

### Features

- Operating temperature range up to 125 °C
- Low thermal derating factor
- Higher hold currents at elevated temperature
- Choice of operating currents
- RoHS compliant\* and Pb free

### Applications

- Protection of automotive circuitry including engine control modules
- Overcurrent surge protection of electronic equipment required to operate at high operating temperature ranges
- Resettable fault protection of general electronic equipment

## PRCP-RHT Series - Polymer Resettable Circuit Protectors

### Electrical Characteristics

Model	V max. Volts	I max. Amps	I <sub>hold</sub>	I <sub>trip</sub>	Resistance		Max. Time To Trip		Tripped Power Dissipation
			Amperes at 23 °C		Ohms at 23 °C		Amperes at 23 °C	Seconds at 23 °C	Watts at 23 °C
			Hold	Trip	R <sub>Min.</sub>	R <sub>1</sub> Max. (Post Trip)	Max.	Typ.	
PRCP-RHT070	16	40	0.7	1.4	0.3	0.8	3.5	4.0	1.4
PRCP-RHT200	16	100	2.0	3.8	0.045	0.110	12.5	3.0	1.4
PRCP-RHT450	16	100	4.5	7.8	.022	.054	22.5	3.0	3.6
PRCP-RHT650	16	100	6.5	12.0	.011	.026	32.5	5.5	4.3
PRCP-RHT750	16	100	7.5	13.1	.0094	.022	37.5	7.0	4.5
PRCP-RHT1300	16	100	13.0	24.0	.0041	.010	60.0	13.0	6.9

### Environmental Characteristics

Operating Temperature .....	-40 °C to +125 °C
Storage Temperature .....	-40 °C to +85 °C
Passive Aging .....	+85 °C, 1000 hours .....±15 % typical resistance change
Humidity Aging .....	+85 °C, 85 % R.H. 1000 hours .....±15 % typical resistance change
Thermal Shock .....	MIL-STD-202, Method 107, .....±10 % typical resistance change +125 °C to -40 °C, 10 cycles
Vibration .....	MIL-STD-883C, Method 2007.1, Condition A.....No change

### Test Procedures And Requirements For Model PRCP-RHT Series

Test	Test Conditions	Accept/Reject Criteria
Visual/Mech. ....	Verify dimensions and materials .....	Per PRCP physical description
Resistance .....	In still air @ 23 °C .....	R <sub>min</sub> ≤ R ≤ R <sub>1</sub> max
Time to Trip .....	At specified current, V <sub>max</sub> , 23 °C .....	T ≤ max. time to trip (seconds)
Hold Current .....	30 min. at I <sub>hold</sub> .....	No trip
Trip Cycle Life .....	V <sub>max</sub> , I <sub>max</sub> , 100 cycles .....	No arcing or burning
Trip Endurance .....	V <sub>max</sub> , 48 hours.....	No arcing or burning
Solderability .....	MIL-STD-202, Method 208.....	95 % min. coverage

### Thermal Derating Chart - I<sub>hold</sub> (Amps)

Model	Ambient Operating Temperature									
	-40 °C	-20 °C	0 °C	23 °C	40 °C	50 °C	60 °C	70 °C	85 °C	125 °C
PRCP-RHT070	0.95	0.87	0.79	0.7	0.62	0.56	0.51	0.47	0.39	0.17
PRCP-RHT200	2.71	2.49	2.26	2.00	1.77	1.60	1.46	1.34	1.11	0.49
PRCP-RHT450	6.1	5.6	5.1	4.5	4.0	3.6	3.3	3.0	2.5	1.1
PRCP-RHT650	8.8	8.1	7.4	6.5	5.7	5.3	4.8	4.3	3.6	1.6
PRCP-RHT750	10.2	9.4	8.6	7.5	6.6	6.1	5.6	5.0	4.1	1.9
PRCP-RHT1300	17.7	16.3	14.8	13.0	11.4	10.5	9.6	8.6	7.2	3.3

\*RoHS Directive 2002/95/EC Jan 27 2003 including Annex  
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# PRCP-RHT Series - Polymer Resettable Circuit Protectors

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## Product Dimensions

Model	A	B	C		D	E	F	Physical Characteristics	
	Max.	Max.	Nom.	Tol. ±	Min.	Max.	Nom.	Style	Material
PRCP-RHT070	6.86 (0.27)	10.8 (0.425)	5.1 (0.201)	0.7 (0.028)	7.6 (0.30)	3.0 (0.12)	0.51 (0.020)	1	Sn/CuFe
PRCP-RHT200	9.4 (0.37)	14.0 (0.55)	5.1 (0.201)	0.7 (0.028)	7.6 (0.30)	3.0 (0.12)	0.51 (0.020)	1	Sn/Cu
PRCP-RHT450	10.4 (0.41)	15.6 (0.61)	5.1 (0.201)	0.7 (0.028)	7.6 (0.30)	3.0 (0.12)	0.81 (0.032)	2	Sn/Cu
PRCP-RHT650	12.7 (0.50)	22.2 (0.88)	5.1 (0.201)	0.7 (0.028)	7.6 (0.30)	3.0 (0.12)	0.81 (0.032)	2	Sn/Cu
PRCP-RHT750	14.0 (0.55)	23.5 (0.93)	5.1 (0.201)	0.7 (0.028)	7.6 (0.30)	3.0 (0.12)	0.81 (0.032)	2	Sn/Cu
PRCP-RHT1300	23.5 (0.925)	28.7 (1.17)	10.2 (0.402)	0.7 (0.028)	7.6 (0.30)	3.6 (0.14)	1.0 (0.040)	2	Sn/Cu

Packaging:

BULK: 500 pcs. per bag

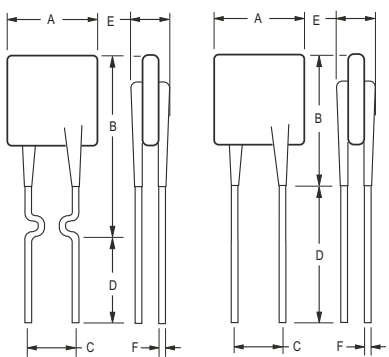
TAPE & REEL: PRCP-RHT070 - PRCP-RHT200 = 3000 pcs. per reel; PRCP-RHT450 - PRCP-RHT650 = 1500 pcs. per reel;  
PRCP-RHT750 - PRCP-RHT1300 = 1000 pcs. per reel

0.51 (24AWG)  
0.81 (20AWG)  
1.0 (18AWG)

UNITS =  $\frac{\text{MM}}{\text{(INCHES)}}$

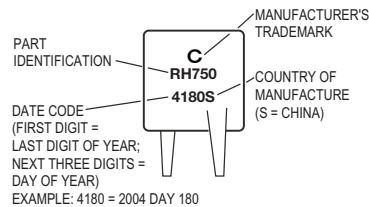
Style 1

Style 2



## Typical Part Marking

Represents total content. Layout may vary.



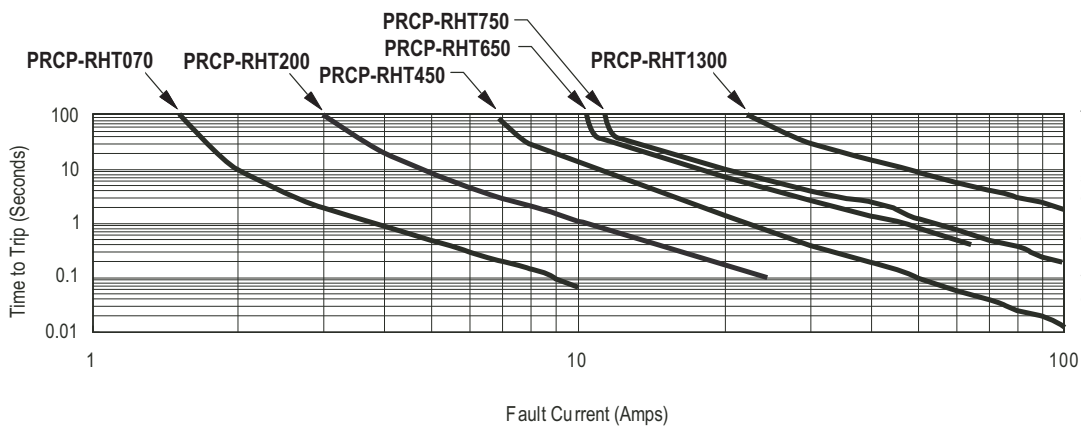
## How to Order

**PRCP - RHT 750 -**

Product Designator \_\_\_\_\_  
Series \_\_\_\_\_  
RHT = High Temperature Radial Leaded Component  
Hold Current, I<sub>hold</sub> \_\_\_\_\_  
070 - 1300 (0.70 - 13.00 Amps)  
Packaging Options \_\_\_\_\_  
- \_\_\_\_ = Bulk Packaging  
- 2 = Tape and Reel\*

\*Packaged per EIA 486-B

## Typical Time to Trip at 23 °C



The Time to Trip curves represent typical performance of a device in a simulated application environment. Actual performance in specific customer applications may differ from these values due to the influence of other variables.

Specifications are subject to change without notice. Customers should verify actual device performance in their specific applications.

# PRCP-RHT Series Tape and Reel Specifications

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Devices taped using EIA468-B/IEC60286-2 standards. See table below and Figures 1 and 2 for details.

Dimension Description	IEC Mark	EIA Mark	Dimensions	
			Dimensions	Tolerance
Carrier tape width	$W$	$W$	$\frac{18}{(.709)}$	$\frac{-0.5/+1.0}{(-0.02/+0.039)}$
Hold down tape width:	$W_0$	$W_4$	$\frac{11}{(.433)}$	min.
Hold down tape			No protrusion	
Top distance between tape edges	$W_2$	$W_6$	$\frac{3}{(.118)}$	max.
Sprocket hole position	$W_1$	$W_5$	$\frac{9}{(.354)}$	$\frac{-0.5/+0.75}{(-0.02/+0.03)}$
Sprocket hole diameter	$D_0$	$D_0$	$\frac{4}{(.157)}$	$\frac{\pm 0.2}{(\pm .0078)}$
Abscissa to plane (straight lead)	$H$	$H$	$\frac{18.5}{(.728)}$	$\frac{\pm 3.0}{(\pm .118)}$
Abscissa to plane (kinked lead)	$H_0$	$H_0$	$\frac{16}{(.63)}$	$\frac{\pm 0.5}{(\pm .02)}$
Abscissa to top: PRCP-RHT070 ~ PRCP-RHT450	$H_1$	$H_1$	$\frac{32.2}{(1.268)}$	max.
Abscissa to top: PRCP-RHT650 ~ PRCP-RHT1300	$H_1$	$H_1$	$\frac{45.0}{(1.837)}$	max.
Overall width w/lead protrusion: PRCP-RHT070 ~ PRCP-RHT450		$C_1$	$\frac{42.5}{(1.673)}$	max.
Overall width w/lead protrusion: PRCP-RHT650 ~ PRCP-RHT1300		$C_1$	$\frac{55.0}{(2.165)}$	max.
Overall width w/o lead protrusion: PRCP-RHT070 ~ PRCP-RHT450		$C_2$	$\frac{42.5}{(1.673)}$	max.
Overall width w/o lead protrusion: PRCP-RHT650 ~ PRCP-RHT1300		$C_2$	$\frac{54.0}{(2.126)}$	max.
Lead protrusion	$l_1$	$L_1$	$\frac{1.0}{(.039)}$	max.
Protrusion of cutout	$L$	$L$	$\frac{11}{(.433)}$	max.
Protrusion beyond hold tape	$l_2$	$l_2$	Not specified	
Sprocket hole pitch	$P_0$	$P_0$	$\frac{12.7}{(0.5)}$	$\frac{\pm 0.3}{(\pm 0.12)}$
Pitch tolerance			20 consecutive	$\pm 1$
Device pitch: PRCP-RHT070 ~ PRCP-RHT450			$\frac{12.7}{(0.5)}$	$\frac{\pm 0.3}{(\pm 0.12)}$
Device pitch: PRCP-RHT650 ~ PRCP-RHT1300			$\frac{25.4}{(1.0)}$	$\frac{\pm 0.6}{(\pm 0.24)}$
Tape thickness	$t$	$t$	$\frac{0.9}{(.035)}$	max.
Tape thickness with splice: PRCP-RHT070		$t_1$	$\frac{1.5}{(.059)}$	max.
Tape thickness with splice: PRCP-RHT450 ~ PRCP-RHT1300		$t_1$	$\frac{2.3}{(.091)}$	max.
Splice sprocket hole alignment			$\frac{4.0}{(0.157)}$	$\frac{\pm 0.2}{(\pm 0.008)}$
Body lateral deviation	$\Delta h$	$\Delta h$	0	$\frac{\pm 1.0}{(\pm 0.039)}$
Body tape plane deviation	$\Delta p$	$\Delta p$	0	$\frac{\pm 0.3}{(\pm 0.12)}$
Ordinate to adjacent component lead	$P_1$	$P_1$	$\frac{3.81}{(0.15)}$	$\frac{\pm 0.07}{(\pm 0.028)}$
Lead spacing: PRCP-RHT070 ~ PRCP-RHT750	$F$	$F$	$\frac{5.08}{(0.2)}$	$\frac{-0.2/+0.8}{(-.006/+ .031)}$
Lead spacing: PRCP-RHT1300	$F$	$F$	$\frac{10.2}{(0.402)}$	$\frac{-0.2/+0.8}{(-.006/+ .031)}$
Reel width: PRCP-RHT070 ~ PRCP-RHT450	$w$	$W_2$	$\frac{56}{(2.20)}$	max.
Reel width: PRCP-RHT650 ~ PRCP-RHT1300	$w$	$W_2$	$\frac{63.5}{(2.50)}$	max.

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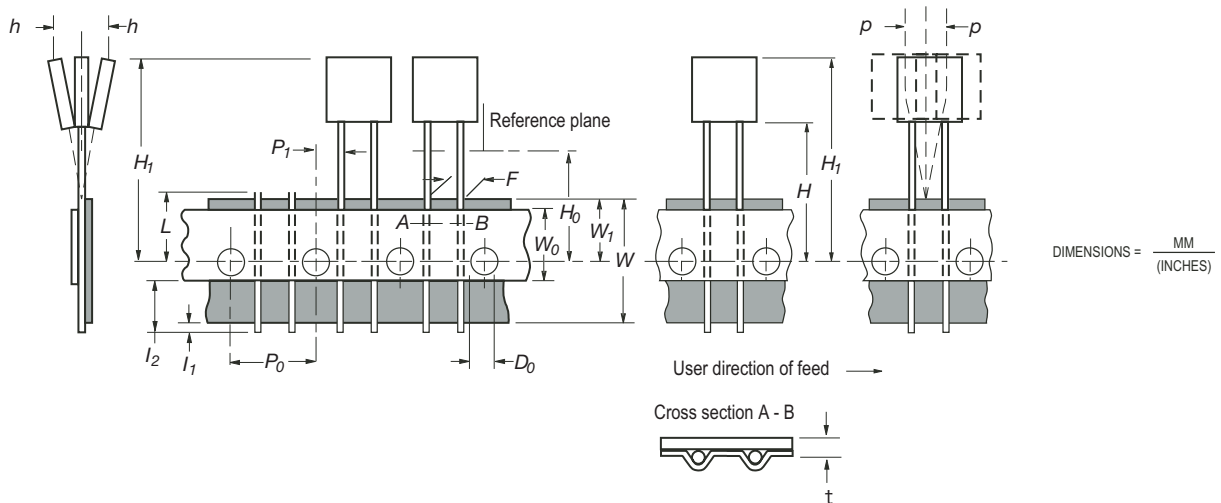
DIMENSIONS =  $\frac{\text{MM}}{\text{(INCHES)}}$

# PRCP-RHT Series Tape and Reel Specifications

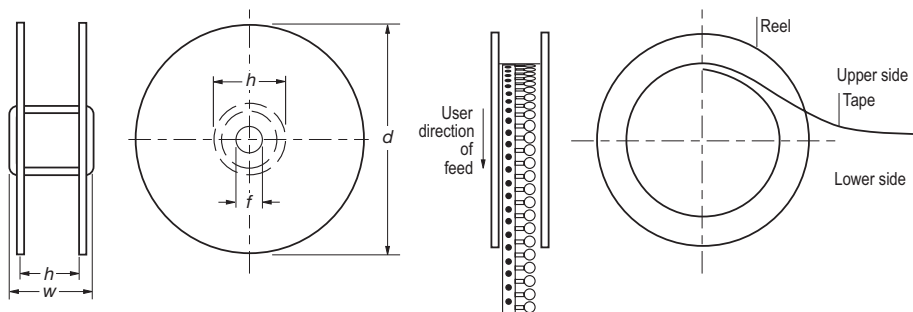
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Dimension Description	IEC Mark	EIA Mark	Dimensions	
			Dimensions	Tolerance
Reel diameter	<i>d</i>	<i>a</i>	$\frac{370}{(14.57)}$	max.
Space between flanges less device	$W_1$	<i>h</i>	$\frac{4.75}{(.187)}$	$\frac{\pm 3.25}{(\pm .128)}$
Arbor hole diameter	<i>f</i>	<i>c</i>	$\frac{26}{(1.024)}$	$\frac{\pm 12.0}{(\pm .472)}$
Core diameter	<i>h</i>	<i>n</i>	$\frac{80}{(3.15)}$	max.
Box			$\frac{64}{(2.52)}$ $\frac{372}{(14.6)}$ $\frac{372}{(14.6)}$	
Consecutive missing places			3	max.
Empty places per reel			Not specified	

**Taped Component Dimensions - Figure 1**



**Reel Dimensions - Figure 2**



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#### Revision History

Date	Rev.	Reason
12/13/2005	A	Initial issue

## **COPAL ELECTRONICS**

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PRCP-RHT SERIES

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