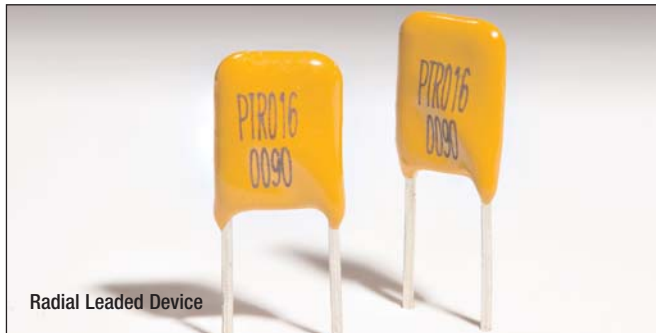


16 Volt DC Radial Leaded, PolyTron™ PTC Devices

PolyTron™ PTR016V Series



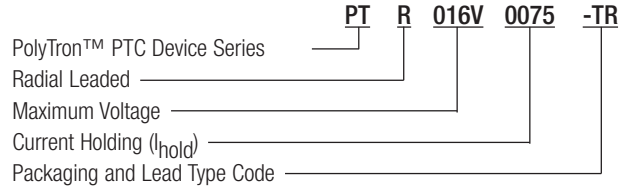
Description

- 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

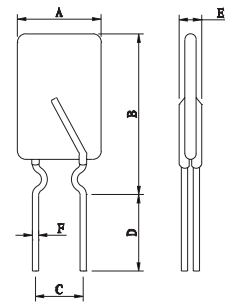
Catalog Number	V _{max} (Vdc)	I _{max} (Amps)	I _{hold} @23°C (Amps)	I _{trip} @23°C (Amps)	P _d Typ. (W)	Time to Trip (Max.)		Resistance (Ω)			Agency Information	
						(Amps)	(Sec)	Initial (R _i)		Post Trip (R ₁) Max.	cURus	TUV
								Min.	Max.			
PTR016V0075	16	40	0.75	1.50	0.30	8.00	0.40	0.110	0.175	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.

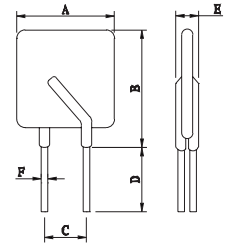
Dimensions - mm

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

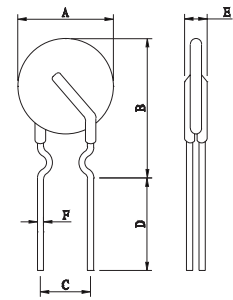
Style 1



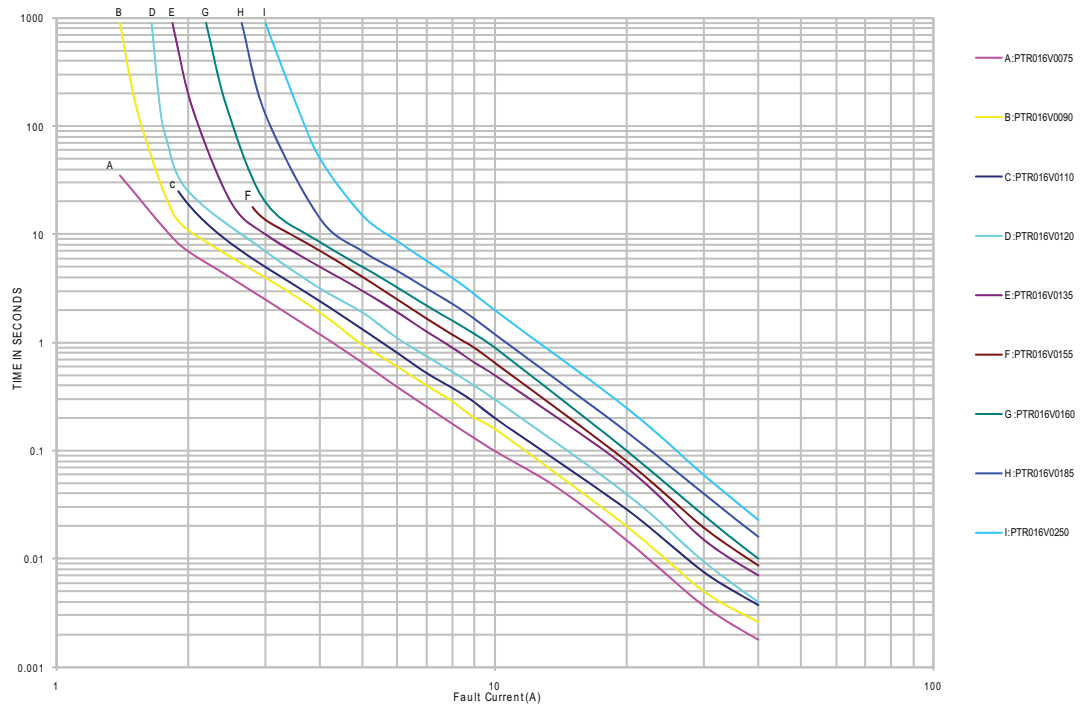
Style 2



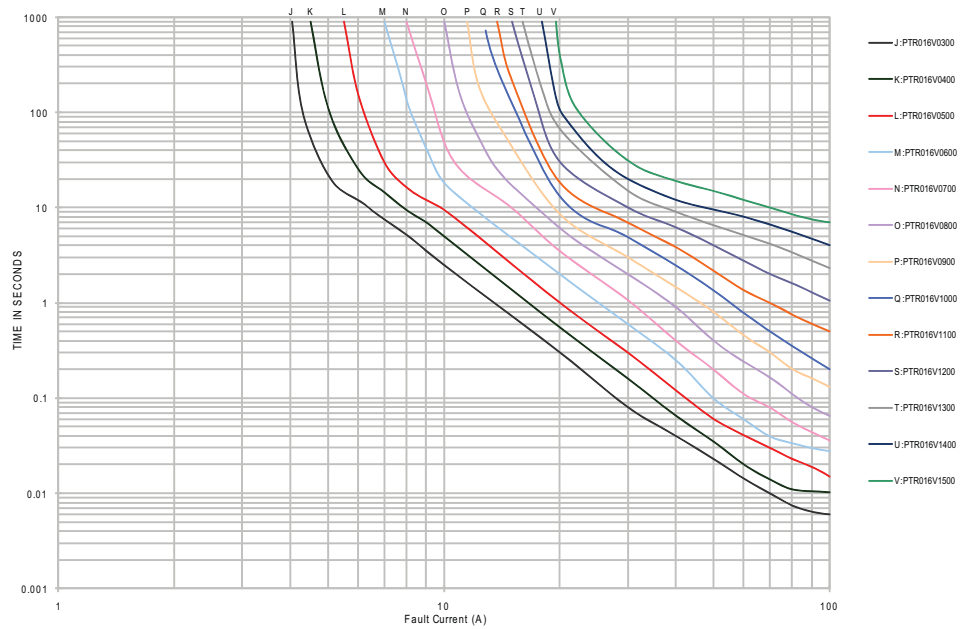
Style 3



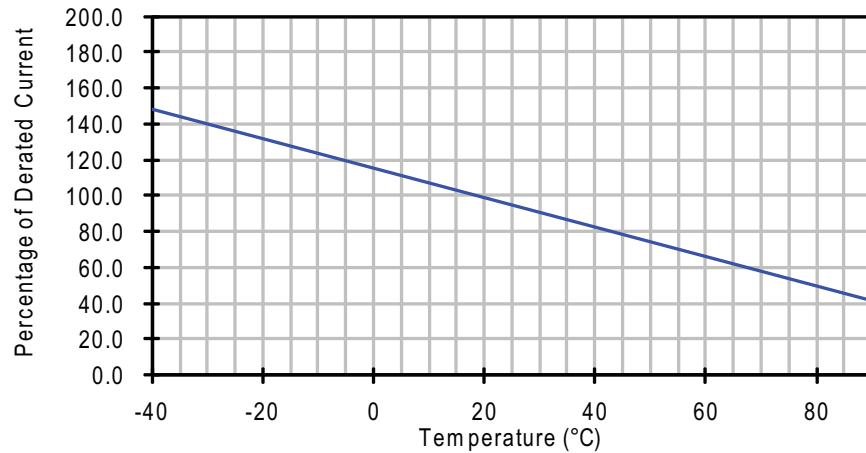
Time-to-Trip Curves at 23°C - 0.75-2.5A



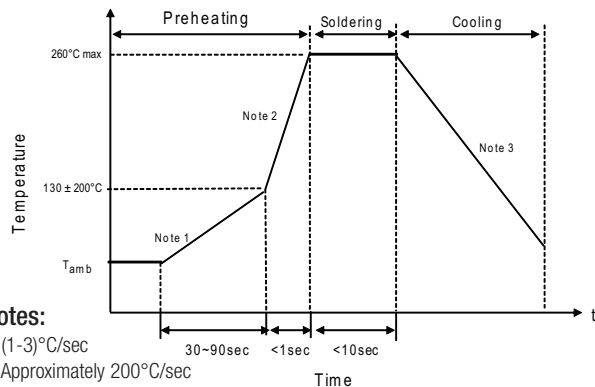
Time-to-Trip Curves at 23°C - 3.0-15A



Thermal Derating Curve



Recommended Wave Solder Profile



Notes:

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

Material Composition

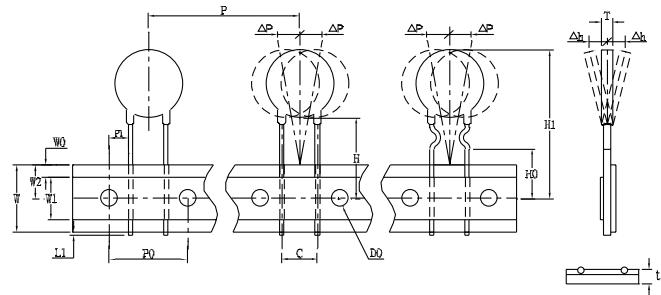
- Lead material:
 - PTR016V0075-PTR016V0250 Tin-plated copper clad steel
 - PTR016V0300-PTR016V1500 Tin-plated copper
- Insulating material: Cured epoxy resin meeting UL 94V0 requirements

Packaging/Taping Specifications

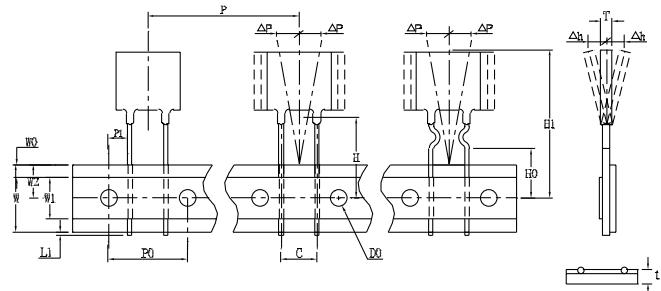
Description	IEC Mark	Dimension (mm)	Tolerance (mm)
Sprocket hole pitch	P ₀	12.7	±0.3
Ordinate to adjacent component lead:			
PTR016V0075~PTR016V0250	P ₁	3.6	±1.0
PTR016V0300~PTR016V1100	P ₁	4.5	±1.0
PTR016V1200~PTR016V1500	P ₁	7.2	±1.0
Device pitch:			
PTR016V0075~PTR016V0600	P	12.7	±1.0
PTR016V0700~PTR016V1400	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.

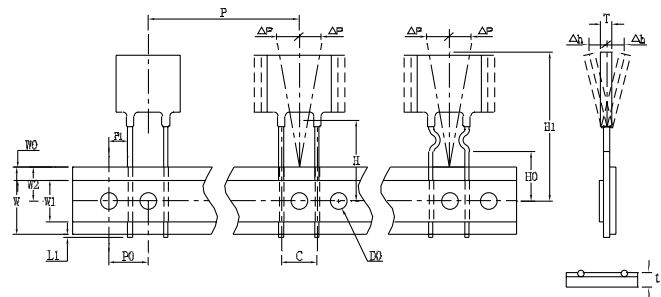
Style 1 - PTR016V0075, PTR016V0120, PTR016V0155



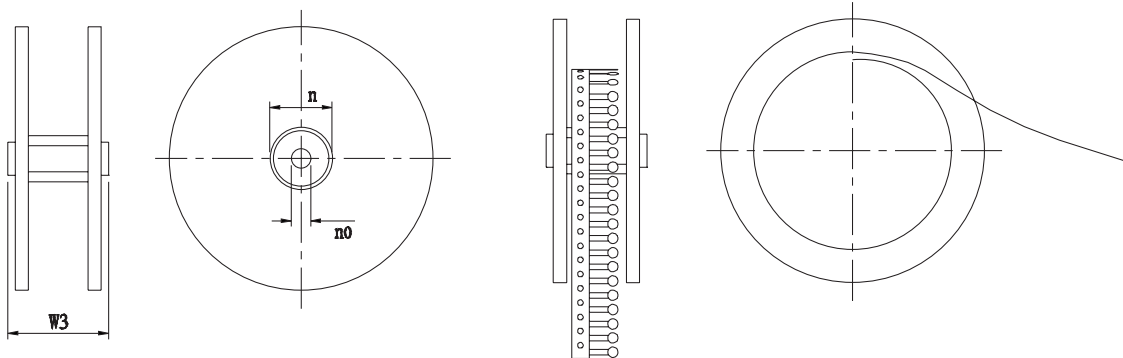
Style 2 - PTR016V0090, PTR016V0110, PTR016V0135, PTR016V0160~PTR016V1000



Style 3 - PTR016V1200~PTR016V1500



Reel Specifications



The only controlled copy of this Data Sheet is the electronic read-only version located on the Cooper Bussmann Network Drive. All other copies of this document are by definition uncontrolled. This bulletin is intended to clearly present comprehensive product data and provide technical information that will help the end user with design applications. Cooper Bussmann reserves the right, without notice, to change design or construction of any products and to discontinue or limit distribution of any products. Cooper Bussmann also reserves the right to change or update, without notice, any technical information contained in this bulletin. Once a product has been selected, it should be tested by the user in all possible applications.

Life Support Policy: Cooper Bussmann does not authorize the use of any of its products for use in life support devices or systems without the express written approval of an officer of the Company. Life support systems are devices which support or sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.

© 2011 Cooper Bussmann
www.cooperbussmann.com

