

JK-nSMD300L PPTC DEVICES

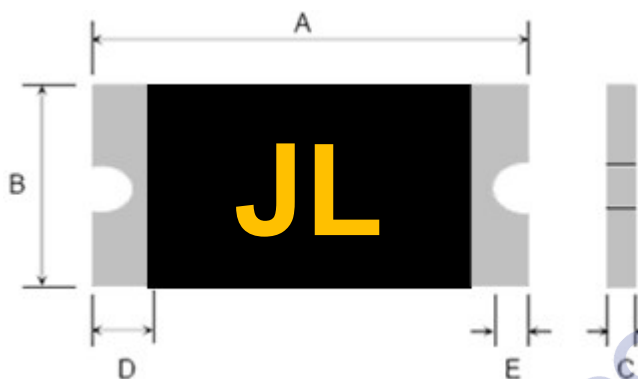
Part Number: Q/JKTD-12-300

Edition: A1

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金瑞电子材料
Jinrui Electronic material



Terminal pad materials: Tin-Plated Nickel-copper

Terminal pad solder ability: Meets EIA specification RS 186-9E and ANSI/J-STD-002 Category 3.

Table1 :Dimension(Unit : mm)

Model	Marking	A		B		C		D	E
		Min.	Max.	Min.	Max.	Min.	Max	Min.	Min.
JK-nSMD300L	JL	3.0	3.5	1.5	1.8	0.4	1.2	0.15	0.1

Table2 :Performance Ratings

Model	V _{max} (Vdc)	I _{max} (A)	I _{hold} @25°C (A)	I _{trip} @25°C (A)	P _d Typ (W)	Maximum Time To Trip		Resistance	
						Current (A)	Time (Sec)	R _{imin} (Ω)	R _{lmax} (Ω)
JK-nSMD300L	12.0	50.0	3.0	6.0	0.8	15.0	2.0	0.004	0.02

Table3:Test Conditions and Standards

Test Item	Test Conditions	Accept/Reject Criteria
Initial Resistance	In still air, 25°C	0.004-0.02Ω
Holding Current	25°C, 3.0A, 60min	No Trip
Time to Trip	25°C, 15.0A	≤2.0 S
Trip endurance	12V, 50.0A, 60min	No arcing or burning

Table4:Thermal Derating Chart-IH (A)

JK-nSMD300L	Maximum ambient operating temperature (°C)								
	-40	-20	0	25	40	50	60	70	85
Hold Current (A)	4.03	3.51	3.26	3.00	2.49	2.23	2.06	1.71	1.20
Trip Current (A)	8.06	7.02	6.52	6.00	4.98	4.46	4.12	3.42	2.40

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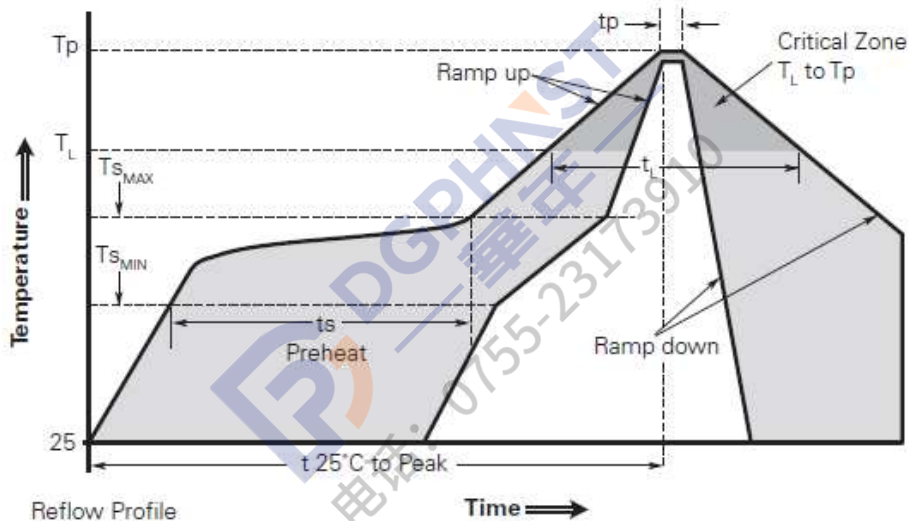
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Solder reflow conditions



Profile Feature	Pb-Free Assembly
Average ramp up rate (Ts_{MAX} to Tp)	3°C/second max.
Preheat	
• Temperature min. (Ts _{MIN})	150°C
• Temperature max. (Ts _{MAX})	200°C
• Time (ts _{MIN} to ts _{MAX})	60-120 seconds
Time maintained above:	
• Temperature (T _L)	217°C
• Time (t _L)	60-150 seconds
Peak/Classification temperature (Tp)	260°C
Time within 5°C of actual peak temperature	
Time (tp)	30 seconds max.
Ramp down rate	3°C/second max.
Time 25°C to peak temperature	8 minutes max.

Note: All temperatures refer to topside of the package, measured on the package body surface.

- Recommended reflow methods: IR, vapor phase oven, hot air oven, N2 environment for lead-free.
- Devices are not designed to be wave soldered to the bottom side of the board.
- Recommended maximum paste thickness is 0.25mm (0.010inch).
- Devices can be cleaned using standard industry methods and solvents.
- Soldering temperature profile meets ROHS lead-free process.

Notes: If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements

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Tape and reel specifications (mm)

Packaging: Bulk ,5000pcs per bag

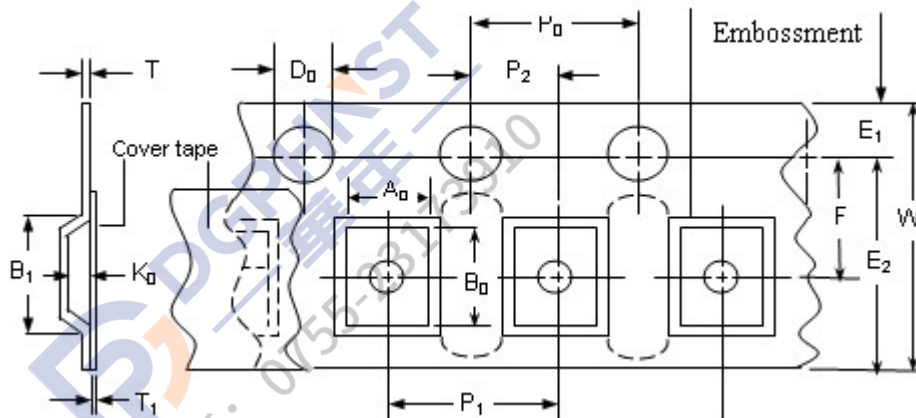
Covering Specifications EIA 481-1

W	8.15+0.15/-0.3
P ₀	4.0 ± 0.10
P ₁	4.0 ± 0.10
P ₂	2.0 ± 0.05
A ₀	1.95 ± 0.10
B ₀	3.65 ± 0.10
D ₀	1.55 ± 0.05
F	3.50 ± 0.05
E ₁	1.75 ± 0.10
T	0.20 ± 0.10
Leader min.	390
Trailer min.	160

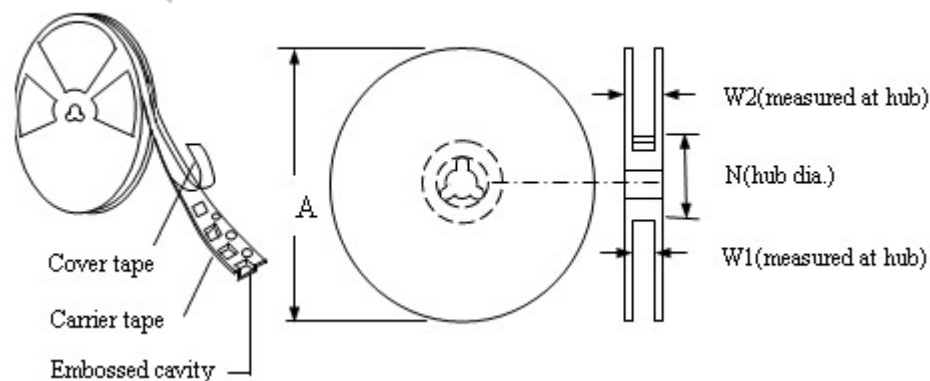
Reel Dimensions

A	178 ± 1.0
N	59 ± 1
W ₁	8.5 ± 1.0 / -0.2
W ₂	12.0 ± 1

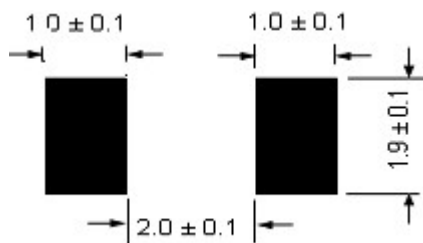
EIA Tape Component Dimensions



EIA Reel Dimensions



Recommended pad layout (mm)



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SMD PTC 使用注意事项 Cautions for SMD PTC Use

- 1、请参照规格书规定的最大电压、电流使用产品，超出额定最大值可能导致PTC出现电弧、电阻升高、甚至击穿
Please refer to the maximum voltage and current specified in the specification to use the product. Exceeding the rated maximum value may cause arcing, increased resistance, or even breakdown of the PTC
- 2、规格书所规定的电阻和电气性能均是在金瑞指定的测试板，经过一次回流焊接后测试，如果有二次焊接或其他热工序，可能会对性能有衰减
The electrical resistance and electrical performance specified in the specification are all tested on the test board designated by Jinrui after a reflow soldering. If there is a secondary soldering or other thermal processes, the performance may be attenuated
- 3、PTC在不同温度下保持电流有变化，请参照规格书和实际使用下的环境温度进行选型
The holding current of PTC varies at different temperatures, please refer to the specifications and the actual ambient temperature for selection
- 4、PTC旨在保护偶尔出现的过流，或者过热故障现象，长时间或者频繁故障会降低产品的保持电流
PTC is designed to protect the occasional overcurrent or overheating failure phenomenon. Long-term or frequent failures will reduce the holding current of the product
- 5、PTC焊接工艺为回流焊，工艺参数可参考规格书推荐的温度曲线，禁止使用手工焊接PTC，相邻元器件使用热风枪焊接也会影响PTC的性能
The PTC soldering process is reflow soldering. The soldering process can refer to the temperature curve recommended in the specification. Manual soldering of PTC is prohibited. The use of hot air gun soldering of adjacent components will also affect the performance of PTC
- 6、PTC为热敏元器件，避免在其周围安装热源元件，避免安装在受压或者影响其热膨胀的环境中
PTC is a heat-sensitive component, avoid installing heat source components around it, and avoid installing it in an environment that is compressed or affects its thermal expansion
- 7、安装或使用过程中，禁止PTC受到机械损伤，不建议使用含有机溶剂的液体清洗产品，这可能影响PTC的可焊性
During installation or use, the PTC is forbidden to be mechanically damaged. It is not recommended to use liquid cleaning products containing organic solvents, which may affect the solder ability of PTC
- 8、低阻SMD PTC湿敏等级为2a级，储存条件为小于或等于30° C/60% RH，车间寿命为4周，未拆封产品仓库储存时间超过一年请寄回厂家复检后使用
Low resistance SMD PTC moisture sensitivity grade of 2a, storage conditions of less than or equal to 30 °C/ 60% RH, workshop life of 4 weeks, Unopened products stored in the warehouse for more than one year should be sent back to the manufacturer for re-inspection and use

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