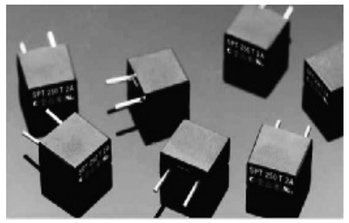
SPT SUB-MINIATURE FUSE
SMART PROTECTOR TIME LAG TYPE

SPT sub-miniature fuses are extremely small and an excellent choice to accommodate PCB space requirements. Available in 1 to 4 amps. Built according to IEC 60127-3/4. Has several approvals including: VDE, CCC, cUL, SEMKO, PSE and EK. Interrupting rating fo 35A or 10X rated current, whichever is greater.

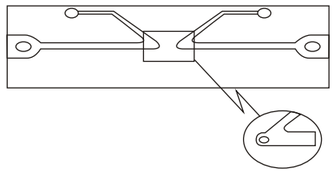


■ GENERAL SPECIFICATIONS

Model	Current Rating (A)	Voltage Rating (V)	Nominal Resistance Cold Ohms(Ω)	Nominal Melting I^2t (A^2 s)
SPT 1A00	1	250	0.073	9.7
SPT 1A25	1.25		0.051	12.3
SPT 1A60	1.6		0.041	17.8
SPT 2A00	2		0.031	33.0
SPT 2A50	2.5		0.023	47.0
SPT 3A15	3.15		0.017	62.5
SPT 4A00	4		0.013	102.0
SPT 5A00	5		0.010	163.0
SPT 6A30	6.3		0.007	235.0

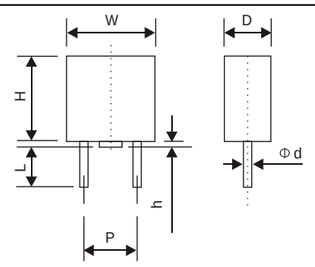
■ CHARACTERISTICS

Voltage drop	Max. Voltage drop(mV)	1A	140
		1.25A	130
		1.6A	120
		2A	100
		2.4A	100
		3.15A	100
		4A	100
		5A	100
		6.3A	90
			All electrical tests are to be conducted with an ambient air at a temperature of 25±3℃. The air temperature should not to vary more than 5 ℃ during the test, and to be within these limits.
Endurance	The voltage drop increase shall be less than 10% of the value before the test.		100 cycles of rated current (d.c.) carry for 1hr, then switch off for 15min. followed by 1hr at 1.5 times rated current.
Test at an elevated Temperature 70℃	Not operate		Rated current shall be passed through the fuse-links for 1hr
Insulation	0.1MΩ min. measured by 500V dc insulation tester		After overload test or breaking capacity test

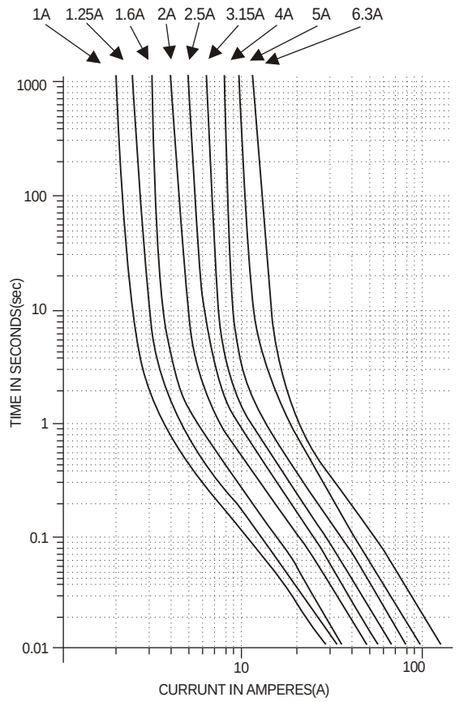


■ DIMENSIONS (mm)

Model	Dimension(mm)						
	L±1.0	H±2.0	L±3.0	P±0.05	Min h	D±0.2	Φd±0.03
SPT TE	8.4	7.9	4.3	5.05	0.5	4.3	0.02
SPT TS		6.5					



■ AVERAGE TIME CURRENT CURVE AND AMPERE RATING



% of Ampere Rating	Opening Time
210%	2minutes, Maximum
275%	0.4sec min: 10seconds Maximum
400%	0.15sec min: 3seconds Maximum
1000%	0.02sec min: 0.15seconds Maximum

■ ORDERING PROCEDURE EXAMPLE

SPT — Model #

250 — Voltage Rating
250: 250V

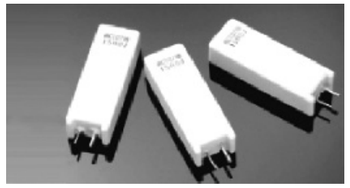
T — Characteristics
T: Time-Lag Type

E — Style
E: Rectangle Type
S: Small Rectangle Type

1A00 — Ampere Rating
1A00: 1A
1A25: 1.25A
2A50: 2.5A
6A30: 6.3A

RCT RECTANGULAR THERMAL CUT-OFF RESISTOR

RCT models have a metal alloy, wire wound, ceramic core element connected to a thermal fuse. This system is housed in a thermally conductive ceramic case and then sealed and insulated with inorganic filler. These models exhibit excellent surge handling capability, high stability and quick response to overload and temperature conditions.
Applications include: PDP power supplies and circuits preventing current inrush to switching regulators.



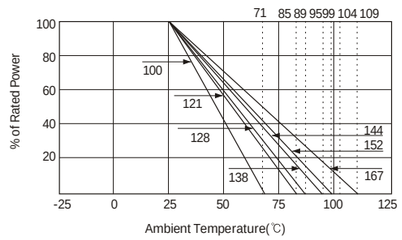
GENERAL SPECIFICATIONS

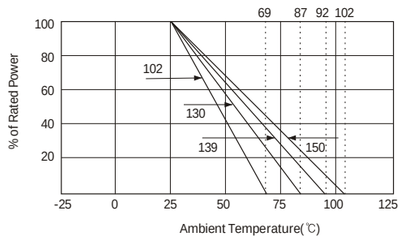
Thermal Fuse Symbol	Type of Thermal Fuse			Continuous Rated Power(W)		Resistance Range(Ω)	Resistance Tolerance(%)
	Nominal Operating Temp.(℃)	Voltage Rating(V)	Current Rating(A)	05	07	RCT	
E	102	250	2	0.9	-	1~20	J (±5) K (±10)
K	130			1.3	-		
B	139			1.6	-		
D	150			1.8	-		
C	100	250	10	1.0	1.3		
H	121			1.3	1.7		
P	128			1.5	1.9		
B	139			1.6	2.1		
N	144			1.7	2.2		
S	152			1.8	2.3		
Q	167			2.0	2.4		

CHARACTERISTICS

DC resistance	Within specified tolerance	Measure resistance at 25℃
TCR	Within ±400ppm/℃	+25℃/+100℃
Resistance to soldering heat	±(1%+0.05Ω)	260±5℃, 2~2.5mm 10±1sec. measure resistance After 1hour at room temp.
Dump heat, steady state	±(5%+0.1Ω)	25±2℃, 90~95%RH, 1.5hours on, 0.5hours off cycle, 1000hours
Endurance	±(5%+0.1Ω)	25±2℃, 1.5hours on, 0.5hours off cycle, rated DC voltage time: 1000hours

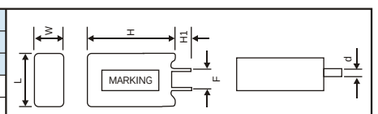
DERATING CURVES





DIMENSIONS(mm)

Model	Dimension(mm)							
	L±1.0	W±1.0	H±1.5	H1±0.5	F±0.5	Φd±0.02		
						Resistor	Fuse	
RCT 05	14.0	9.5	26.0	4.5	5.0	0.8	2A	0.6
							10A	1.0
RCT 07	14.0	9.5	40.0	4.5	5.0	0.8	10A	1.0



ORDERING PROCEDURE EXAMPLE

RCT — Model #

07 — Power Rating
05: 5W
07: 7W

1B — Fuse Rating
1B: 10A, 139℃
2D: 2A, 150℃

15RO — Norminal Resistance
15R0: 15Ω

J — Resistance Tolerance
J: ±5%
k: ±10%

PS2 SMD SMART PROTECTOR

PS2 models use a Cu alloy fusing element with FeCuSn end plates housed in a ceramic body and sealed with inorganic molding. These models have UL approval. File number: E238986 for 1-15A. They are also RoHS compliant. Applications include: LCD inverters.

GENERAL SPECIFICATIONS

Catalog Number	Ampere Rating(A)	Voltage Rating(V)	Nominal Resistance Cold ohms(Ω)
1A00	1.00	125	0.165
2A00	2.00		0.063
2A50	2.50		0.052
3A15	3.15		0.040
4A00	4.00		0.032
5A00	5.00		0.020
6A30	6.30		0.018
7A00	7.00		0.015
8A00	8.00		0.011
10A0	10.00		0.008
12A0	12.00		0.006
15A0	15.00		0.004

CHARACTERISTICS

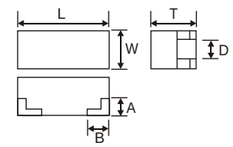
Open	Opening time	% of Ampere Rating
	4 hours minimum	100%
	10 seconds maximum	200%
Dump heat, steady state	±(5%+0.1Ω)	25±1℃, 90~95%RH, 1.5hours on/ 0.5hours off cycle, 1000hours
Endurance	±(10%+0.1Ω)	1cycle: 15minutes on, 4minutes off, 100 cycle
Soldering method		Wave solder: 260℃ 10 secs maximum
Insulation	The insulation resistance between fuse terminals shall be 0.1MΩ minimum measured by 500V dc insulation tester	100 cycle of rated current(DC.) carry for 1hour, then switch off for 15minutes. followed by 1hour at 1.5hours

ELECTRICAL CHARACTERISTICS

% of Ampere Rating	Opening Time
100%	4hours, minimum
200%	10seconds minmum

DIMENSIONS [mm]

Model	Dimension(mm)					
	L±0.5	W±0.3	T±0.3	A±0.3	B±0.5	D±1.8
PS2	6.3	3.3	2.8	1.4	1.2	1.8



ORDERING PROCEDURE EXAMPLE

PS2 — Model #

125 — Voltage Rating
125:125V

S — Style
S: SMD Type

E — Electrical Characteristics
F: Fast acting

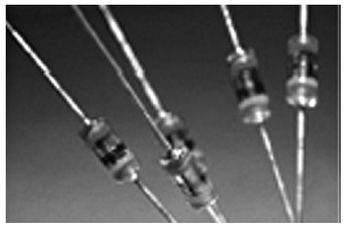
1A00 — Ampere Rating
1A00: 1A

TSA

RoHS COMPLIANT

TSA TELECOMMUNICATION SURGE ABSORBER

TSA surge absorbers protect sensitive telecommunication systems and power supplies by absorbing the incoming voltage and current noise arising from signal generation or by lightning strikes. These units feature a quick response and high stability to voltage surges and are polarity free. Some models are recognized by UL(File No. E208457) Check with your nearest RARA dealer for more details.



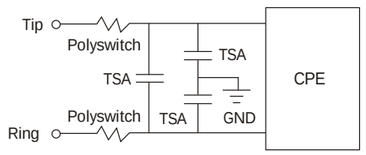
■ GENERAL SPECIFICATIONS

Model	DC Spark-Over Voltage[V]	Insulated Resistance		Capacitance (pF)
		IR(MΩ)	Measure Voltage(V)	
TSA201M	160~240	Over 100	DC100	1 Max.
TSA301L	255~345	Over 100	DC100	1 Max.
TSA301M	240~360	Over 100	DC100	1 Max.
TSA401M	320~480	Over 100	DC100	1 Max.
TSA501M	400~600	Over 100	DC100	1 Max.
TSA601M	480~720	Over 100	DC100	1 Max.

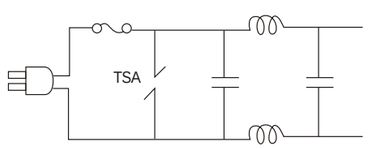
■ CHARACTERISTICS

Cold resistance	To meet the specified value	-55±3℃, 1000hours, measure Vs, IR, C
Heat resistance	To meet the specified value	125±2℃, 1000hours, measure Vs, IR, C
Moisture resistance	To meet the specified value	85+2℃, 85%RH, 1000hr., 1.5hours on 0.5hours off, Measure Vs, IR, C
Dump heat, steady, state	To meet the specified value	-55±3℃, 1000 hours, Room temp.(3 minutes) +125±2℃, 1000 hours, Room temp.(3 minutes) -55±3℃(30minute), 200times, measure Vs, IR, C
Surge life	|Δ Vs/Vs| ≤30%	Apply 10kV to charge a 1.5nF capacitor, 200 times, 10sec. interval
Surge current capacity	|Δ Vs/Vs| ≤20%	10/700μs 1.5kV 37.5A±5times

■ APPLICATION



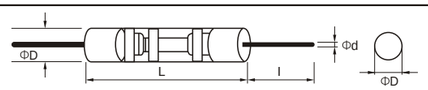
Telecommunication Line



Power Line

■ DIMENSIONS [mm]

Model	Dimension(mm)				
	L	ΦD	l	Φd	
				T type	R type
TSA	7.0±0.5	3.1±0.5	28.0±3.0	0.5±0.05	0.68±0.05



■ ORDERING PROCEDURE EXAMPLE

TSA — Model #

301 — DC Spark-over voltage
- 201: 200V
- 301: 300V
- 401: 400V
- 501: 500V
- 601: 600V

M — Tolerance
- L: ±15%
- M: ±20%

A — Style
- A: Axial type
- R: Radial type

1 — Taping
- 0: Bulk
- 1: 52mm(Φ0.5)
- 2: 52mm
- (Φ0.68-Only radial type)

Tel: 82-32-817-4325 Fax: 82-32-817-4329