

# PTR060V

## 60 Volt DC radial leaded, PolyTron™ PTC devices



### Product features

- PolyTron™ radial leaded thru-hole PTC device
- Maximum 60 V
- Current ratings from 0.10 A to 3.75 A
- Fast time-to-trip
- Low resistance
- Halogen free, Lead free, RoHS compliant

### Applications

- Medical equipment
- White goods
- Industrial power transmission
- Telecommunications
- Computers and peripherals
- Consumer and automotive electronics
- Rechargeable battery packs

### Agency information

- cURus: Recognized Card: File E343021 (Ihold 0.1-3.75 A)
- TUV File: J 50194729

### Ordering information/ part number system



**Lead Codes:** TR & BK - Straight Leads, TR1 & BK1 - Kinked Leads

- |                                    |                                  |
|------------------------------------|----------------------------------|
| <b>TR &amp; TR1 On Reels</b>       | <b>BK &amp; BK1 In Poly Bags</b> |
| • 0.10, 0.20-0.40 A - 3000 devices | • 0.10-0.25 A - 1000 devices     |
| • 0.17 - 2,500 A devices           | • 0.30-1.85 A - 500 devices      |
| • 0.50-0.090 A - 2000 devices      | • 2.50-3.75 A - 250 devices      |
| • 1.10-1.85 A - 1200 devices       |                                  |
| • 2.50-3.75 A - 1000 devices       |                                  |

| Specifications |                        |                      |                               |                               |                         |                     |       |                |       |                                  |                    |     |
|----------------|------------------------|----------------------|-------------------------------|-------------------------------|-------------------------|---------------------|-------|----------------|-------|----------------------------------|--------------------|-----|
| Catalog Number | V <sub>max</sub> (Vdc) | I <sub>max</sub> (A) | I <sub>hold</sub> @+23 °C (A) | I <sub>trip</sub> @+23 °C (A) | P <sub>d</sub> Typ. (W) | Time to Trip (Max.) |       | Resistance (Ω) |       |                                  | Agency Information |     |
|                |                        |                      |                               |                               |                         | (A)                 | (sec) | Initial (R)    |       | Post Trip (R <sub>f</sub> ) Max. | cURus              | TUV |
|                |                        |                      |                               |                               |                         |                     |       | Min.           | Max.  |                                  |                    |     |
| PTR060V0010    | 60                     | 40                   | 0.10                          | 0.20                          | 0.38                    | 0.50                | 4.0   | 2.500          | 4.500 | 7.50                             | X                  | X   |
| PTR060V0017    | 60                     | 40                   | 0.17                          | 0.34                          | 0.48                    | 0.85                | 3.0   | 3.300          | 5.210 | 8.00                             | X                  | X   |
| PTR060V0020    | 60                     | 40                   | 0.20                          | 0.40                          | 0.41                    | 1.00                | 2.2   | 1.830          | 2.750 | 4.40                             | X                  | X   |
| PTR060V0025    | 60                     | 40                   | 0.25                          | 0.50                          | 0.45                    | 1.25                | 2.5   | 1.250          | 1.950 | 3.00                             | X                  | X   |
| PTR060V0030    | 60                     | 40                   | 0.30                          | 0.60                          | 0.49                    | 1.50                | 3.0   | 0.880          | 1.330 | 2.10                             | X                  | X   |
| PTR060V0040    | 60                     | 40                   | 0.40                          | 0.80                          | 0.56                    | 2.00                | 3.8   | 0.550          | 0.860 | 1.29                             | X                  | X   |
| PTR060V0050    | 60                     | 40                   | 0.50                          | 1.00                          | 0.77                    | 2.50                | 4.0   | 0.500          | 0.770 | 1.17                             | X                  | X   |
| PTR060V0065    | 60                     | 40                   | 0.65                          | 1.30                          | 0.88                    | 3.25                | 5.3   | 0.310          | 0.480 | 0.72                             | X                  | X   |
| PTR060V0075    | 60                     | 40                   | 0.75                          | 1.50                          | 0.92                    | 3.75                | 6.3   | 0.250          | 0.400 | 0.60                             | X                  | X   |
| PTR060V0090    | 60                     | 40                   | 0.90                          | 1.80                          | 0.99                    | 4.50                | 7.2   | 0.200          | 0.310 | 0.47                             | X                  | X   |
| PTR060V0110    | 60                     | 40                   | 1.10                          | 2.20                          | 1.50                    | 5.50                | 8.2   | 0.150          | 0.250 | 0.38                             | X                  | X   |
| PTR060V0135    | 60                     | 40                   | 1.35                          | 2.70                          | 1.70                    | 6.75                | 9.6   | 0.120          | 0.190 | 0.30                             | X                  | X   |
| PTR060V0160    | 60                     | 40                   | 1.60                          | 3.20                          | 1.90                    | 8.00                | 11.4  | 0.090          | 0.140 | 0.22                             | X                  | X   |
| PTR060V0185    | 60                     | 40                   | 1.85                          | 3.70                          | 2.10                    | 9.25                | 12.6  | 0.080          | 0.120 | 0.19                             | X                  | X   |
| PTR060V0250    | 60                     | 40                   | 2.50                          | 5.00                          | 2.50                    | 12.50               | 15.6  | 0.050          | 0.080 | 0.13                             | X                  | X   |
| PTR060V0300    | 60                     | 40                   | 3.00                          | 6.00                          | 2.80                    | 15.00               | 19.8  | 0.040          | 0.060 | 0.10                             | X                  | X   |
| PTR060V0375    | 60                     | 40                   | 3.75                          | 7.50                          | 3.20                    | 18.75               | 24.0  | 0.030          | 0.050 | 0.08                             | X                  | X   |

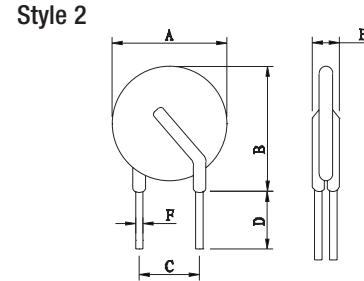
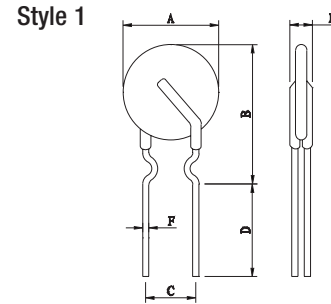
Notes: I<sub>hold</sub> – Hold current: Maximum current device will pass without interruption in +23 °C still air.  
 I<sub>trip</sub> – Trip current: Minimum current that will switch the device from low resistance to high resistance in +23 °C still air.  
 V<sub>max</sub>: Maximum continuous voltage device can withstand without damage at rated current.  
 I<sub>max</sub>: Maximum fault current device can withstand without damage at rated voltage.  
 P<sub>d</sub>: Power dissipated from device when in the tripped state in +23 °C still air.  
 R<sub>f</sub> (min.): Minimum resistance of device as supplied at +23 °C unless otherwise specified.  
 R<sub>f</sub> (max.): Maximum resistance of device as supplied at +23 °C unless otherwise specified.  
 R<sub>f</sub> (max.): Maximum resistance of device when measured one hour post reflow (SMD) or one hour post trip (radial-leaded device) at +23 °C unless otherwise specified.



Powering Business Worldwide

Dimensions - mm

| Part Number | A Max. | B Max Lead Type |             | C        | D Min. | E Max. | F        | Figure/Lead Style |          |
|-------------|--------|-----------------|-------------|----------|--------|--------|----------|-------------------|----------|
|             |        | Straight (-TR)  | Kink (-TR1) |          |        |        |          | Straight TR       | Kink TR1 |
| PTR060V0010 | 7.4    | 12.7            | 12.7        | 5.0±0.8  | 7.6    | 3.5    | 0.5±0.02 | 2                 | 1        |
| PTR060V0017 | 7.4    | 12.7            | 12.7        | 5.0±0.8  | 7.6    | 3.5    | 0.5±0.02 | 2                 | 1        |
| PTR060V0020 | 7.4    | 12.2            | 12.2        | 5.0±0.8  | 7.6    | 3.5    | 0.5±0.02 | 2                 | 1        |
| PTR060V0025 | 7.4    | 12.7            | 12.7        | 5.0±0.8  | 7.6    | 3.5    | 0.5±0.02 | 2                 | 1        |
| PTR060V0030 | 7.4    | 13.0            | 13.0        | 5.0±0.8  | 7.6    | 3.5    | 0.5±0.02 | 2                 | 1        |
| PTR060V0040 | 7.6    | 13.5            | 13.5        | 5.0±0.8  | 7.6    | 3.5    | 0.5±0.02 | 2                 | 1        |
| PTR060V0050 | 7.6    | 13.7            | 13.7        | 5.0±0.8  | 7.6    | 3.5    | 0.5±0.02 | 2                 | 1        |
| PTR060V0065 | 9.7    | 14.5            | 14.5        | 5.0±0.8  | 7.6    | 3.5    | 0.5±0.02 | 2                 | 1        |
| PTR060V0075 | 10.4   | 15.2            | 15.2        | 5.0±0.8  | 7.6    | 3.5    | 0.5±0.02 | 2                 | 1        |
| PTR060V0090 | 11.7   | 15.7            | 15.7        | 5.0±0.8  | 7.6    | 3.5    | 0.5±0.02 | 2                 | 1        |
| PTR060V0110 | 13.0   | 18.0            | 18.0        | 5.0±0.8  | 7.6    | 3.5    | 0.8±0.02 | 2                 | 1        |
| PTR060V0135 | 14.5   | 19.6            | 19.6        | 5.0±0.8  | 7.6    | 3.5    | 0.8±0.02 | 2                 | 1        |
| PTR060V0160 | 16.3   | 21.3            | 21.3        | 5.0±0.8  | 7.6    | 3.5    | 0.8±0.02 | 2                 | 1        |
| PTR060V0185 | 17.8   | 22.9            | 22.9        | 5.0±0.8  | 7.6    | 3.5    | 0.8±0.02 | 2                 | 1        |
| PTR060V0250 | 21.3   | 26.4            | 26.4        | 10.0±0.8 | 7.6    | 3.5    | 0.8±0.02 | 2                 | 1        |
| PTR060V0300 | 24.9   | 30.0            | 30.0        | 10.0±0.8 | 7.6    | 3.5    | 0.8±0.02 | 2                 | 1        |
| PTR060V0375 | 28.4   | 33.5            | 33.5        | 10.0±0.8 | 7.6    | 3.5    | 0.8±0.02 | 2                 | 1        |



Packaging/Taping Specifications

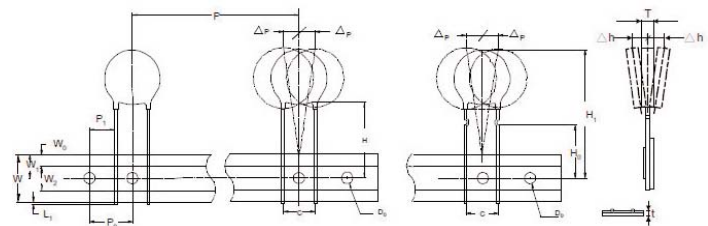
| Description  | IEC Mark       | Dimension (mm) | Tolerance (mm) |
|--|----------------|----------------|----------------|
| Sprocket hole pitch P0 12.7 0.3                                |                |                |                |
| Ordinate to adjacent component lead<br>PTR060V0010~PTR060V0090 | P <sub>1</sub> | 3.6            | ±1.0           |
| Ordinate to adjacent component lead<br>PTR060V0110~PTR060V0185 | P <sub>1</sub> | 3.45           | ±1.0           |
| Ordinate to adjacent component lead<br>PTR060V0250~PTR060V0300 | P <sub>1</sub> | 7.3            | ±1.0           |
| Device pitch PTR060V0010~PTR060V0090                           | P              | 12.7           | ±1.0           |
| Device pitch PTR060V0110~PTR060V0300                           | P              | 25.4           | ±1.0           |
| Device pitch PTR060V0375                                       | P              | 38.1           | ±1.0           |
| Lead spacing   | C              | *              | --             |
| Carrier tape width   | W              | 18             | ±1.0           |
| Top distance between tape edges                                | W <sub>0</sub> | 3.0            | Max.           |
| Hold-down tape width   | W <sub>1</sub> | 12             | ±1.0           |
| Sprocket hole position   | W <sub>2</sub> | 9.0            | +0.75/-0.5     |
| Abscissa to top PTR060V0010~PTR060V0090                        | H <sub>1</sub> | 32.2           | Max.           |
| Abscissa to top PTR060V0110~PTR060V0300                        | H <sub>1</sub> | 47.5           | Max.           |
| Abscissa to plane (straight lead)                              | H              | 18.0           | +2/-0          |
| Abscissa to plane (kinked lead)                                | H <sub>0</sub> | 16.0           | ±0.5           |
| Sprocket hole diameter   | D <sub>0</sub> | 4              | ±0.2           |
| Lead protrusion  | L <sub>1</sub> | 1              | Max.           |
| Tape thickness   | t              | 0.9            | Max.           |
| Body lateral deviation   | Δh             | 0              | ±1.0           |
| Body tape plane deviation                                      | Δp             | 0              | ±1.3           |
| Reel width   | W <sub>3</sub> | 56             | Max.           |
| Reel diameter  |                | 340            | ±10            |
| Arbor hole diameter  | n <sub>0</sub> | 31             | ±1             |
| Core diameter  | n              | 80             | Min.           |

\* See Dimensions table.

Figure 1 - PTR060V0010-PTR060V0185



Figure 2 - PTR060V0250-PTR060V0375



Reel specification



Time-to-Trip Curves at +23 °C



Thermal Derating Curve

