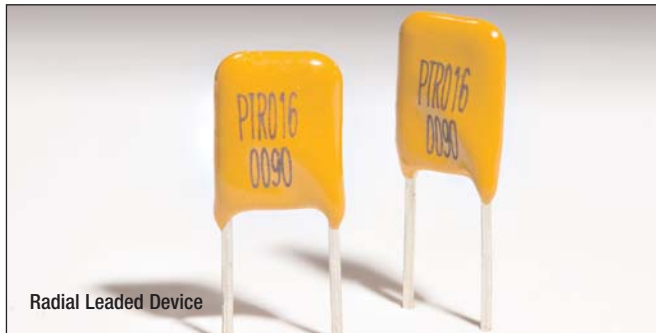


16 Volt DC Radial Leaded, PolyTron™ PTC Devices

PolyTron™ PTR016V Series



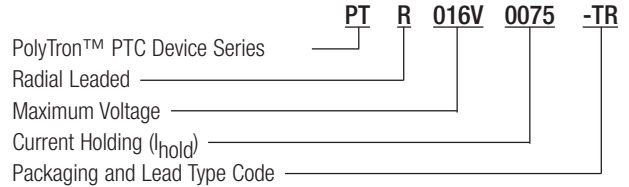
Description

- PolyTron™ radial leaded thru-hole PTC device
- Maximum 16 volts
- Current ratings from 0.75 to 15 amps
- Fast time-to-trip
- Low resistance
- Halogen free
- Lead free
- RoHS compliant

Agency Information

- cURus: Recognized Card: File E343021 (I_{hold} 3A-15A)
- TUV File: J 50194729

Part Number System/Ordering



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

TR & TR1 On Reels

- 0.75-1.85A - 3000 devices
- 2.5-4A - 2500 devices
- 5-7A - 1500 devices
- 8-15A - 1000 devices

BK & BK1 In Poly Bags

- 0.75-1.60A - 1000 devices
- 1.85-9.00A - 500 devices
- 10.00-15.00A - 250 devices

Applications

- Medical equipment
- Telecommunications
- White goods
- Computers and peripherals

Specifications

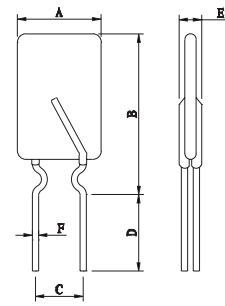
Catalog Number	V _{max} (Vdc)	I _{max} (Amps)	I _{hold} @23°C (Amps)	I _{trip} @23°C (Amps)	P _d Typ. (W)	Time to Trip (Max.)		Resistance (Ω)			Agency Information	
						(Amps)	(Sec)	Initial (R _i)		Post Trip (R ₁) Max.	cURus	TUV
								Min.	Max.			
PTR016V0075	16	40	0.75	1.50	0.30	8.00	0.40	0.110	0.175	0.230		X
PTR016V0090	16	40	0.90	1.80	0.60	8.00	1.20	0.070	0.120	0.180		X
PTR016V0110	16	40	1.10	2.20	0.70	8.00	2.30	0.050	0.095	0.140		X
PTR016V0120	16	40	1.20	2.40	0.60	8.00	0.50	0.065	0.0975	0.140		X
PTR016V0135	16	40	1.35	2.70	0.80	8.00	4.50	0.040	0.074	0.120		X
PTR016V0155	16	40	1.55	3.10	0.70	8.00	0.60	0.043	0.0705	0.100		X
PTR016V0160	16	40	1.60	3.20	0.90	8.00	9.00	0.030	0.061	0.110		X
PTR016V0185	16	40	1.85	3.70	1.00	8.00	10.00	0.030	0.051	0.090		X
PTR016V0250	16	40	2.50	5.00	1.20	8.00	40.00	0.020	0.036	0.070		X
PTR016V0300	16	100	3.00	5.10	2.30	15.00	1.00	0.038	0.065	0.098	X	X
PTR016V0400	16	100	4.00	6.80	2.40	20.00	1.70	0.021	0.038	0.060	X	X
PTR016V0500	16	100	5.00	8.50	2.60	25.00	2.00	0.010	0.023	0.034	X	X
PTR016V0600	16	100	6.00	10.20	2.80	30.00	3.30	0.006	0.018	0.028	X	X
PTR016V0700	16	100	7.00	11.90	3.00	35.00	3.50	0.006	0.013	0.020	X	X
PTR016V0800	16	100	8.00	13.60	3.00	40.00	5.00	0.005	0.011	0.018	X	X
PTR016V0900	16	100	9.00	15.30	3.30	45.00	5.50	0.005	0.009	0.014	X	X
PTR016V1000	16	100	10.00	17.00	3.60	50.00	6.00	0.004	0.007	0.010	X	X
PTR016V1100	16	100	11.00	18.70	3.70	55.00	7.00	0.003	0.006	0.009	X	X
PTR016V1200	16	100	12.00	20.40	4.20	60.00	7.50	0.003	0.006	0.009	X	X
PTR016V1300	16	100	13.00	22.10	4.60	65.00	8.50	0.002	0.006	0.008	X	X
PTR016V1400	16	100	14.00	23.80	4.60	70.00	9.00	0.002	0.005	0.007	X	X
PTR016V1500	16	100	15.00	25.50	4.60	75.00	10.00	0.002	0.005	0.007	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.
R₁(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.

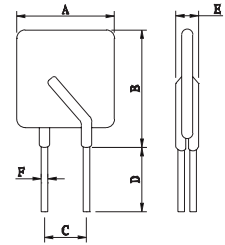
Dimensions - mm

Part Number	A Max.	B Max Lead Type		C	D Min.	E Max.	F	Figure/Lead Style	
		Straight (-TR)	Kink (-TR1)					Straight TR	Kink TR1
PTR016V0075	7.0	-	11.4	5.0±0.8	7.6	3.1	0.5±0.02	-	3
PTR016V0090	7.4	12.2	12.2	5.0±0.8	7.6	3.1	0.5±0.02	2	1
PTR016V0110	7.4	14.2	14.2	5.0±0.8	7.6	3.1	0.5±0.02	2	1
PTR016V0120	7.0	-	11.7	5.0±0.8	7.6	3.1	0.5±0.02	-	3
PTR016V0135	8.9	13.5	13.5	5.0±0.8	7.6	3.1	0.5±0.02	2	1
PTR016V0155	6.9	-	11.7	5.0±0.8	7.6	3.1	0.5±0.02	-	3
PTR016V0160	8.9	15.2	15.2	5.0±0.8	7.6	3.1	0.5±0.02	2	1
PTR016V0185	10.2	15.7	15.7	5.0±0.8	7.6	3.1	0.5±0.02	2	1
PTR016V0250	11.4	18.3	20.5	5.0±0.8	7.6	3.1	0.5±0.02	2	1
PTR016V0300	7.1	11.0	14.0	5.0±0.8	7.6	3.1	0.8±0.02	2	1
PTR016V0400	8.9	12.8	14.8	5.0±0.8	7.6	3.1	0.8±0.02	2	1
PTR016V0500	10.4	14.3	16.0	5.0±0.8	7.6	3.1	0.8±0.02	2	1
PTR016V0600	10.7	17.1	19.0	5.0±0.8	7.6	3.1	0.8±0.02	2	1
PTR016V0700	11.2	19.7	22.0	5.0±0.8	7.6	3.1	0.8±0.02	2	1
PTR016V0800	12.7	20.9	23.0	5.0±0.8	7.6	3.1	0.8±0.02	2	1
PTR016V0900	14.0	21.9	24.0	5.0±0.8	7.6	3.1	0.8±0.02	2	1
PTR016V1000	16.5	25.2	28.0	5.0±0.8	7.6	3.1	0.8±0.02	2	1
PTR016V1100	17.5	26.0	29.0	5.0±0.8	7.6	3.1	0.8±0.02	2	1
PTR016V1200	17.5	28.0	31.0	10.0±0.8	7.6	3.1	1.0±0.02	2	1
PTR016V1300	21.6	29.2	32.0	10.0±0.8	7.6	3.1	1.0±0.02	2	1
PTR016V1400	23.5	27.9	30.0	10.0±0.8	7.6	3.1	1.0±0.02	2	1
PTR016V1500	25.1	29.0	32.0	10.0±0.8	7.6	3.1	1.0±0.02	2	1

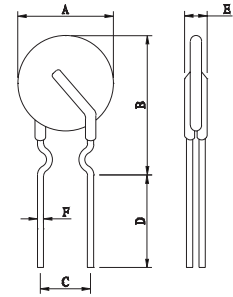
Style 1



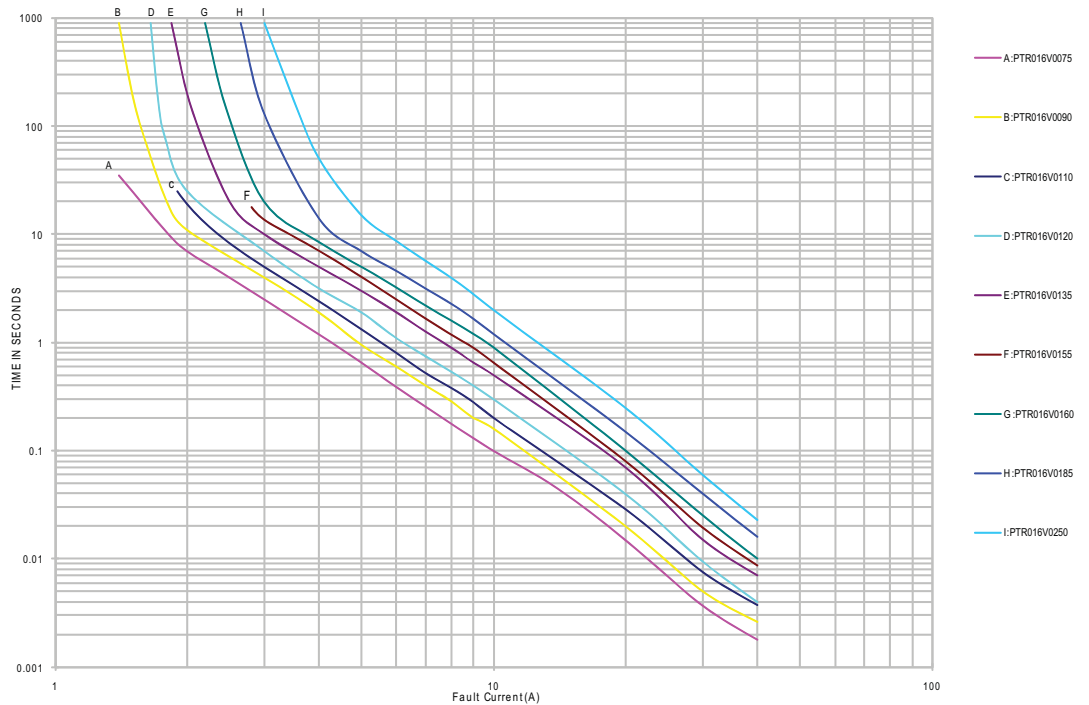
Style 2



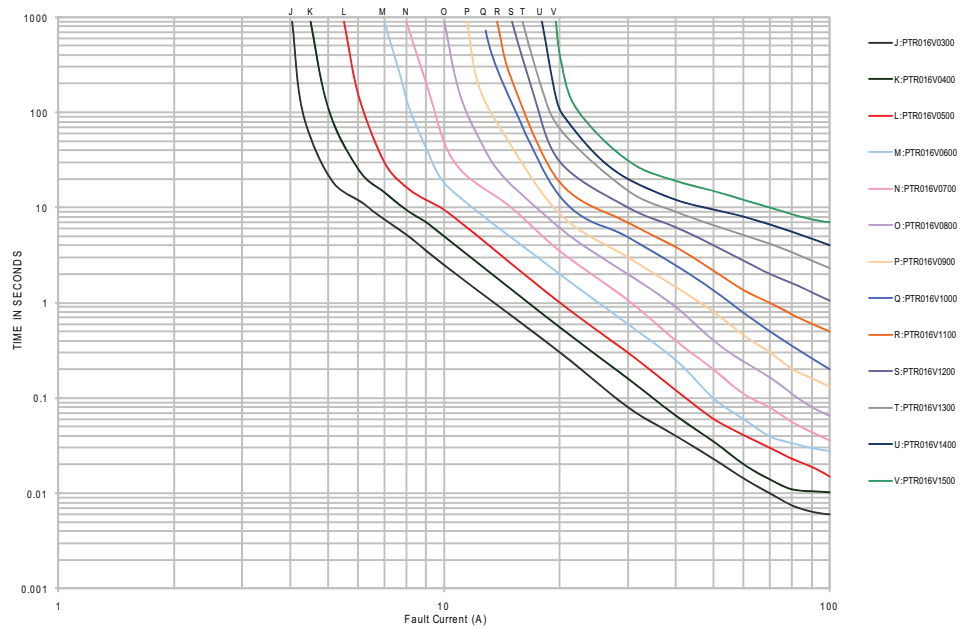
Style 3



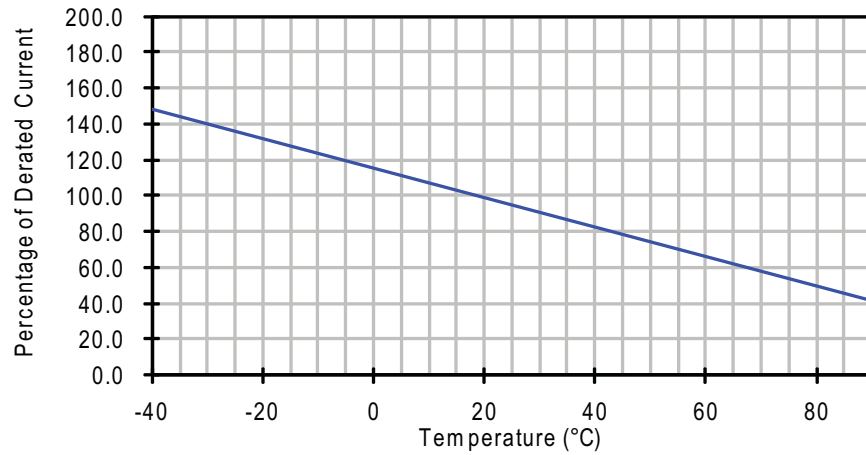
Time-to-Trip Curves at 23°C - 0.75-2.5A



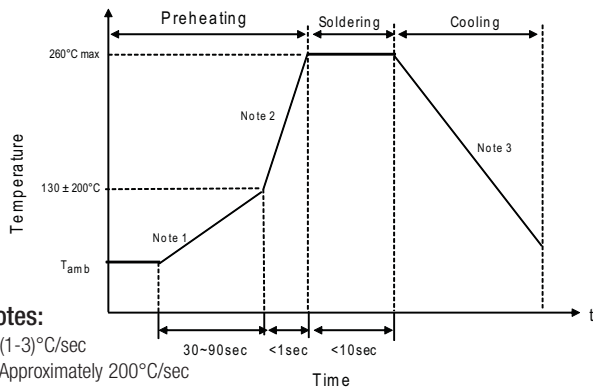
Time-to-Trip Curves at 23°C - 3.0-15A



Thermal Derating Curve



Recommended Wave Solder Profile



Notes:

1. $1(-3)^\circ\text{C}/\text{sec}$
2. Approximately $200^\circ\text{C}/\text{sec}$
3. $5^\circ\text{C}/\text{sec}$ Maximum

Recommended Reworking Conditions with Soldering Iron

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

Environmental Specifications

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

Material Composition

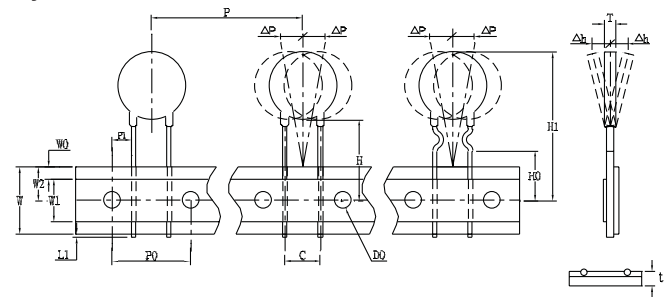
- Lead material:
 - PTR016V0075-PTR016V0250 Tin-plated copper clad steel
 - PTR016V0300-PTR016V1500 Tin-plated copper
- Insulating material: Cured epoxy resin meeting UL 94V0 requirements

Packaging/Taping Specifications

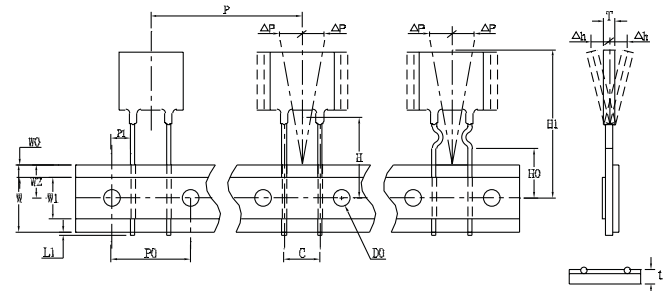
Description	IEC Mark	Dimension (mm)	Tolerance (mm)
Sprocket hole pitch	P ₀	12.7	±0.3
Ordinate to adjacent component lead:			
PTR016V0075~PTR016V0250	P ₁	3.6	±1.0
PTR016V0300~PTR016V1100	P ₁	4.5	±1.0
PTR016V1200~PTR016V1500	P ₁	7.2	±1.0
Device pitch:			
PTR016V0075~PTR016V0600	P	12.7	±1.0
PTR016V0700~PTR016V1400	P	25.4	±1.0
PTR016V1500	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:			
PTR016V0075~PTR016V0600	H ₁	32.2	Max.
PTR016V0700~PTR016V1500	H ₁	47.5	Max.
Abscissa to plane			
(straight lead)	H	18.0	+2/-0
(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	Δ _h	0	±1.0
Body tape plane deviation	Δ _p	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.

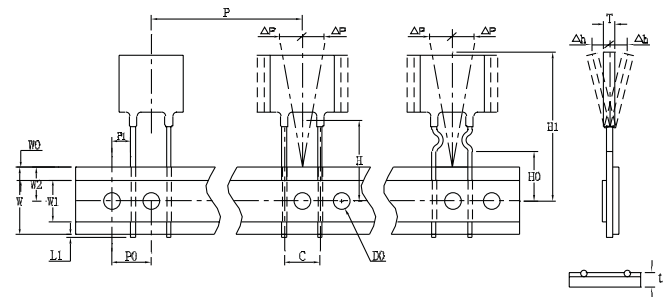
Style 1 - PTR016V0075, PTR016V0120, PTR016V0155



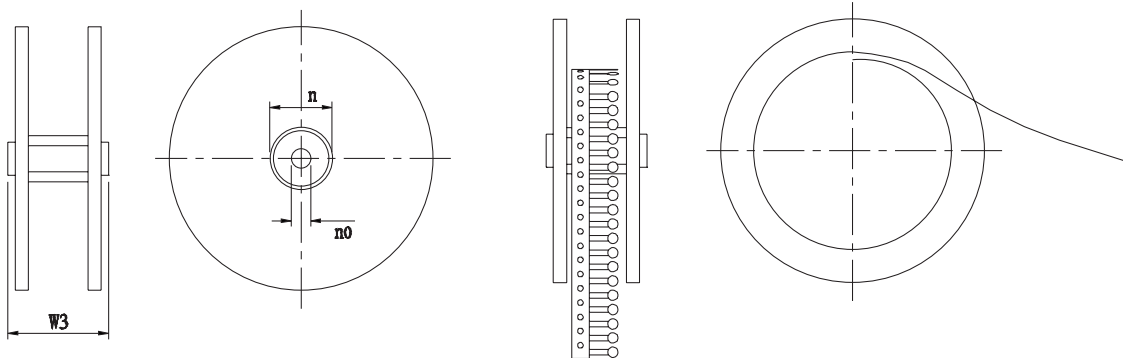
Style 2 - PTR016V0090, PTR016V0110, PTR016V0135, PTR016V0160~PTR016V1000



Style 3 - PTR016V1200~PTR016V1500



Reel Specifications



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