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# 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

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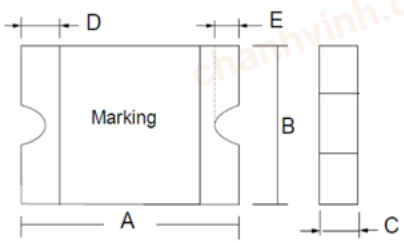


## Product specifications

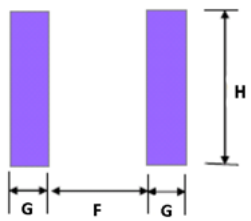
| Part number | Vmax[1] ($V_{dc}$) | Imax[2] (A) | Ihold[3] (A) | Itrip[4] (A) | Pd[5] typical (W) | Time-to-trip (maximum) (A) | Time-to-trip (maximum) (seconds) | Resistance[6] Initial ($R_i$) minimum (Ω) | Resistance[6] Post trip ($R_1$) maximum (Ω) | Part marking | Safety approvals cURus | Safety approvals 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



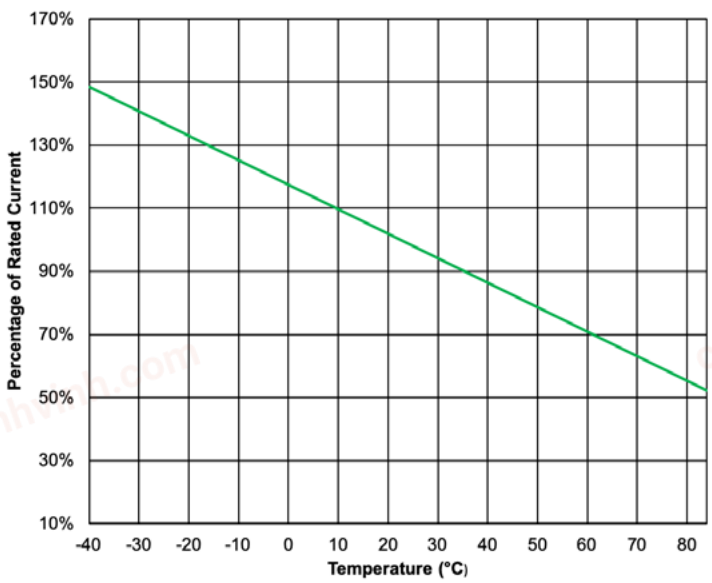

## Recommended pad layout




| 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*<br>0.50** | 0.70*<br>0.88** | 0.15 | 0.55 | 0.05 | 0.45 | 1.2 | 1.0 | 1.5 |

* PTSLR08056V075, PTSLR08056V110
** PTSLR08056V150, PTSLR08056V175

## Thermal derating curve



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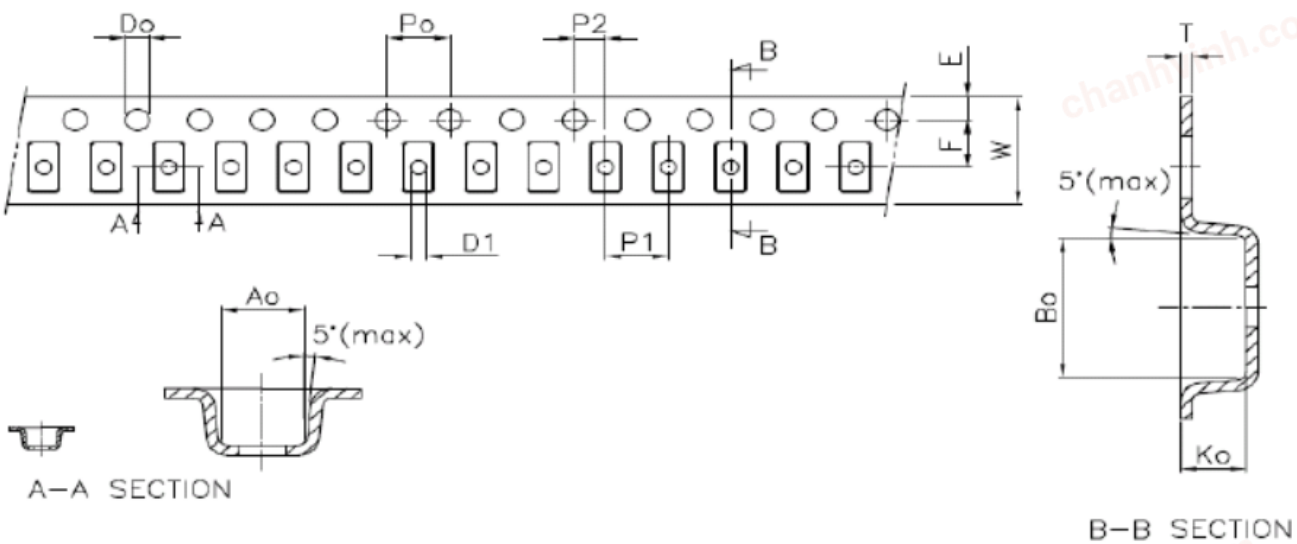
Technical Data **11047**
Effective March 2020

## 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<br>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

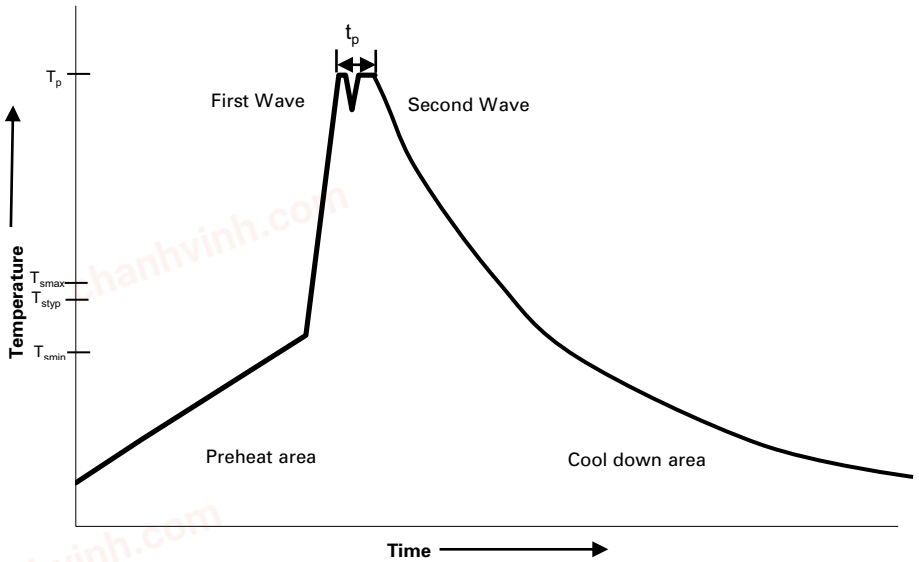



| $A_0$ ± 0.10 | $B_0$ ± 0.10 | $K_0$ ± 0.05 | $P_0$ ± 0.08 | $P_1$ ± 0.10 | $P_2$ ± 0.05 | T ± 0.10 | E ± 0.10 | F ± 0.05 | $D_0$ ± 0.05 | $D_1$ min | W ± 0.10 | $10P_0$ ± 0.20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.60 | 2.30 | 0.90 | 4.0 | 4.0 | 2.0 | 0.25 | 1.75 | 3.50 | 1.55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

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### 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 ($T_P$)* | | 235 °C – 260 °C | 250 °C – 260 °C |
| Time at peak temperature ($t_p$) | | 10 seconds max<br>5 seconds max each wave | 10 seconds max<br>5 seconds max each wave |
| Ramp-down rate | | ~ 2 K/s min<br>~3.5 K/s typ<br>~5 K/s max | ~ 2 K/s min<br>~3.5 K/s typ<br>~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

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### Solder reflow profile

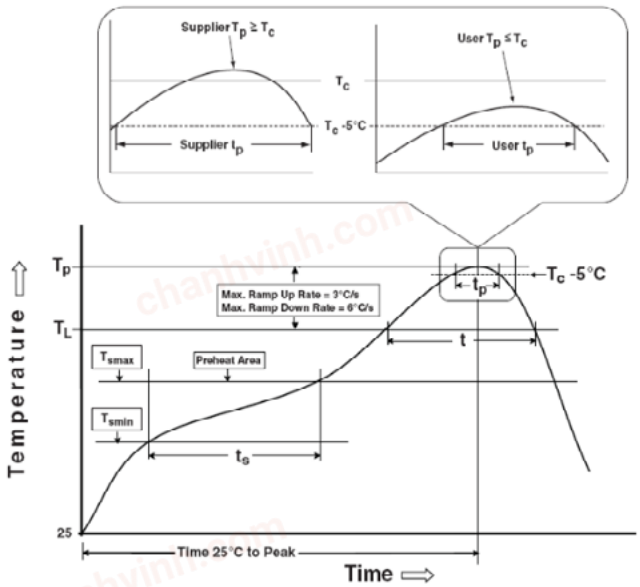



**Table 1 - Standard SnPb solder ($T_c$)**

| 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 ($T_L$)<br>Time ($t_L$) maintained above $T_L$ | | 183 °C<br>60-150 seconds | 217 °C<br>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.

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