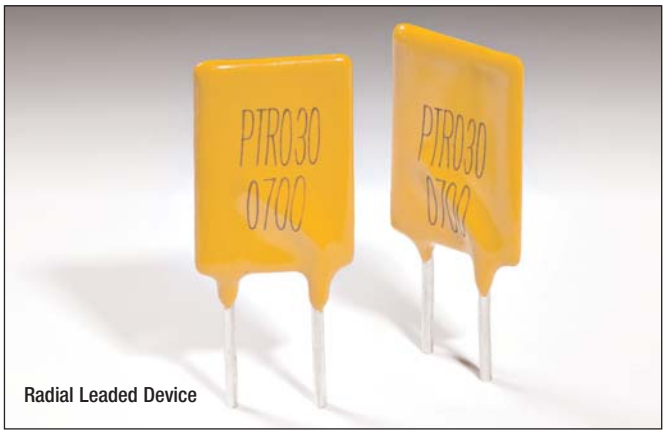
COOPER Bussmann

30 Volt DC Radial Leaded, PolyTron™ PTC Devices

PolyTron™ PTR030V Series



Radial Leaded Device

Description

- PolyTron™ radial leaded thru-hole PTC device
- Maximum 30 volts
- Current ratings from 0.90 to 9.00 amps
- Fast time-to-trip
- Low resistance
- Halogen free
- Lead free
- RoHS compliant

Agency Information

- cURus: Recognized Card: File E343021 (I_{hold} 0.9-9A)
- TUV File: J 50194729

Part Number System/Ordering

PT R 030V 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
- 0.90-1.60A - 3000 devices
- 1.85-3.00A - 2000 devices
- 4.00-9.00A - 1000 devices

BK & BK1 In Poly Bags
- 0.90-1.35A - 1,000 devices
- 1.60-6.00A - 500 devices
- 7.00-9.00A - 250 devices

Applications

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

Specifications

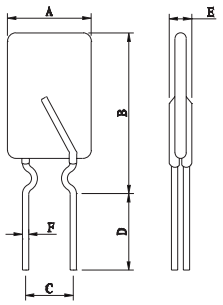
Catalog Number	V_{max} (Vdc)	I_{max} (Amps)	I_{hold} @23°C (Amps)	I_{trip} @23°C (Amps)	P_d Typ. (W)	Time to Trip (Max.)		Resistance (Ω)			Agency Information	
						(Amps)	(Sec)	Initial (R_i) Min.	Initial (R_i) Max.	Post Trip (R_1) Max.	cURus	TUV
PTR030V0090	30	40	0.90	1.80	0.6	4.50	5.90	0.070	0.120	0.22	X	X
PTR030V0110	30	40	1.10	2.20	0.7	5.50	6.60	0.050	0.100	0.17	X	X
PTR030V0135	30	40	1.35	2.70	0.8	6.75	7.30	0.040	0.080	0.13	X	X
PTR030V0160	30	40	1.60	3.20	0.9	8.00	8.00	0.030	0.070	0.11	X	X
PTR030V0185	30	40	1.85	3.70	1.0	9.25	8.70	0.030	0.060	0.09	X	X
PTR030V0250	30	40	2.50	5.00	1.2	12.50	10.30	0.020	0.040	0.07	X	X
PTR030V0300	30	40	3.00	6.00	2.0	15.00	10.80	0.020	0.050	0.08	X	X
PTR030V0400	30	40	4.00	8.00	2.5	20.00	12.70	0.010	0.030	0.05	X	X
PTR030V0500	30	40	5.00	10.00	3.0	25.00	14.50	0.010	0.030	0.05	X	X
PTR030V0600	30	100	6.00	12.00	3.5	30.00	16.00	0.005	0.020	0.04	X	X
PTR030V0700	30	100	7.00	14.00	3.8	35.00	17.50	0.005	0.020	0.03	X	X
PTR030V0800	30	100	8.00	16.00	4.0	40.00	18.80	0.005	0.013	0.02	X	X
PTR030V0900	30	100	9.00	18.00	4.2	45.00	20.00	0.005	0.010	0.02	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.

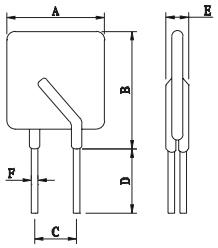
Dimensions - mm

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
PTR030V0090	7.4	12.2	12.2	5.0±0.8	7.6	3.0	0.5±0.02	2	1
PTR030V0110	7.4	14.2	14.2	5.0±0.8	7.6	3.0	0.5±0.02	2	1
PTR030V0135	8.9	13.5	13.5	5.0±0.8	7.6	3.0	0.5±0.02	2	1
PTR030V0160	8.9	15.2	15.2	5.0±0.8	7.6	3.0	0.5±0.02	2	1
PTR030V0185	10.2	15.7	15.7	5.0±0.8	7.6	3.0	0.5±0.02	2	1
PTR030V0250	11.4	18.3	20.5	5.0±0.8	7.6	3.0	0.5±0.02	2	1
PTR030V0300	11.4	17.3	21.8	5.0±0.8	7.6	3.0	0.8±0.02	2	1
PTR030V0400	14.0	20.1	24.6	5.0±0.8	7.6	3.0	0.8±0.02	2	1
PTR030V0500	14.0	24.9	26.6	10.0±0.8	7.6	3.0	0.8±0.02	2	1
PTR030V0600	16.5	24.9	29.4	10.0±0.8	7.6	3.0	0.8±0.02	2	1
PTR030V0700	19.1	26.7	31.2	10.0±0.8	7.6	3.0	0.8±0.02	2	1
PTR030V0800	21.6	29.2	33.7	10.0±0.8	7.6	3.0	0.8±0.02	2	1
PTR030V0900	24.1	29.7	34.2	10.0±0.8	7.6	3.0	0.8±0.02	2	1

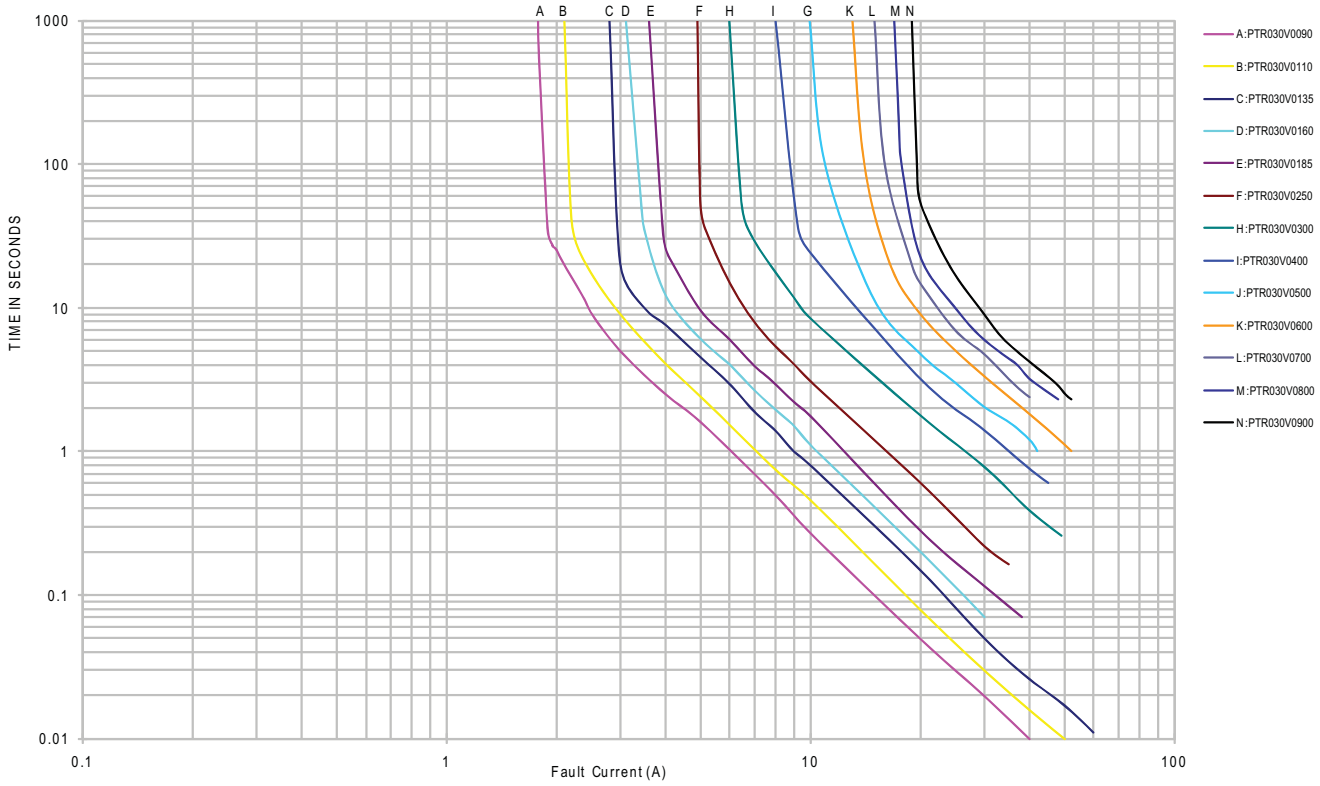
Style 1



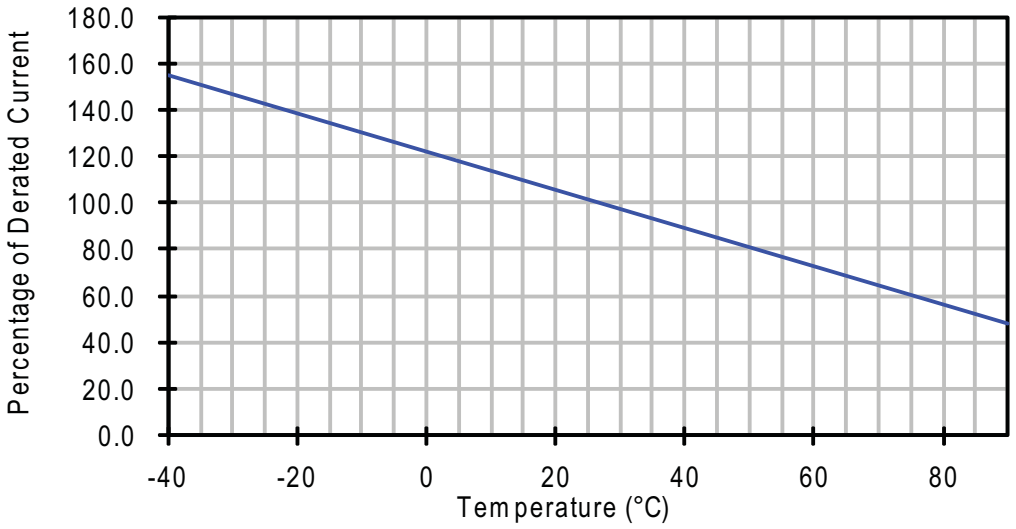
Style 2



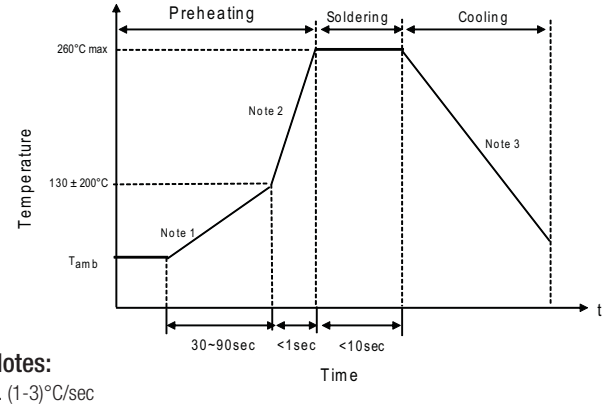
Time-to-Trip Curves at 23°C



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: 2mm min.

Material Composition

- Lead material:
  - PTR030V0090-PTR030V0250 Tin-plated copper clad steel
  - PTR030V0300-PTR030V0900 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 PTR030V0090~PTR030V0300	P_1	3.6	1.0
Ordinate to adjacent component lead PTR030V0400	P_1	3.45	1.0
Ordinate to adjacent component lead PTR030V0500~PTR030V0900	P_1	7.3	1.0
Device pitch PTR030V0090~PTR030V0300	P	12.7	1.0
Device pitch PTR030V0400~PTR030V0900	P	25.4	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 PTR030V0090~PTR030V0300	H_1	32.2	Max.
Abscissa to top PTR030V0400~PTR030V0900	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	Δ_h	0	±1.0
Body tape plane deviation	Δ_p	0	±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 - PTR030V0090-PTR030V0400

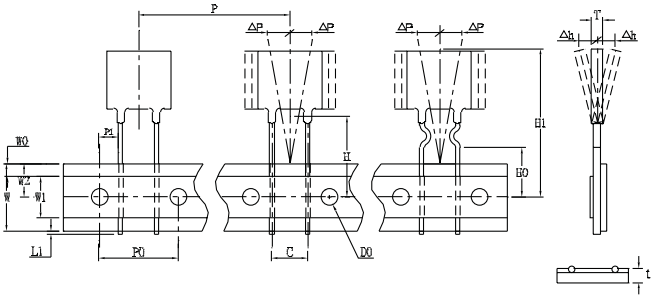
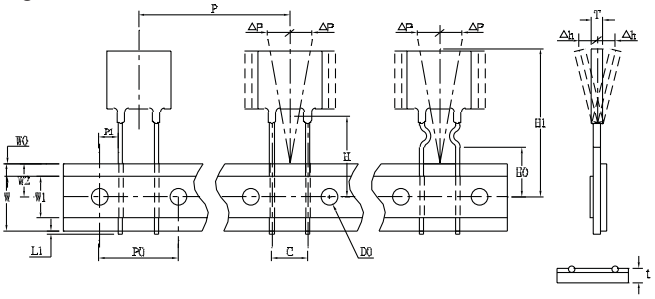
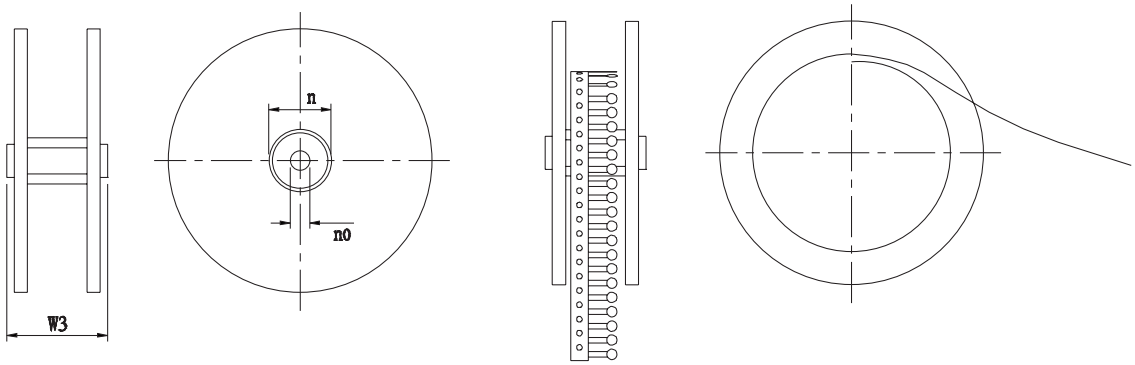


Figure 2 - PTR030V0500-PTR030V0900



Reel Specifications



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