

## Features

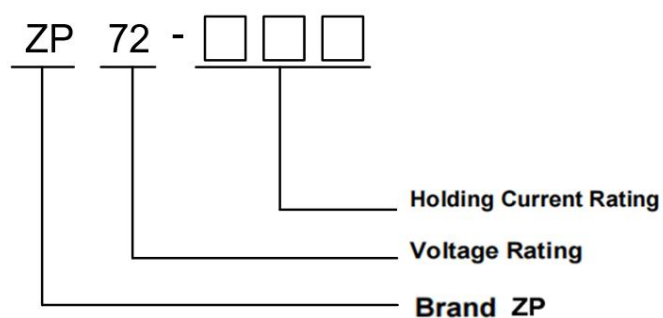
- ◆ Radial leaded devices.
- ◆ Over-current protection
- ◆ High voltage surge capabilities
- ◆ Available in lead-free version.
- ◆ Meets MSL level 1, per J-STD-020
- ◆ Flame retardant epoxy polymer insulating material meets UL94 V-0 requirement
- ◆ Operating Temperature: -40°C~+85°C



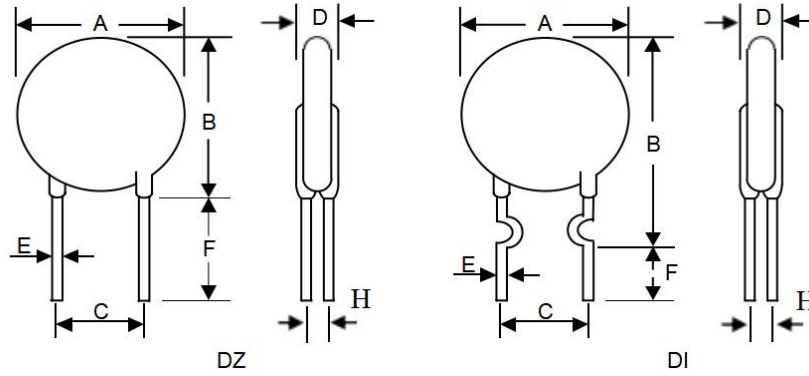
## Applications

- ◆ Computer&peripherals
- ◆ Computers
- ◆ General electronic
- ◆ Load protection on wide range of low voltage power supply

## Part Number Code and Making



## Dimensions (unit:mm)



| Part Number | A    | B    | C    | D    | E    | F    | H    | Style |
|-------------|------|------|------|------|------|------|------|-------|
|             | Max. | Max. | ±0.5 | Max. | Typ. | Min. | ±0.5 |       |
| ZP72-005    | 6.0  | 13.5 | 5.1  | 3.1  | 0.5  | 4.6  | 1.1  | DI    |
| ZP72-010    | 6.0  | 13.5 | 5.1  | 3.1  | 0.5  | 4.6  | 1.1  | DI    |
| ZP72-017    | 7.4  | 13.5 | 5.1  | 3.1  | 0.5  | 4.6  | 1.1  | DI    |
| ZP72-020    | 7.4  | 13.5 | 5.1  | 3.1  | 0.5  | 4.6  | 1.1  | DI    |
| ZP72-025    | 7.4  | 13.5 | 5.1  | 3.1  | 0.5  | 4.6  | 1.1  | DI    |
| ZP72-030    | 7.4  | 15.7 | 5.1  | 3.1  | 0.5  | 4.6  | 1.1  | DI    |
| ZP72-040    | 7.4  | 14.2 | 5.1  | 3.1  | 0.5  | 4.6  | 1.1  | DI    |
| ZP72-050    | 7.4  | 14.5 | 5.1  | 3.1  | 0.5  | 4.6  | 1.1  | DI    |
| ZP72-065    | 9.4  | 16.1 | 5.1  | 3.1  | 0.5  | 4.6  | 1.2  | DI    |
| ZP72-075    | 10.2 | 16.8 | 5.1  | 3.1  | 0.5  | 4.6  | 1.2  | DI    |
| ZP72-090    | 11.2 | 18.0 | 5.1  | 3.1  | 0.5  | 4.6  | 1.2  | DI    |
| ZP72-110    | 16.0 | 16.0 | 5.1  | 3.1  | 0.8  | 7.6  | 1.4  | DZ    |
| ZP72-135    | 14.5 | 18.6 | 5.1  | 3.1  | 0.8  | 7.6  | 1.4  | DZ    |
| ZP72-160    | 16.3 | 20.3 | 5.1  | 3.1  | 0.8  | 7.6  | 1.4  | DZ    |
| ZP72-185    | 17.5 | 20.9 | 5.1  | 3.1  | 0.8  | 7.6  | 1.4  | DZ    |
| ZP72-250    | 21.6 | 24.6 | 10.2 | 3.1  | 0.8  | 7.6  | 1.4  | DZ    |
| ZP72-300    | 24.8 | 27.7 | 10.2 | 3.1  | 0.8  | 7.6  | 1.4  | DZ    |
| ZP72-375    | 27.2 | 30.0 | 10.2 | 3.1  | 0.8  | 7.6  | 1.4  | DZ    |

**Electrical Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)**

| Part Number | $I_H$<br>(A) | $I_T$<br>(A) | $U_{Max}$<br>(V) | $I_{Max}$<br>(A) | $P_{DTYP}$<br>(W) | Time-To-trip  |              | $R_{Min}$<br>( $\Omega$ ) | $R_{1Max}$<br>( $\Omega$ ) |
|-------------|--------------|--------------|------------------|------------------|-------------------|---------------|--------------|---------------------------|----------------------------|
|             |              |              |                  |                  |                   | $I_{Trip}(A)$ | $T_{Max}(S)$ |                           |                            |
| ZP72-005    | 0.05         | 0.10         | 72               | 40               | 0.22              | 0.25          | 15           | 7.30                      | 30.00                      |
| ZP72-010    | 0.10         | 0.20         | 72               | 40               | 0.38              | 0.50          | 12           | 2.50                      | 12.00                      |
| ZP72-017    | 0.17         | 0.34         | 72               | 40               | 0.48              | 0.85          | 12           | 1.80                      | 8.00                       |
| ZP72-020    | 0.20         | 0.40         | 72               | 40               | 0.41              | 1.00          | 10           | 1.50                      | 4.40                       |
| ZP72-025    | 0.25         | 0.50         | 72               | 40               | 0.45              | 1.25          | 10           | 1.10                      | 3.30                       |
| ZP72-030    | 0.30         | 0.60         | 72               | 40               | 0.49              | 1.50          | 10           | 0.80                      | 2.10                       |
| ZP72-040    | 0.40         | 0.80         | 72               | 40               | 0.56              | 2.00          | 10           | 0.50                      | 1.29                       |
| ZP72-050    | 0.50         | 1.00         | 72               | 40               | 0.77              | 2.50          | 12           | 0.45                      | 1.17                       |
| ZP72-065    | 0.65         | 1.30         | 72               | 40               | 0.88              | 3.25          | 12           | 0.30                      | 0.72                       |
| ZP72-075    | 0.75         | 1.50         | 72               | 40               | 0.92              | 3.75          | 12           | 0.25                      | 0.60                       |
| ZP72-090    | 0.90         | 1.80         | 72               | 40               | 0.99              | 4.50          | 12           | 0.20                      | 0.47                       |
| ZP72-110    | 1.10         | 2.20         | 72               | 40               | 1.50              | 5.50          | 15           | 0.15                      | 0.38                       |
| ZP72-135    | 1.35         | 2.70         | 72               | 40               | 1.70              | 6.75          | 15           | 0.12                      | 0.30                       |
| ZP72-160    | 1.60         | 3.20         | 72               | 40               | 1.90              | 8.00          | 20           | 0.09                      | 0.22                       |
| ZP72-185    | 1.85         | 3.70         | 72               | 40               | 2.10              | 9.25          | 20           | 0.08                      | 0.20                       |
| ZP72-250    | 2.50         | 5.00         | 72               | 40               | 2.50              | 12.50         | 25           | 0.05                      | 0.13                       |
| ZP72-300    | 3.00         | 6.00         | 72               | 40               | 2.80              | 15.00         | 25           | 0.04                      | 0.10                       |
| ZP72-375    | 3.75         | 7.50         | 72               | 40               | 3.20              | 18.75         | 25           | 0.03                      | 0.08                       |

**Notes:**

$I_H$  = Hold current: maximum current device will pass without tripping in  $25^{\circ}\text{C}$  still air.

$I_T$  = Trip current minimum current at which the device will trip in  $25^{\circ}\text{C}$  still air.

$U_{Max}$  = Maximum voltage device can withstand without damage at rated current ( $I_{max}$ ).

$I_{max}$  = Maximum fault current device can withstand without damage at rated voltage ( $V_{max}$ ).

$P_{DTYP}$  = Typical Power dissipated from device when in the tripped state at  $25^{\circ}\text{C}$  still air.

$R_{min}$  = Minimum resistance of device in initial (un-soldered) state.

$R_{Max}$  = Maximum resistance of device in initial (un-soldered) state.

$R_{1max}$  = Maximum resistance of device at  $25^{\circ}\text{C}$  measured one hour after tripping or reflow soldering of  $260^{\circ}\text{C}$  for 20 sec.

Ratings and Characteristic Curves ( $T_A=25^\circ\text{C}$  unless otherwise noted)

Figure 1. Thermal Derating Curve

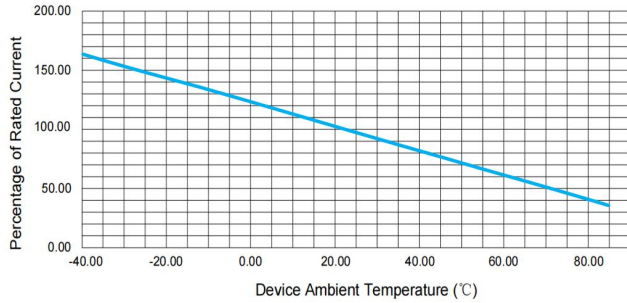
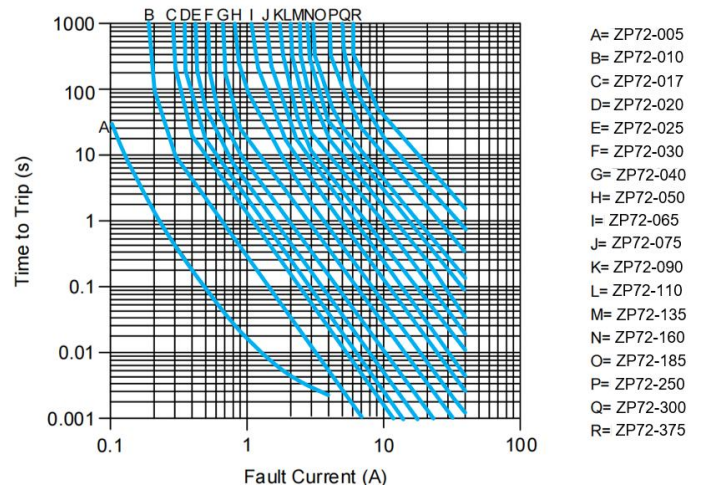


Figure 2. Typical Time-to-Trip Charts



| Part Number | Ambient Operation Temperature |       |      |      |      |      |      |      |      |      |
|-------------|-------------------------------|-------|------|------|------|------|------|------|------|------|
|             | -40°C                         | -20°C | 0°C  | 25°C | 30°C | 40°C | 50°C | 60°C | 70°C | 85°C |
| ZP72-005    | 0.078                         | 0.07  | 0.06 | 0.05 | 0.05 | 0.04 | 0.04 | 0.03 | 0.03 | 0.02 |
| ZP72-010    | 0.16                          | 0.14  | 0.12 | 0.10 | 0.09 | 0.08 | 0.07 | 0.06 | 0.05 | 0.04 |
| ZP72-017    | 0.25                          | 0.23  | 0.20 | 0.17 | 0.15 | 0.14 | 0.12 | 0.11 | 0.09 | 0.07 |
| ZP72-020    | 0.30                          | 0.27  | 0.24 | 0.20 | 0.18 | 0.16 | 0.14 | 0.13 | 0.11 | 0.08 |
| ZP72-025    | 0.38                          | 0.34  | 0.30 | 0.25 | 0.23 | 0.20 | 0.18 | 0.16 | 0.14 | 0.10 |
| ZP72-030    | 0.46                          | 0.41  | 0.36 | 0.30 | 0.27 | 0.24 | 0.22 | 0.19 | 0.16 | 0.12 |
| ZP72-040    | 0.60                          | 0.54  | 0.48 | 0.40 | 0.36 | 0.32 | 0.29 | 0.25 | 0.22 | 0.16 |
| ZP72-050    | 0.75                          | 0.68  | 0.60 | 0.50 | 0.45 | 0.41 | 0.36 | 0.32 | 0.27 | 0.20 |
| ZP72-065    | 1.00                          | 0.88  | 0.77 | 0.65 | 0.59 | 0.53 | 0.47 | 0.41 | 0.35 | 0.26 |
| ZP72-075    | 1.15                          | 1.02  | 0.89 | 0.75 | 0.68 | 0.61 | 0.54 | 0.47 | 0.41 | 0.30 |
| ZP72-090    | 1.40                          | 1.22  | 1.07 | 0.90 | 0.81 | 0.73 | 0.65 | 0.57 | 0.49 | 0.36 |
| ZP72-110    | 1.70                          | 1.50  | 1.31 | 1.10 | 0.99 | 0.89 | 0.79 | 0.69 | 0.59 | 0.44 |
| ZP72-135    | 2.05                          | 1.84  | 1.61 | 1.35 | 1.22 | 1.09 | 0.97 | 0.85 | 0.73 | 0.54 |
| ZP72-160    | 2.45                          | 2.18  | 1.90 | 1.60 | 1.44 | 1.30 | 1.15 | 1.01 | 0.86 | 0.64 |
| ZP72-185    | 2.85                          | 2.52  | 2.20 | 1.85 | 1.67 | 1.50 | 1.33 | 1.17 | 1.00 | 0.74 |
| ZP72-250    | 3.85                          | 3.40  | 2.98 | 2.50 | 2.25 | 2.03 | 1.80 | 1.58 | 1.35 | 1.00 |
| ZP72-300    | 4.65                          | 4.08  | 3.57 | 3.00 | 2.70 | 2.43 | 2.18 | 1.89 | 1.62 | 1.20 |
| ZP72-375    | 5.80                          | 5.10  | 4.46 | 3.75 | 3.38 | 3.04 | 2.70 | 2.36 | 2.03 | 1.50 |

Wave Soldering Parameters

