


Features

- Radial leaded devices
- Cured, flame retardant epoxy polymer insulating material meets UL94 V-0 requirements
- Bulk packaging, tape and reel available
- Resettable circuit protection
- Agency recognition: 
- RoHS compliant* and halogen free**

Applications

- Food blenders, coffee machines
- HVAC
- Electric fans, blowers
- AC adaptors

PRCP-RM Series - Polymer Resettable Circuit Protectors

Electrical Characteristics

Model	Typical Current Trip Limit		V _{max}		I _{max}	Initial Resistance	One Hour Post-Trip Resistance	Maximum Time to Trip		Tripped Power Dissipation
	I _{hold} at 23 °C	I _{trip} at 23 °C	Operating Voltage	Interrupt Voltage	Interrupt Current	R _{min} at 23 °C	R ₁ max at 23 °C	at 23 °C		PD Typ. at 23 °C
	(A)	(A)	(Vac)	(Vac)	(A)	(Ohms)	(Ohms)	(A)	(Sec.)	(W)
PRCP-RM005/240	0.05	0.12	240	265	1.0	18.50	65.00	0.25	10.0	0.9
PRCP-RM008/240	0.08	0.19	240	265	1.2	7.40	26.00	0.40	10.0	0.9
PRCP-RM012/240	0.12	0.30	240	265	1.2	3.00	12.00	0.60	15.0	1.0
PRCP-RM016/240	0.16	0.37	240	265	2.0	2.50	7.80	0.80	15.0	1.4
PRCP-RM025/240	0.25	0.56	240	265	3.5	1.30	3.80	1.25	18.5	1.5
PRCP-RM033/240	0.33	0.74	240	265	4.5	0.77	2.60	1.65	21.0	1.7
PRCP-RM040/240	0.40	0.90	240	265	5.5	0.60	1.90	2.00	24.0	2.0
PRCP-RM055/240	0.55	1.25	240	265	7.0	0.45	1.45	2.75	26.0	3.4

Environmental Characteristics

Operating Temperature.....	-20 °C to +85 °C
Humidity Aging.....	+85 °C, 85 % R.H. 1000 h..... ±20 % typical resistance change
Passive Aging.....	+85 °C, 1000 h..... ±20 % typical resistance change
Vibration.....	MIL-STD-883C, Method 2007.1..... No change Condition A
Solvent Resistance.....	MIL-STD-202, Method 215..... No change

Test Procedures And Requirements For Model PRCP-RM Series

Item	Test Conditions	Accept/Reject Criteria
Visual/Mechanical.....	Verify dimensions and material.....	Per P.R.C.P. physical description
Resistance.....	In still air @ 23 °C.....	R _{min} ≤ R ≤ R ₁ max
Time to Trip.....	240 Vac, specified current.....	T ≤ maximum time to trip
Hold Current.....	At I _{hold}	No trip
Trip Cycle Life.....	240 Vac, I _{max} , 100 cycles.....	No arcing or burning
Trip Endurance.....	a) 240 Vac, I _{max} , 24 h..... b) 265 Vac, I _{max} , 30 min	No arcing or burning
Solderability.....	MIL-STD-202, Method 208.....	95 % minimum coverage

UL File Number..... E300792
 TÜV Certificate Number..... R50276278

*RoHS Directive 2015/863, Mar. 31, 2015 and Annex.

**NIDEC COMPONENTS follows the prevailing definition of "halogen free" in the industry. NIDEC COMPONENTS considers a product to be "halogen free" if (a) the Bromine (Br) content is 900ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

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Advantages

- Resettable feature with overtemperature and overcurrent protection can save expensive components from having to be replaced after tripping, e.g., transformers with built in thermal fuses
- Faster than bimetallic switch designs that take on average approximately 30 seconds to cool down and reset
- Generally lower electromagnetic interference than bimetallic switches

Benefits

- Reduced repair and replacement costs
- Reduced nuisance tripping
- Combined overcurrent and overtemperature protector in one device

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Thermal Derating Chart - Ihold(Amps)

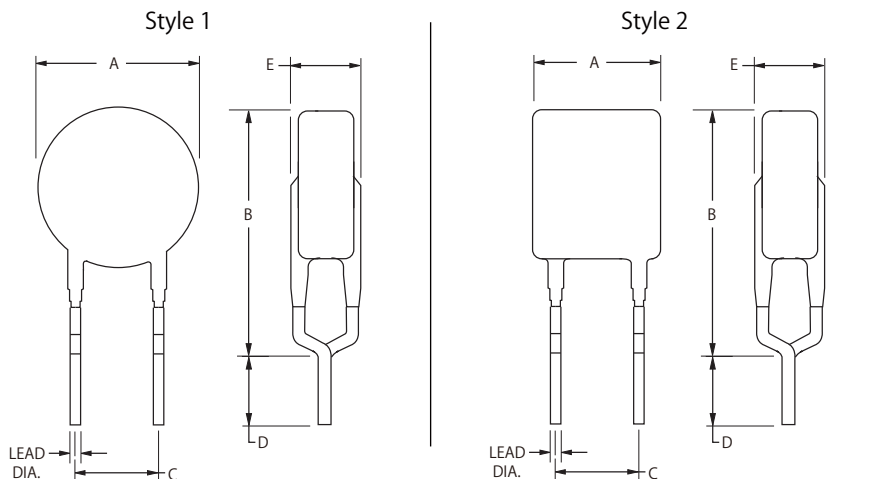
Model	Ambient Operating Temperature							
	-20 °C	0 °C	23 °C	40 °C	50 °C	60 °C	70 °C	85 °C
PRCP-RM005/240	0.08	0.06	0.05	0.04	0.04	0.03	0.03	0.02
PRCP-RM008/240	0.12	0.10	0.08	0.07	0.06	0.05	0.04	0.03
PRCP-RM012/240	0.18	0.15	0.12	0.10	0.09	0.07	0.06	0.04
PRCP-RM016/240	0.24	0.20	0.16	0.13	0.11	0.10	0.08	0.05
PRCP-RM025/240	0.38	0.32	0.25	0.21	0.18	0.15	0.13	0.09
PRCP-RM033/240	0.50	0.42	0.33	0.27	0.23	0.20	0.17	0.11
PRCP-RM040/240	0.61	0.51	0.40	0.33	0.28	0.24	0.20	0.14
PRCP-RM055/240	0.80	0.68	0.55	0.46	0.40	0.35	0.29	0.22

Product Dimensions

Model	A Max.	B Max.	C		D Min.	E Max.	Physical Characteristics		
			Nom.	Tol. ±			Style	Lead Dia.	Material
PRCP-RM005/240	$\frac{8.3}{(0.327)}$	$\frac{12.9}{(0.508)}$	$\frac{5.1}{(0.201)}$	$\frac{0.7}{(0.028)}$	$\frac{7.6}{(0.299)}$	$\frac{3.8}{(0.150)}$	1	$\frac{0.51}{(0.020)}$	Sn/Cu
PRCP-RM008/240	$\frac{8.3}{(0.327)}$	$\frac{12.9}{(0.508)}$	$\frac{5.1}{(0.201)}$	$\frac{0.7}{(0.028)}$	$\frac{7.6}{(0.299)}$	$\frac{3.8}{(0.150)}$	1	$\frac{0.51}{(0.020)}$	Sn/Cu
PRCP-RM012/240	$\frac{8.3}{(0.327)}$	$\frac{12.9}{(0.508)}$	$\frac{5.1}{(0.201)}$	$\frac{0.7}{(0.028)}$	$\frac{7.6}{(0.299)}$	$\frac{3.8}{(0.150)}$	1	$\frac{0.51}{(0.020)}$	Sn/Cu
PRCP-RM016/240	$\frac{9.9}{(0.390)}$	$\frac{13.8}{(0.543)}$	$\frac{5.1}{(0.201)}$	$\frac{0.7}{(0.028)}$	$\frac{7.6}{(0.299)}$	$\frac{3.8}{(0.150)}$	1	$\frac{0.51}{(0.020)}$	Sn/Cu
PRCP-RM025/240	$\frac{10.0}{(0.394)}$	$\frac{20.0}{(0.787)}$	$\frac{5.1}{(0.201)}$	$\frac{0.7}{(0.028)}$	$\frac{7.6}{(0.299)}$	$\frac{3.8}{(0.150)}$	2	$\frac{0.65}{(0.026)}$	Sn/Cu
PRCP-RM033/240	$\frac{11.4}{(0.449)}$	$\frac{20.0}{(0.787)}$	$\frac{5.1}{(0.201)}$	$\frac{0.7}{(0.028)}$	$\frac{7.6}{(0.299)}$	$\frac{3.8}{(0.150)}$	2	$\frac{0.65}{(0.026)}$	Sn/Cu
PRCP-RM040/240	$\frac{11.5}{(0.453)}$	$\frac{20.9}{(0.823)}$	$\frac{5.1}{(0.201)}$	$\frac{0.7}{(0.028)}$	$\frac{7.6}{(0.299)}$	$\frac{3.8}{(0.150)}$	2	$\frac{0.65}{(0.026)}$	Sn/Cu
PRCP-RM055/240	$\frac{14.0}{(0.551)}$	$\frac{22.4}{(0.882)}$	$\frac{5.1}{(0.201)}$	$\frac{0.7}{(0.028)}$	$\frac{7.6}{(0.299)}$	$\frac{4.1}{(0.161)}$	2	$\frac{0.81}{(0.032)}$	Sn/Cu

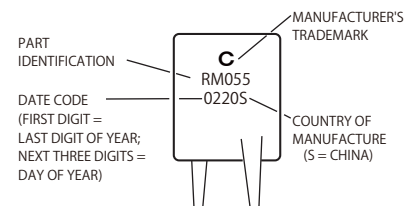
Packaging options:
 BULK: 500 pcs. per bag.
 TAPE&REEL: 2000 pcs. per reel (PRCP-RM005/240~PRCP-RM040/24); 1000 pcs. per reel (PRCP-RM055/240)

0.51(24AWG) DIMENSIONS: MM (INCHES)
 0.65(22AWG)
 0.81(20AWG)



Typical Part Marking

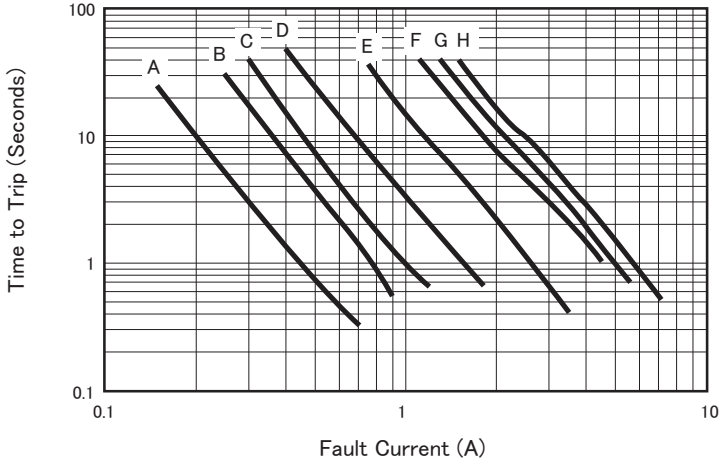
Represents total content. Layout may vary.



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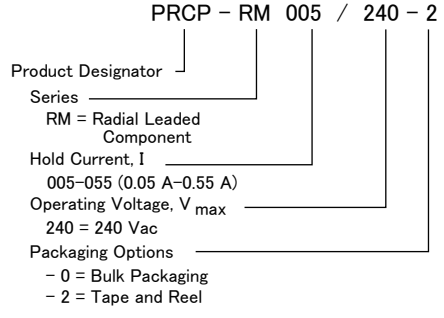
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Typical Time to Trip at 23 °C



- A = PRCP-RM005/240
- B = PRCP-RM008/240
- C = PRCP-RM012/240
- D = PRCP-RM016/240
- E = PRCP-RM025/240
- F = PRCP-RM033/240
- G = PRCP-RM040/240
- H = PRCP-RM055/240

How to Order



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

Dimensions Description	IEC Mark	EIA Mark	Dimensions	
			Dimensions	Tolerance
Carrier tape width	W	W	$\frac{18}{(0.709)}$	$\frac{-0.5/+1.0}{(-0.02/+0.039)}$
Hold down tape width	W ₀	W ₄	$\frac{11}{(0.433)}$	min imum
Hold down tape			No protrusion	
Top distance between tape edges	W ₂	W ₆	$\frac{3}{(0.118)}$	maximum
Sprocket hole position	W ₁	W ₅	$\frac{9}{(0.354)}$	$\frac{-0.5/+0.75}{(-0.02/+0.03)}$
Sprocket hole diameter	D ₀	D ₀	$\frac{4}{(0.157)}$	$\frac{\pm 0.2}{(\pm 0.79)}$
Abscissa to plane (PRCP-RM005/240~PRCP-RM016/240)	H	H	$\frac{18.5}{(0.728)}$	$\frac{\pm 3.0}{(\pm 0.118)}$
Abscissa to plane (PRCP-RM025/240~PRCP-RM055/240)	H ₀	H ₀	$\frac{16}{(0.63)}$	$\frac{\pm 0.5}{(\pm 0.02)}$
Abscissa to top (PRCP-RM005/240~PRCP-RM016/240)	H ₁	H ₁	$\frac{32.2}{(1.268)}$	maximum
Abscissa to top (PRCP-RM025/240~PRCP-RM055/240)	H ₁	H ₁	$\frac{45.0}{(1.772)}$	maximum
Overall width w/lead protrusion (PRCP-RM005/240~PRCP-RM016/240)		C ₁	$\frac{43.2}{(1.701)}$	maximum
Overall width w/lead protrusion (PRCP-RM025/240~PRCP-RM055/240)		C ₁	$\frac{56.0}{(2.205)}$	maximum
Overall width w/o lead protrusion (PRCP-RM005/240~PRCP-RM016/240)		C ₂	$\frac{42.5}{(1.673)}$	maximum
Overall width w/o lead protrusion (PRCP-RM025/240~PRCP-RM055/240)		C ₂	$\frac{56.0}{(2.205)}$	maximum
Lead protrusion	I ₁	L ₁	$\frac{1.0}{(0.039)}$	maximum
Protrusion of cutout	L	L	$\frac{11}{(0.433)}$	maximum
Protrusion beyond hold-down tape	I ₂	I ₂	Not specified	
Sprocket hole pitch	P ₀	P ₀	$\frac{12.7}{(0.500)}$	$\frac{\pm 0.3}{(\pm 0.012)}$
Pitch tolerance			20 consecutive	$\frac{\pm 1}{(\pm 0.039)}$
Device pitch (PRCP-RM005/240~PRCP-RM040/240)			$\frac{12.7}{(0.500)}$	$\frac{\pm 0.3}{(\pm 0.012)}$
Device pitch (PRCP-RM055/240)			$\frac{25.4}{(1.00)}$	$\frac{\pm 0.6}{(\pm 0.024)}$
Tape thickness	t	t	$\frac{0.9}{(0.35)}$	maximum
Tape thickness with splice (PRCP-RM005/240~PRCP-RM040/240)		t ₁	$\frac{1.5}{(0.059)}$	maximum
Tape thickness with splice (PRCP-RM055/240)		t ₁	$\frac{2.3}{(0.091)}$	maximum
Splice sprocket hole alignment			0	$\frac{\pm 0.3}{(\pm 0.012)}$
Body lateral deviation	Δ _h	Δ _h	0	$\frac{\pm 1}{(\pm 0.039)}$
Body tape plane deviation	Δ _p	Δ _p	0	$\frac{\pm 0.3}{(\pm 0.012)}$
Lead seating plane deviation	ΔP ₁	P ₁	$\frac{3.81}{(0.015)}$	$\frac{\pm 0.7}{(\pm 0.028)}$
Lead spacing	F	F	$\frac{5.08}{(0.200)}$	$\frac{+0.8/-0.5}{(+0.031/-0.020)}$

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

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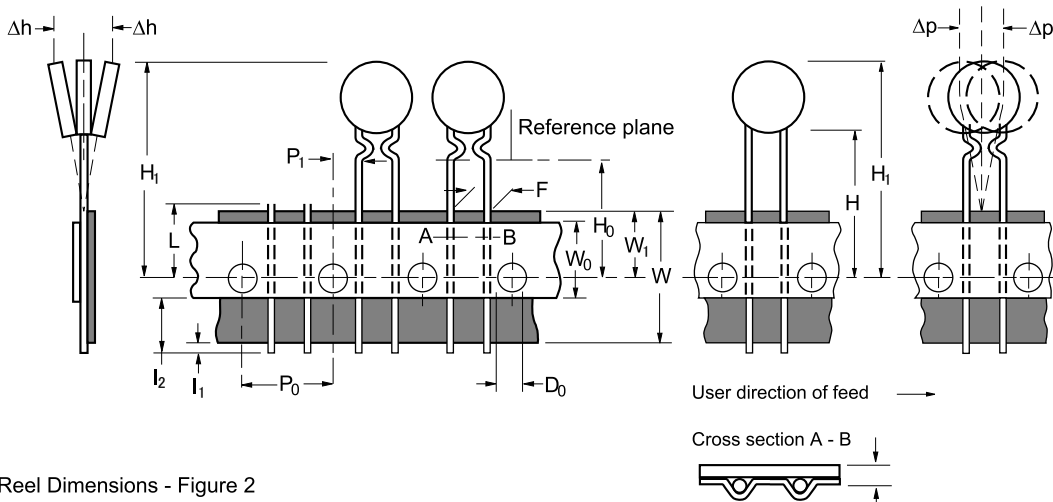
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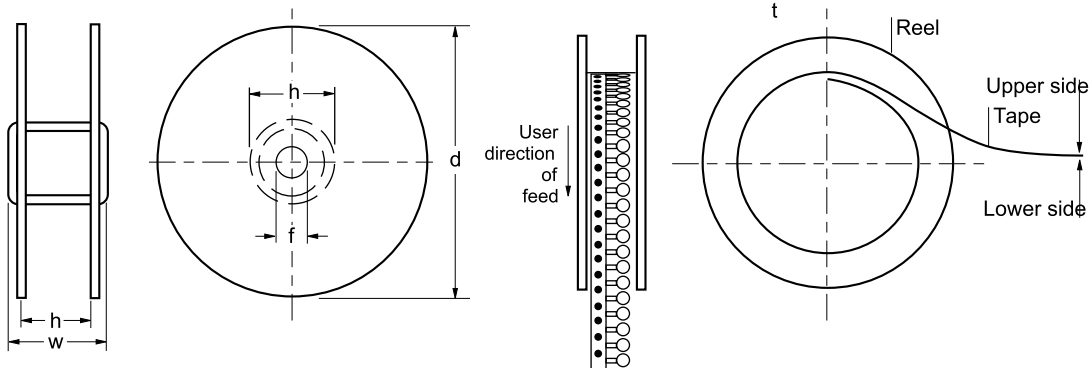
Dimensions Description	IEC Mark	EIA Mark	Dimensions	
			Dimensions	Tolerance
Reel width (PRCP-RM005/240~PRCP-RM040/240)	w	w ₂	$\frac{56.0}{(2.20)}$	maximum
Reel width (PRCP-RM055/240)	w	w ₂	$\frac{63.5}{(2.50)}$	maximum
Reel diameter	d	a	$\frac{370.0}{(14.57)}$	maximum
Space betweenflanges (PRCP-RM005/240~PRCP-RM040/240)	h	w ₁	$\frac{48.0}{(1.89)}$	maximum
Space betweenflanges (PRCP-RM055/240)	h	w ₁	$\frac{55.0}{(2.17)}$	maximum
Arbor hole diameter	f	c	$\frac{26.0}{(1.02)}$	± 12.0 (± 0.472)
Core diameter	h	n	$\frac{91.0}{(3.58)}$	maximum
Box			$\frac{62}{(2.44)}$ $\frac{355}{(14.0)}$ $\frac{345}{(13.6)}$	maximum
Consecutive missing places			3	maximum
Empty places per reel			0.1 %	maximum

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

Taped Component Dimensions - Figure 1



Reel Dimensions - Figure 2



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