# PTS0805

## SMD PTC fuse

### Product features

- Positive temperature coefficient (PTC)
- SMT resettable fuse
- Low resistance
- Voltage range 6 V to 24 V
- Current ratings from 0.1 A to 0.75 A
- Fast time-to-trip
- Compact 0805 (2012 metric) footprint
- Moisture snsitivity level (MSL): 1

### Applications

- USB Peripherals
- Disk drives
- Power tools
- Rechargeable battery pack protection
- Plug and play protection for motherboards and peripherals
- Mobile phones - battery and port protection
- Game console port protection
- Digital cameras
- Set-top boxes
- Tablets/notebooks/netbooks

### Agency information

- cURus Recognition file number: E343021
- TUV: R50283843

### Environmental compliance

### Part number/ordering

**PTS08056V035**

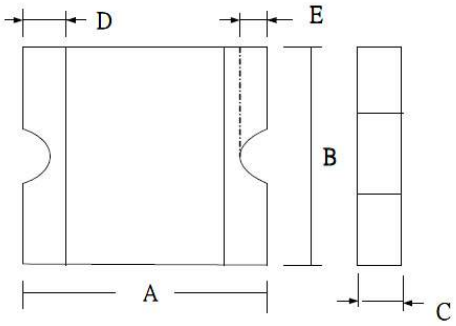
- PT= PTC fuse
- S= Surface mount
- 0805= size code
- 6V= Maximium dc voltage rating
- 035= Ihold rating (035=0.35 A

## Product specifications

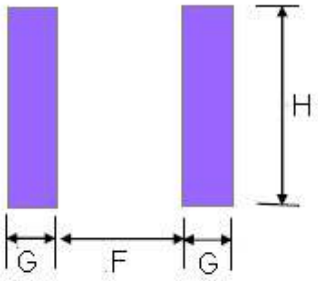
| Part number | Vmax[1] ($V_{dc}$) | Imax[2] (A) | Ihold[3] (A) | Itrip[4] (A) | Pd[5] typical (W) | Time to trip (maximum) (A) | Time to trip (maximum) (seconds) | Resistance[6] Initial ($R_i$) minimum (Ω) | Resistance[6] Post trip ($R_1$) maximum (Ω) | Part marking | Agency information cURus | Agency information TUV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PTS080524V010 | 24 | 100 | 0.10 | 0.30 | 0.5 | 0.5 | 1.5 | 1.00 | 6.00 | D | | |
| PTS08059V020 | 9 | 100 | 0.20 | 0.50 | 0.5 | 8.0 | 0.05 | 0.65 | 3.50 | L | x | x |
| PTS08056V035 | 6 | 100 | 0.35 | 0.75 | 0.5 | 8.0 | 0.10 | 0.25 | 1.20 | T | x | x |
| PTS08056V050 | 6 | 100 | 0.50 | 1.00 | 0.5 | 8.0 | 0.20 | 0.15 | 0.85 | O | x | x |
| PTS08056V075 | 6 | 100 | 0.75 | 1.50 | 0.5 | 8.0 | 0.30 | 0.09 | 0.40 | X | x | x |

1. Vmax: Maximum continuous voltage the device can withstand without damage at 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 when measured one hour post reflow at +23 °C

## Dimensions–mm

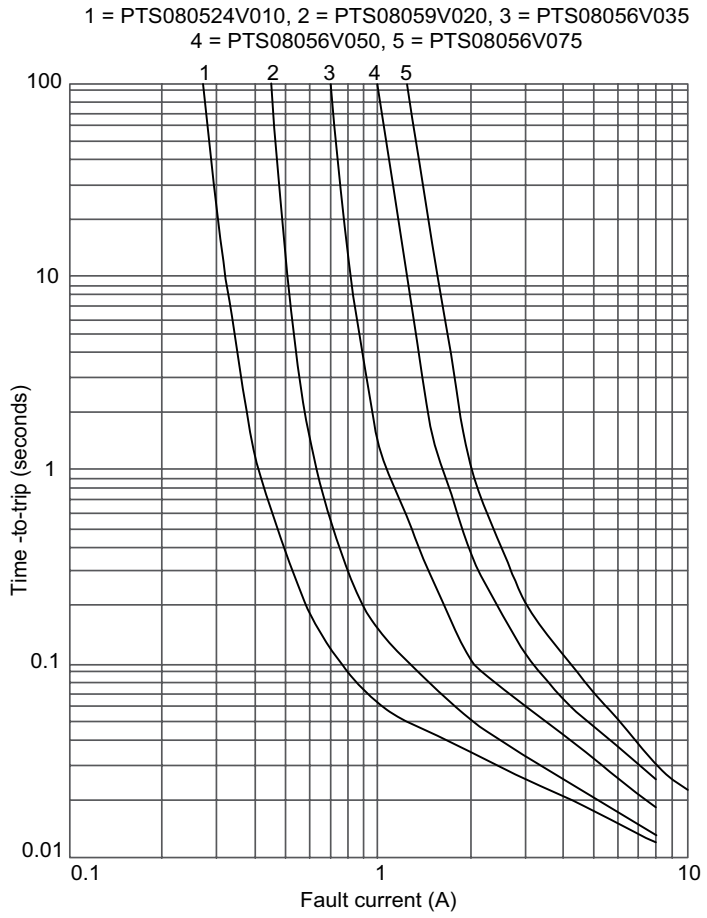



## Recommended pad layout–mm

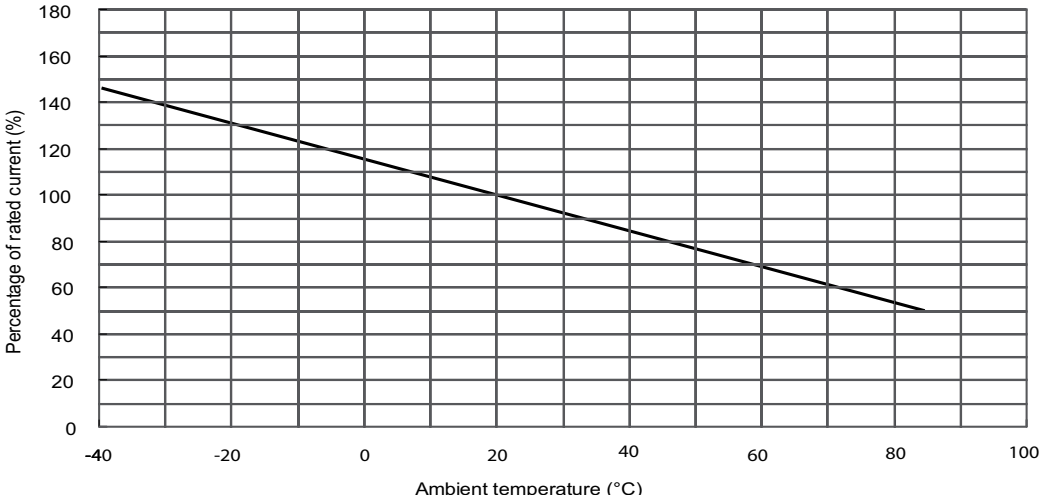



| Part number | A minimum | A maximum | B minimum | B maximum | C minimum | C maximum | D minimum | D maximum | E minimum | E maximum | F | G | H |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PTS080524V010 | 2.00 | 2.20 | 1.20 | 1.50 | 0.4 | 0.85 | 0.15 | 0.55 | 0.05 | 0.45 | 1.2 | 1.0 | 1.5 |
| PTS08059V020 | 2.00 | 2.20 | 1.20 | 1.50 | 0.4 | 0.85 | 0.15 | 0.55 | 0.05 | 0.45 | 1.2 | 1.0 | 1.5 |
| PTS08056V035 | 2.00 | 2.20 | 1.20 | 1.50 | 0.3 | 0.75 | 0.15 | 0.55 | 0.05 | 0.45 | 1.2 | 1.0 | 1.5 |
| PTS08056V050 | 2.00 | 2.20 | 1.20 | 1.50 | 0.3 | 0.85 | 0.15 | 0.55 | 0.05 | 0.45 | 1.2 | 1.0 | 1.5 |
| PTS08056V075 | 2.00 | 2.20 | 1.20 | 1.50 | 0.5 | 0.85 | 0.15 | 0.55 | 0.05 | 0.45 | 1.2 | 1.0 | 1.5 |

**Time to trip curves at +23 ºC**




**Temperature derating curve**

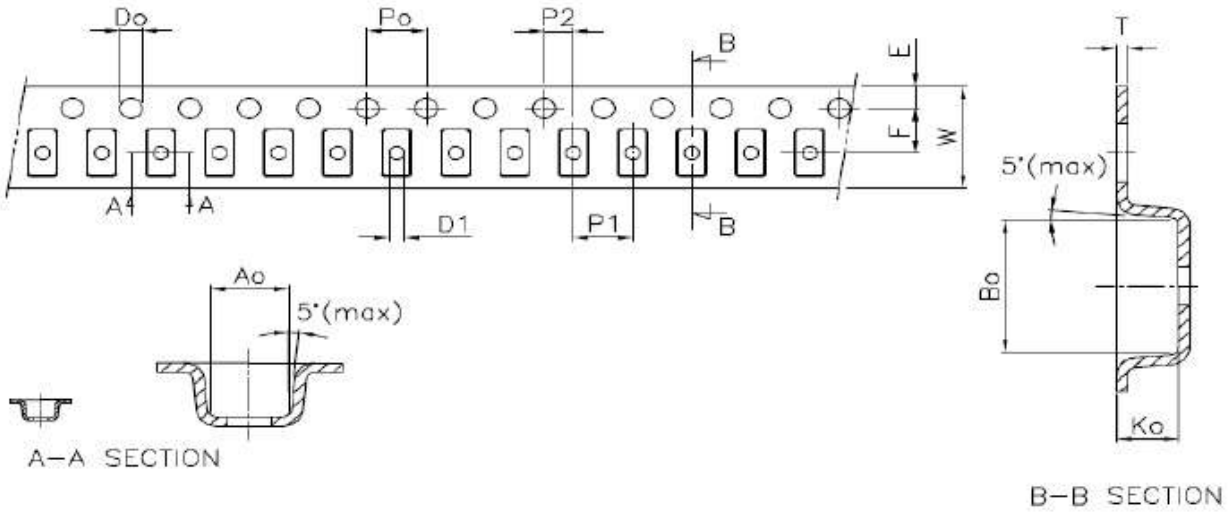


## General specifications

| |
|---|
| 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 |
| Storage duration: 1 year |
| Thermal shock: (20 cycles - 40 °C to + 85 °C) -33% typical resistance change |
| Humidity: +85 °C, 85% relative humidity, 1000 hours ±5% typical resistance change |
| Resistance to solvents: MIL-STD- 202 Method 215 |

## Packaging information-mm

Supplied in tape and reel packaging , 4000 parts per 7.0" diameter reel
PTS080524V010, PTS08059V020, PTS08056V035, PTS08056V050, PTS08056V075




| A0 ±0.10 | B0 ±0.10 | K0 ±0.10 | P0 ±0.10 | P1 ±0.10 | P2 ±0.05 | T ±0.05 | E ±0.10 | F ±0.05 | D0 ±0.10 | D1 Min. | W ±0.10 | 10P0 ±0.20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.6 | 2.3 | 0.9 | 4.0 | 4.0 | 2.0 | 0.25 | 1.75 | 3.5 | 1.5 | 1.0 | 8.1 | 40.0 |

## Solder reflow profile

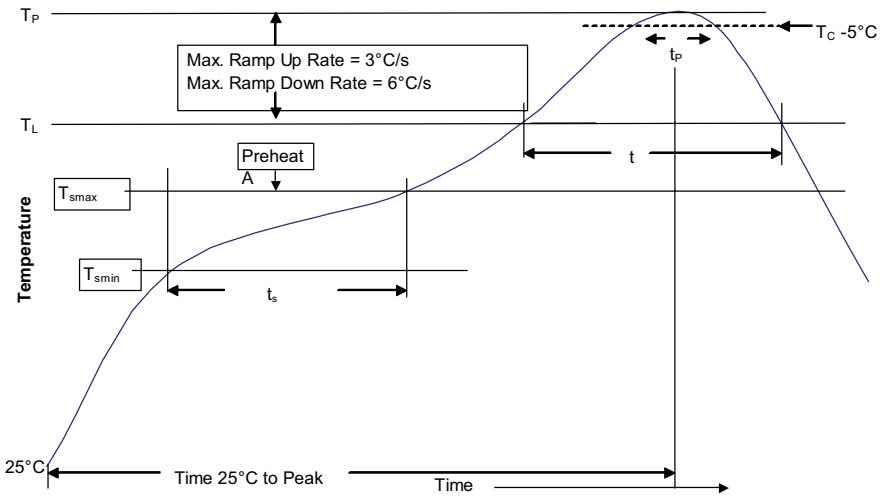



**Table 1 - Standard SnPb solder ($T_C$)**

| 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 mm³ <350 | Volume mm³ 350 - 2000 | Volume mm³ >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)* | | Table 1 | Table 2 |
| 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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