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

PT R 060V 0160 -TR

- PolyTron™ PTC Device Series
- Radial Leaded
- Maximum Voltage
- Current Holding (I_{hold})
- Tape and Reel Packaging and Lead Type Code

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

TR & TR1 On Reels

- 0.10, 0.20-0.40 A - 3000 devices
- 0.17 - 2,500 A devices
- 0.50-0090 A - 2000 devices
- 1.10-1.85 A - 1200 devices
- 2.50-3.75 A - 1000 devices

BK & BK1 In Poly Bags

- 0.10-0.25 A - 1000 devices
- 0.30-1.85 A - 500 devices
- 2.50-3.75 A - 250 devices

Specifications

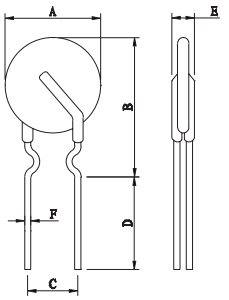
Catalog Number	V_{max} (Vdc)	I_{max} (A)	I_{hold} @+23 °C (A)	I_{trip} @+23 °C (A)	P_d Typ. (W)	Time to Trip (Max.)		Resistance (Ω)			Agency Information	
								Initial (R_i)		Post Trip (R_1)		
						(A)	(sec)	Min.	Max.	Max.	cURus	TUV
PTR060V0010	60	40	0.10	0.20	0.38	0.50	4.0	2.500	4.500	7.50	X	X
PTR060V0017	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_{hold} – Hold current: Maximum current device will pass without interruption in +23 °C still air.
I_{trip} – Trip current: Minimum current that will switch the device from low resistance to high resistance in +23 °C still air.
V_{max}: Maximum continuous voltage device can withstand without damage at rated current.
I_{max}: Maximum fault current device can withstand without damage at rated voltage.
P_d: Power dissipated from device when in the tripped state in +23 °C still air.
R_i (min.): Minimum resistance of device as supplied at +23 °C unless otherwise specified.
R_i (max.): Maximum resistance of device as supplied at +23 °C unless otherwise specified.
R_1(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.

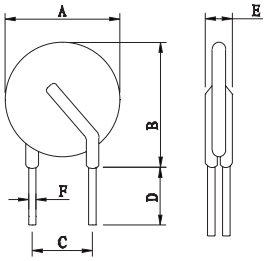
Dimensions - mm

Part Number	A Max.	B Max Lead Type Straight (-TR)	B Max Lead Type Kink (-TR1)	C	D Min.	E Max.	F	Figure/ Lead Style Straight TR	Figure/ Lead Style 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

Style 1



Style 2



Packaging/Taping Specifications

Description	IEC Mark	Dimension (mm)	Tolerance (mm)
Sprocket hole pitch P0 12.7 0.3			
Ordinate to adjacent component lead PTR060V0010~PTR060V0090	P_1	3.6	±1.0
Ordinate to adjacent component lead PTR060V0110~PTR060V0185	P_1	3.45	±1.0
Ordinate to adjacent component lead PTR060V0250~PTR060V0300	P_1	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_0	3.0	Max.
Hold-down tape width	W_1	12	±1.0
Sprocket hole position	W_2	9.0	+0.75/-0.5
Abscissa to top PTR060V0010~PTR060V0090	H_1	32.2	Max.
Abscissa to top PTR060V0110~PTR060V0300	H_1	47.5	Max.
Abscissa to plane (straight lead)	H	18.0	+2/-0
Abscissa to plane (kinked lead)	H_0	16.0	±0.5
Sprocket hole diameter	D_0	4	±0.2
Lead protrusion	L_1	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_3	56	Max.
Reel diameter		340	±10
Arbor hole diameter	n_0	31	±1
Core diameter	n	80	Min.

* See Dimensions table.

Figure 1 - PTR060V0010-PTR060V0185

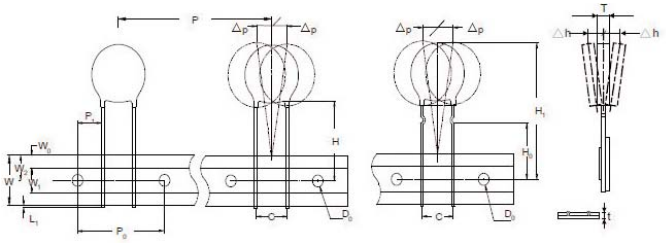
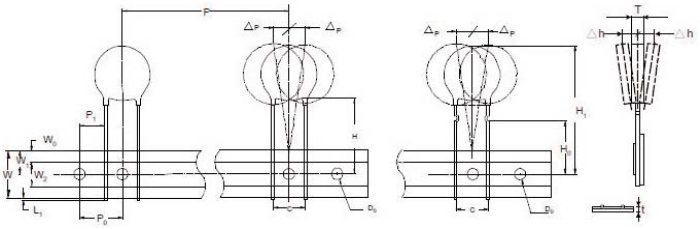
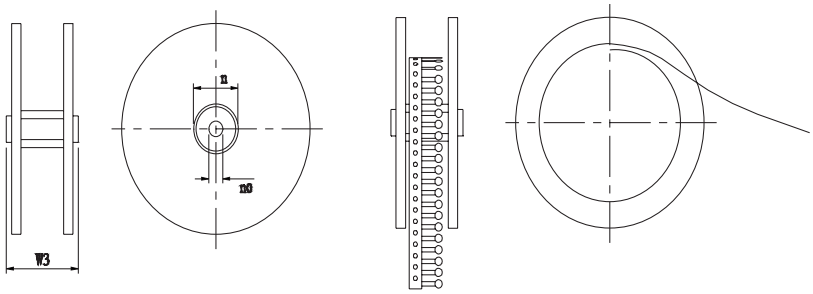


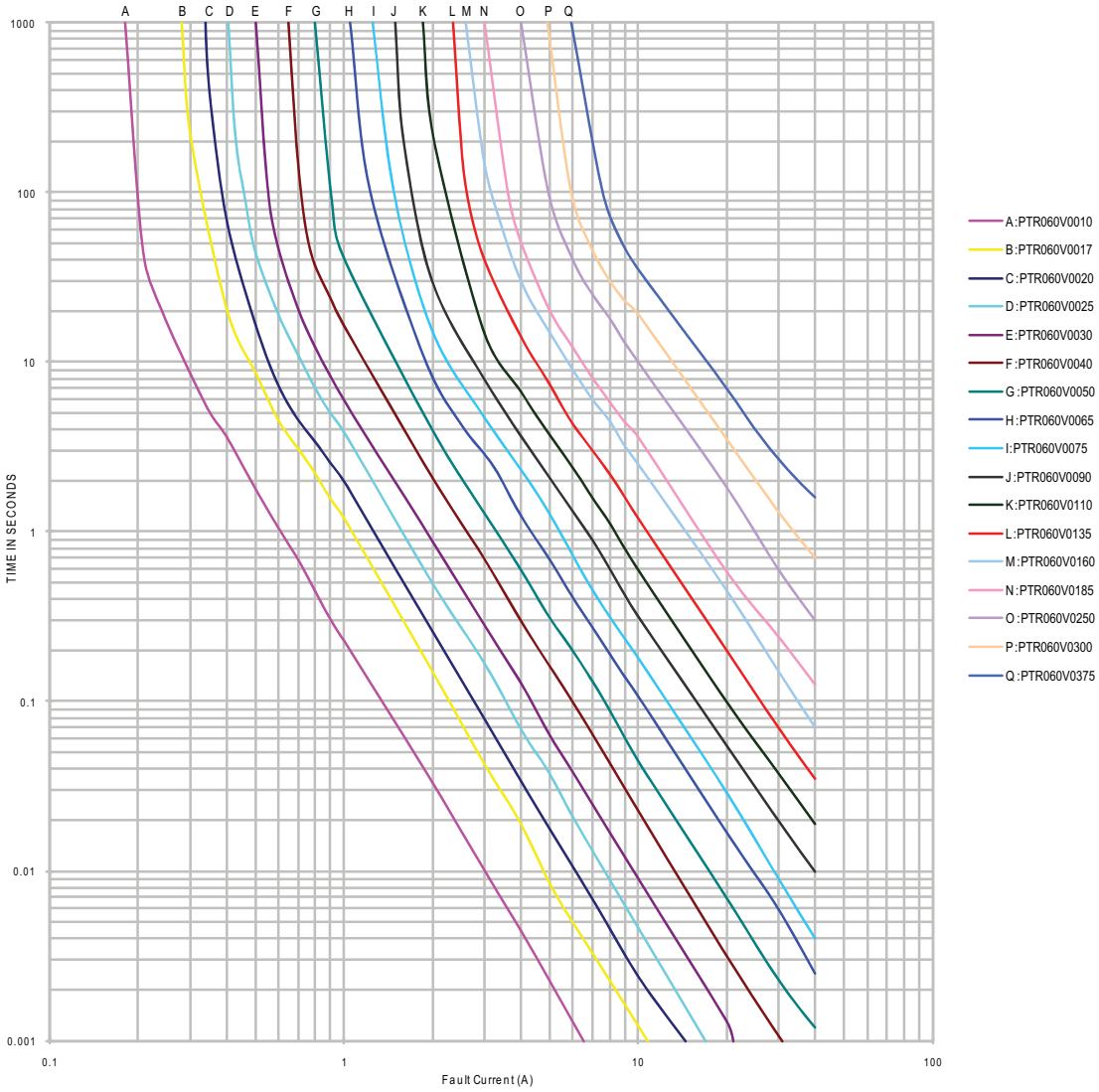
Figure 2 - PTR060V0250-PTR060V0375



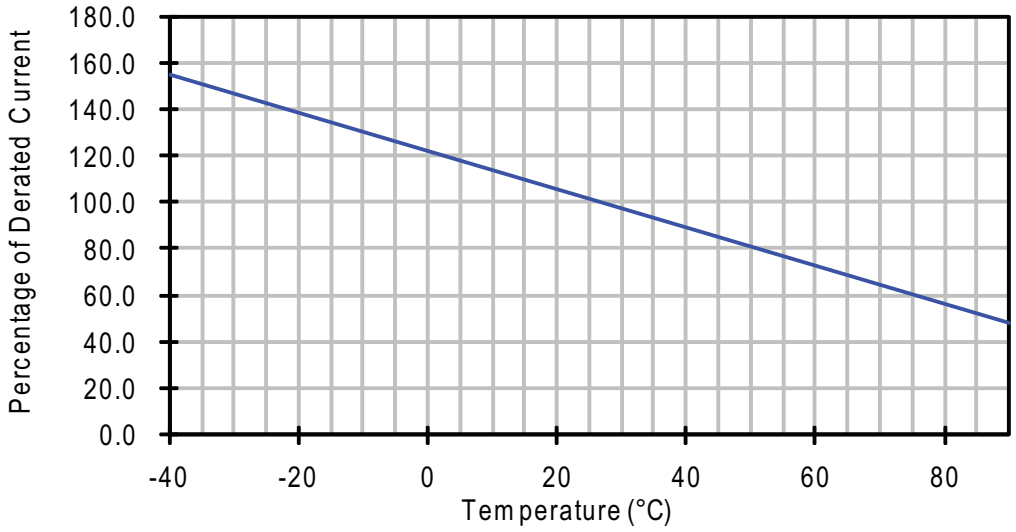
Reel specification



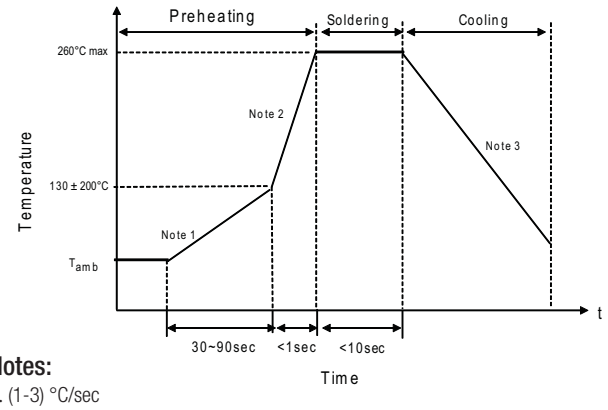
Time-to-Trip Curves at +23 °C



Thermal Derating Curve



Recommended Wave Solder Profile.



Notes:

1. (1-3) °C/sec
2. Approximately 200 °C/sec
3. 5 °C/sec Maximum

Environmental Specifications	
Characteristic	**Value**
Operating Temperature Range	-40 °C to +85 °C
Surface Temperature Trip State	+125 °C max.
Thermal Shock	+85 °C to -40 °C, 10 cycles, 5% typical resistance change
Solvent Resistance	MIL-STD-202 Method 215, no change
Humidity Age Test	+85 °C, 85% R.H., 1000 hours ±5% typical resistance change. Specified temperature (+23 °C ± 3 °C)
Storage Temperature Range	-10 °C to +40 °C
Storage Duration	One year
Storage Relative Humidity	≤75%
Storage Conditions	Keep away from corrosive atmosphere and sunlight

Recommended Reworking Conditions with Soldering Iron

- Soldering Iron Tip Temperature: +360 °C max.
- Solder Time: 3 seconds max.
- Distance from Thermistor: 2 mm min.

Material Composition

- Lead material:
  - PTR060V0010-PTR060V0040 Tin-plated copper clad steel
  - PTR060V0050-PTR060V0375 Tin-plated copper
- Insulating material: Cured epoxy resin meeting UL 94V0 requirements

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