

Description

The component consists of two high-performance ceramic PTCs mounted in a lead-frame for (SMD) direct soldering onto a printed-circuit board (PCB) or substrate. The ceramic PTCs are soldered to the lead frame by a reflow process, during which the solder layer is melted to the metallized ceramic surface using a low residue flux. This structure can hold the low matched resistance in a loop. The component in accordance to RoHS.



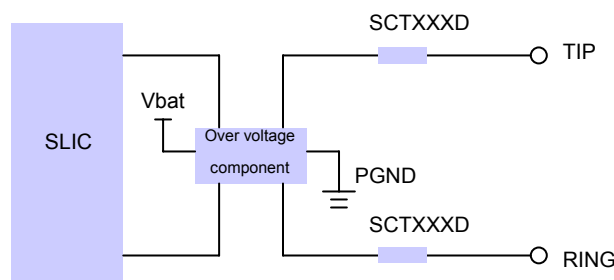
Features

- Very small footprint, allowing to increase the number of lines per PCB
- Matched pairs in one component, significantly reducing the assembly time
- Limited height and weight, used on high speed pick-and-place circuit assembly
- Flat pick-up ceramic area for easy placement
- Smaller ceramics for faster response time
- Thermal coupled PTC's for enhanced protection
- Four spaced terminations for heat flow regulation and improved mechanical stability
- RoHS compliant and suitable for Pb-baring and Pb-free reflow soldering
- Compliant with ITU-T K.21
- Basic level lightning surges (10/700 μ s)
- Basic level power induction (600 V, 1 A, 0.2 s)
- Power contact criteria A/B (230 V, 15 min.)

Applications

Dual SMD PTC are typically used as the principle overcurrent protectors in Telecom product interface circuit.

- Transmission equipment such as Central Office linecard, DLC linecard, NGN linecard, MSAN linecard, FTTx linecard ...
- Customer Premises Equipment (CPE) such as IAD-VoDSL, ATA, STB, VoIPGW, VoCable, Wireless VoIP router, PC telephony card ...
- PBX's and other switches
- Primary protection including main distribution frames, building entrance equipment and station protection modules.



Typical VoIP SLIC Protection Circuit

Basic reference data

PARAMETER	VALUE	UNIT
Rated voltage (RMS)	230	V
Maximum voltage (RMS)	250	V
Operating temperature range	0 to+70	°C
Weight	~1.557	g
Resistance	25 ± 20%	Ω
The initial resistance difference of Two PTC thermistors in one house	1.0	Ω

Electrical Characteristics

No.	ITEM	Min.	Typ.	Max.	Unit
1	Rated zero power resistance (25°C)	20	25	30	Ω
2	The initial resistance difference of two PTC thermistor in one device at 25°C			1.0	Ω
3	Hold current at 40±2°C	80			mA
4	Trip time 3A→0.5A			200	mS
	1A→0.5A			1.5	S
	0.5A→0.15A			6	S
5	Surge test: 10/1000 μ s, 1KV, 25A, impulse 30 times, No crack and fire.		25		A
6	Power induction test: 600V _{AC} , 1A, On 0.2s, Off 60s, 10 times, No damage and fire		600		V
7	Power conduct test: 250 V _{AC} , R _s =58 Ω on15min,one cycle no damage.		250		V
8	Power contact test: 220 V _{AC} , R _s =58 Ω on 1 min, off 10min, 20times, ΔR/R≤20%.		220		V
9	Operating temperature range (V=0) (V=V _{max})		-40~+85		°C
			0~+70		

Physical Specifications

Lead material	Tin plated brass
Case material	PPS
Solder heat withstand	IEC-STD 68-2-20,
Lead solderability	EIC60068-2-58
Flammability rating	IEC 695-2-2 Needle Flame Test for 20 s
Storage humidity	Per IPC/JEDEC J-STD-020A Level 2a

Environmental Specifications

No.	Item	Test condition	Requirement
1	Dry temperature	125°C,1000h,V=0V	$\Delta R/R < 10\%$
2	Dry cold	-40°C,1000h, V=0V	$\Delta R/R < 10\%$
3	Humidity	Tam=40°C,Rh: 95%,1000h, V=0V	$\Delta R/R < 10\%$
4	Endueance Voltage	Tam=85°C,72h,V=230V	No fire, no crack $\Delta R/R < 10\%$

ITU K.21 Performance

	Test No.	ITU K.21	
		Basic test level	Enhanced test leve I
Power Induction	1	A	A
	2	B	C
Power Contact	3	D	E
Lightning Surge	4	F	G
	5	H	I

ITU K.21 Test Condition Overview

Power Induction	A	600VAC,R=600 ohm,t=0,2S,criteria A
	B	600VAC,R=600 ohm,t=1,0S,with GDT,criteria A
	C	1500VAC,R=200 ohm,t=2,0S,with GDT,criteria A
Power contact	D	230VAC,t=15 min,R=10-1000 Ohm,criteria B
	E	230VAC,t=15min,R=10,20,40,80,1000Ohm,criteriaB R=160,300,600Ohm,criteria A
Lightning Surge	F	Uc(max)=1,0KVAC,R=25 Ohm,t=10/700 Gs,without GDT,Cruteria A
	G	Uc(max)=1,5KVAC,R=25 Ohm,t=10/700 Gs,without GDT,Criteria A
	H	Uc(max)=4,0KVAC,R=25 Ohm,t=10/700 Gs,with GDT,Criteria A
	I	Uc(max)=6,0KVAC,R=25 Ohm,t=10/700 Gs.,with GDT,Criteria A

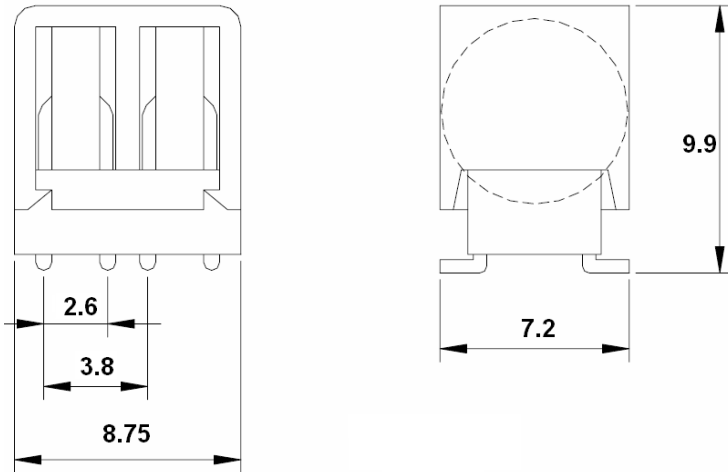
Criteria A: no damage, function must be fulfilled.

Criteria B: no fire hazard.

Standards

- Housing material according to UL94-V0
- Climatic category acc. to IEC 68-1 40/125/56
- Compliant with ITU-T K21

Product Dimensions (mm) and Marking

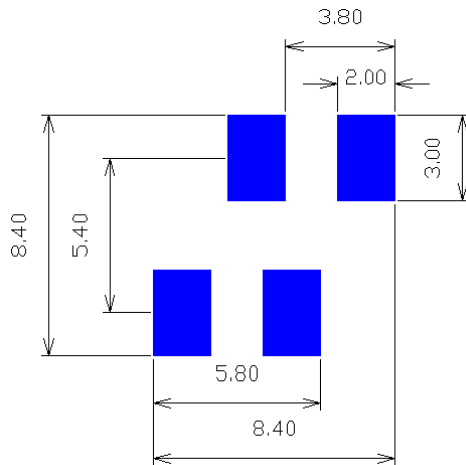


Product Dimensions

SCT
 250D

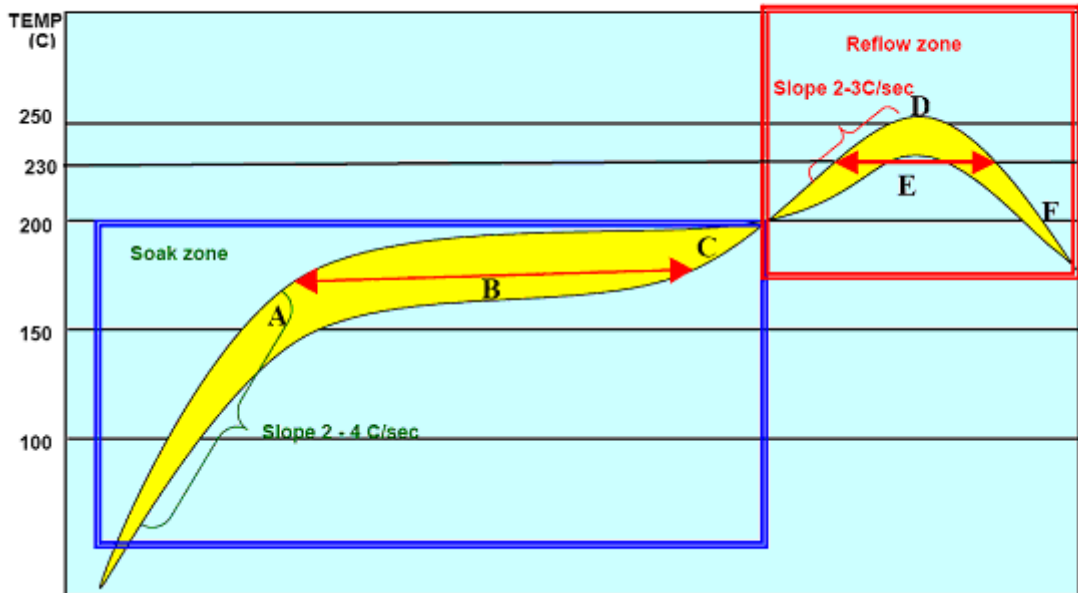
Marking

Recommend Solder Pad (mm)



Reflow Soldering and Rework Recommendations

Reflow Solder Curve



Item	Process	Description	Reach Temp.	Time or Rate
A	Soak Start	From ambient to soak temperature and soak start	150°C - 180°C	2°C - 4°C / sec
B	Soak time	Soak time	---	60s - 120s
C	Soak end	Soak end	180°C - 200°C	---
D	Peak Temp.	From soak temperature to Peak temperature	260°C	2°C - 3°C / sec
E	Time above	Main heating time	230°C - 260°C	40s - 60s
F	Cooling	From main heating temperature to 100°C	100°C	Max. 4°C / sec

Notes:

1* Peak temperature can be high to 260°C, and the recommendation time is as below

- at 230°C 40s ~ 60s
- at 240°C 30s ~ 40s
- at 260°C ~ 3s

2* Recommended reflow methods: IR, Vapor phase oven, hot air oven, wave solder.

3* Devices can be cleaned using standard industry methods and solvents.

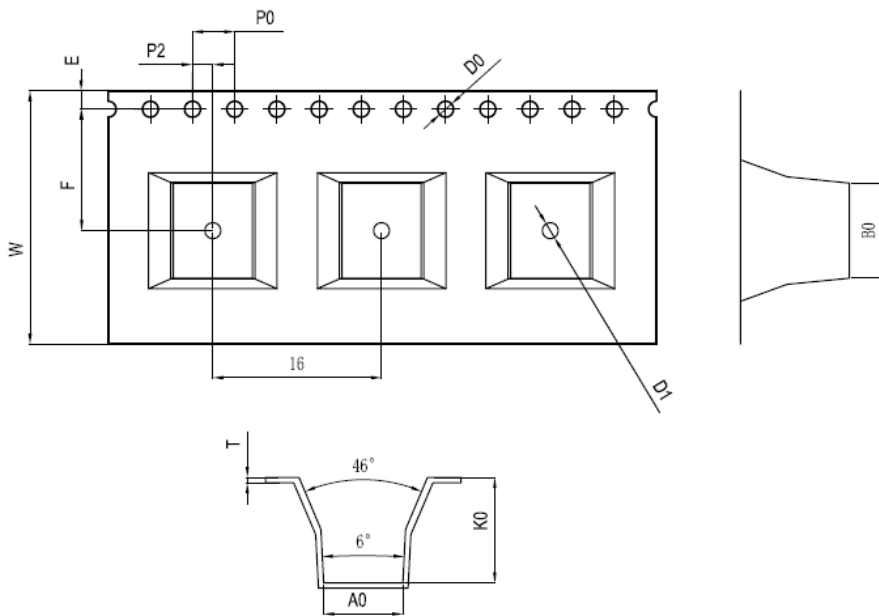
4* Component can withstand 270°C 10 sec.

5* If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

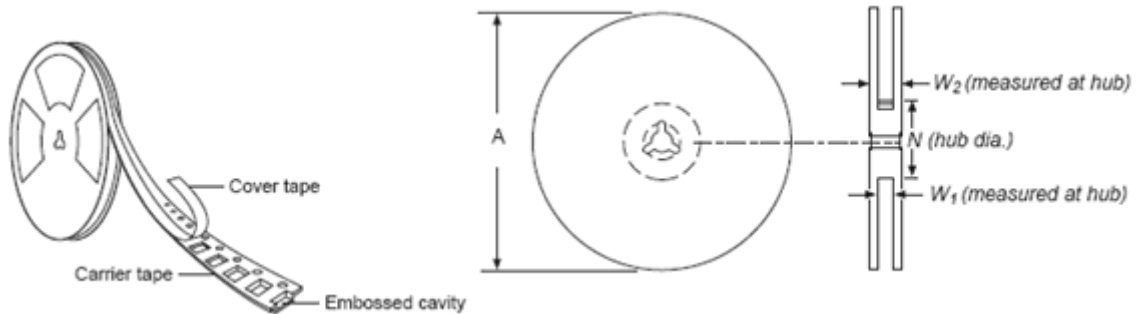
Storage

The production should be in the environment of good ventilation. The indoor temperature is -40°C ~ +55°C, and the relative humidity $\leq 85\%$ (at 25°C), without acid, alkali and other harmful impurity.

Tape Information



W	24±0.3
F	11.5±0.1
T	0.5±0.05
E	1.75±0.1
P	16±0.1
P0	4±0.1
P2	2±0.1
A0	7.5±0.1
B0	9.2±0.1
K0	10.3±0.1
D0	□1.5±0.1
D1	□1.5±0.1



Dimension	330mm reel	
A	330	-2.0/+0
W1	24.4	max
W2	30.4	+2.0/-0
N	80	max
Quantity per reel (min)	400 pcs	

Package Information

Package	Reel QTY	Box QTY	Component Weight	Net Weight Per Box	Gross Weight/Per Box	Box Outline
	PCS	PCS	g	Kg	Kg	mm
Tape	400	4000	1.557	6.23	10.25	405×360×370