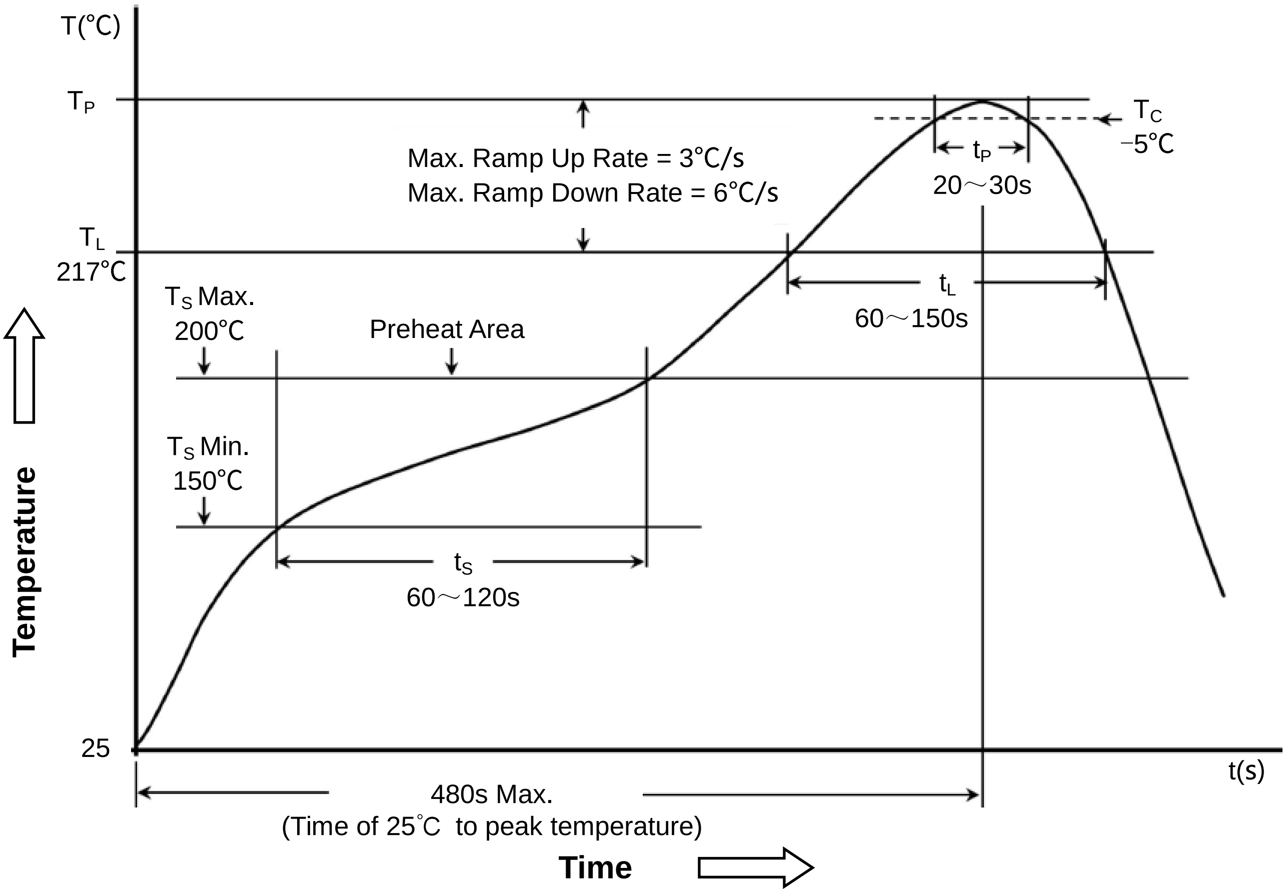
■ Part No.
产品型号
■ Electrical Information
产品电性信息
■ Quantity
数 量
■ Packing No.
包装流水号

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℃	260℃	260℃
	1.6～2.5mm	260℃	250℃	245℃
	≥2.5mm	250℃	245℃	245℃

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