PTSLR0805

Low resistance SMD PTC fuses

Applications

- Data ports
- Micromotors and fans
- Low voltage test and measurement
- Low voltage hand held equipment
- PC-based medical equipment
- USB protection
- Secondary Li-ion battery protection
- Game consoles, set top boxes
- Battery charging & charging connections

Product features

- Positive temperature coefficient (PTC)
- Surface mount resettable fuse
- Low resistance
- Compact 0805 (2012 metric) footprint
- Voltage rating 6 V
- Current rating from 0.75 A to 1.75 A
- Fast time-to-trip

Agency information

- cURus Recognized file no. E343021
- TUV: File R 50455924

Part number system/ordering:

PTSLR08056V075

- PT= PTC resettable fuse
- S= Surface mount
- LR = Low resistance
- 0805= Dimension code
- 6V= Maximum voltage
- 075= Ihold current rating (075= 0.75 A)

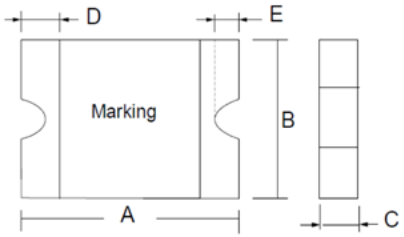
Powering Business Worldwide

Product specifications

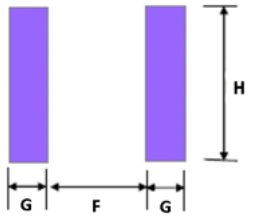
	Vmax[1]	Imax[2]	Ihold[3]	Itrip[4]	Pd[5]	Time-to-trip (maximum)		Resistance[6]			Safety approvals	
Part number	**(V_{dc})**	**(A)**	**(A)**	**(A)**	**typical (W)**	**(A)**	**(seconds)**	**Initial (R_i) minimum (Ω)**	**Post trip (R_1) maximum (Ω)**	**Part marking**	**cURus**	**TUV**
PTSLR08056V075	6	50	0.75	1.50	0.6	8.0	0.2	0.040	0.160	A	√	√
PTSLR08056V110	6	50	1.10	1.80	0.6	8.0	0.3	0.030	0.130	B	√	√
PTSLR08056V150	6	50	1.50	3.00	0.6	8.0	0.5	0.015	0.065	C	√	√
PTSLR08056V175	6	50	1.75	3.50	0.6	8.0	0.6	0.005	0.055	D	√	√

1. Vmax: Maximum continuous voltage the device can withstand without damage at rated current
2. Imax: Maximum fault current the device can withstand without damage at rated voltage
3. Ihold: Maximum current the device will pass without interruption at +23 °C still air
4. Itrip: Minimum current that will transition the device from low resistance to high resistance at +23 °C still air
5. Pd: Power dissipated from the device when in tripped state at +23 °C still air
6. R_i: Minimum resistance of the device at +23 °C
   R_1: Maximum resistance of the device one hour after tripping at +23 °C

Dimensions–mm



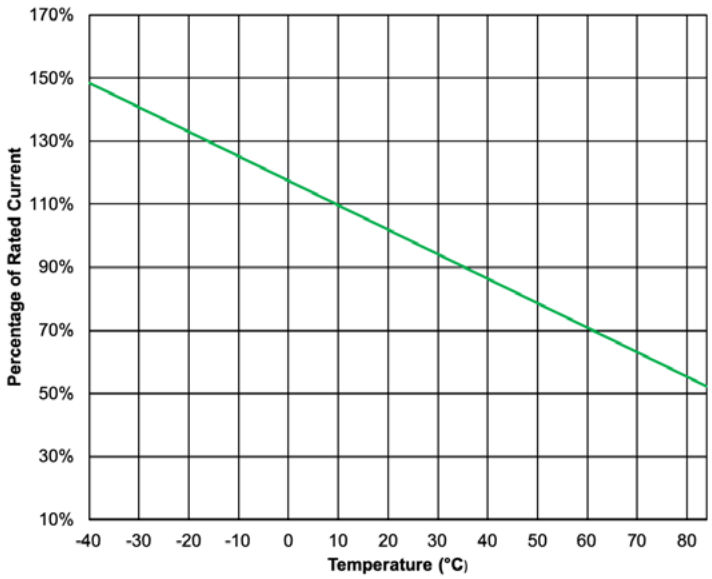
Recommended pad layout



A min	A max	B min	B max	C min	C max	D min	D max	E min	E max	F	G	H
2.0	2.2	1.2	1.5	0.40* 0.50**	0.70* 0.88**	0.15	0.55	0.05	0.45	1.2	1.0	1.5

* PTSLR08056V075, PTSLR08056V110
** PTSLR08056V150, PTSLR08056V175

Thermal derating curve

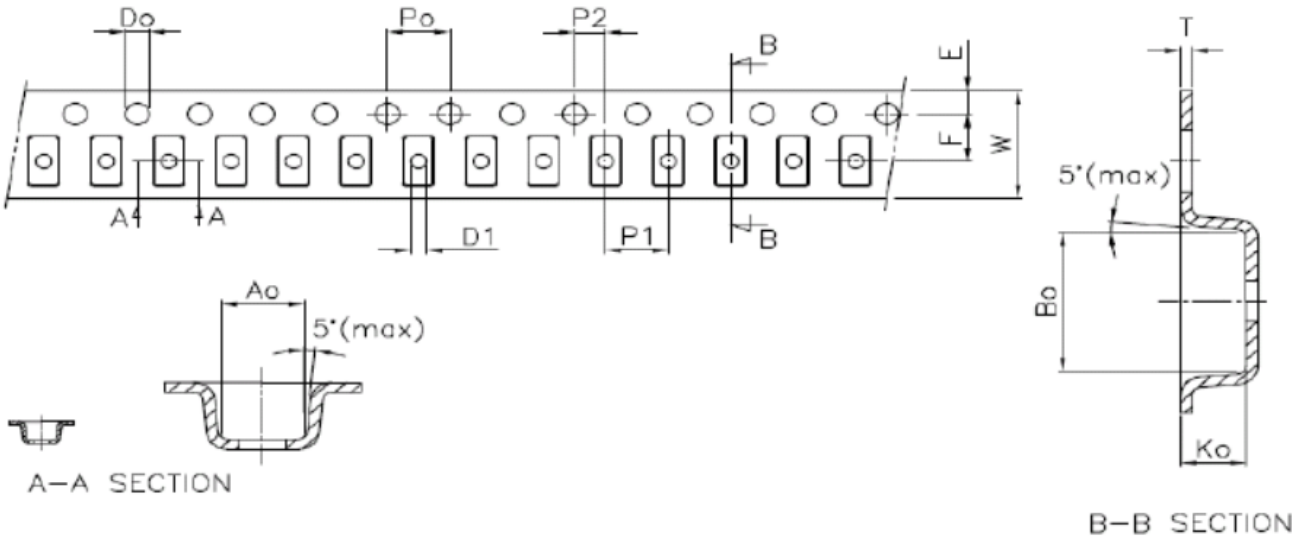


General specifications

Operating temperature: -40 °C to + 85 °C (with derating)
Storage temperature: -10 °C to + 40 °C
Storage relative humidity: ≤75%
Storage conditon: Keep away form corrosive atmosphere and sunlight
Passive aging: IEC60738-1, +85 °C, 1000 hours
Humidity aging: +85 °C, 80 to 85% relative humidity, 100 hours
Rapid change of temperature: IEC60738-1, +85 °C to -40 °C, 20 cycles, 30 minutes each
Overload endurance: UL1434, Vmax, 120% Imax, 50 cycles Vmax, 300% Itrip, 6000 cycles
Trip endurance: UL1434, Vmax, Itrip ⊣ Imax, 1000 hours
Solderability: IEC60068-2-58, +245 °C, 3 seconds
Moisture sensitivity test: J-STD-020, MSL=2a

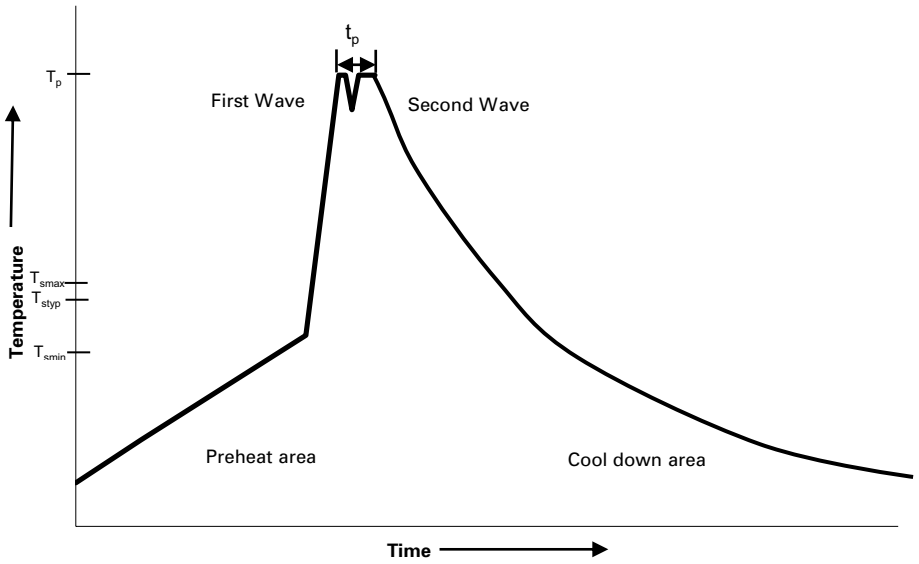
Packaging information

Supplied in tape and reel packaging, 4000 parts per 7.0" (178 mm) diameter reel



A_0 ± 0.10	B_0 ± 0.10	K_0 ± 0.05	P_0 ± 0.08	P_1 ± 0.10	P_2 ± 0.05	T ± 0.10	E ± 0.10	F ± 0.05	D_0 ± 0.05	D_1 min	W ± 0.10	$10P_0$ ± 0.20
1.60	2.30	0.90	4.0	4.0	2.0	0.25	1.75	3.50	1.55	1.0	8.00	40

Wave solder profile



Reference EN 61760-1:2006

Profile feature		Standard SnPb solder	Lead (Pb) free solder
Preheat	• Temperature min. (T_{smin})	100 °C	100 °C
	• Temperature typ. (T_{styp})	120 °C	120 °C
	• Temperature max. (T_{smax})	130 °C	130 °C
	• Time (T_{smin} to T_{smax}) (t_s)	70 seconds	70 seconds
Δ preheat to max Temperature		150 °C max.	150 °C max.
Peak temperature (Tp)*		235 °C – 260 °C	250 °C – 260 °C
Time at peak temperature (t_p)		10 seconds max 5 seconds max each wave	10 seconds max 5 seconds max each wave
Ramp-down rate		~ 2 K/s min ~3.5 K/s typ ~5 K/s max	~ 2 K/s min ~3.5 K/s typ ~5 K/s max
Time 25°C to 25°C		4 minutes	4 minutes

Manual solder

+350 °C (4-5 seconds by soldering iron), generally manual/hand soldering is not recommended

Solder reflow profile

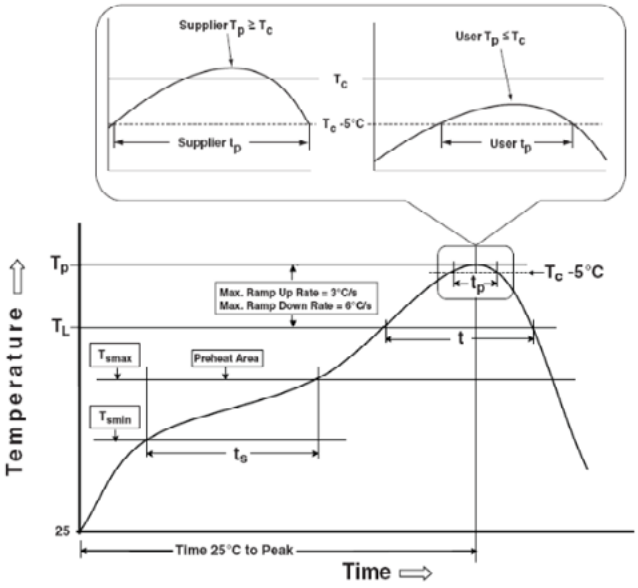


Table 1 - Standard SnPb solder (T_C)

Package thickness	Volume mm3 <350	Volume mm3 ≥350
<2.5 mm)	235 °C	220 °C
≥2.5 mm	220 °C	220 °C

Table 2 - Lead (Pb) free solder (T_C)

Package thickness	Volume mm^3 <350	Volume mm^3 350 - 2000	Volume mm^3 >2000
<1.6 mm	260 °C	260 °C	260 °C
1.6 – 2.5 mm	260 °C	250 °C	245 °C
>2.5 mm	250 °C	245 °C	245 °C

Reference J-STD-020

Profile feature		Standard SnPb solder	Lead (Pb) free solder
Preheat and soak	• Temperature min. (T_{smin})	100 °C	150 °C
	• Temperature max. (T_{smax})	150 °C	200 °C
	• Time (T_{smin} to T_{smax}) (t_S)	60-120 seconds	60-120 seconds
Ramp up rate T_L to T_p		3 °C/ second max.	3 °C/ second max.
Liquidous temperature (T_L) Time (t_L) maintained above T_L		183 °C 60-150 seconds	217 °C 60-150 seconds
Peak package body temperature (Tp)*		235 °C	260 °C
Time (t_p)* within 5 °C of the specified classification temperature (T_C)		20 seconds*	30 seconds*
Ramp-down rate (T_p to T_L)		6 °C/ second max.	6 °C/ second max.
Time 25 °C to peak temperature		6 minutes max.	8 minutes max.

* Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.

Eaton
Electronics Division
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com/electronics

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