

Applications

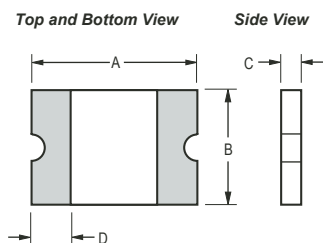
- Game consoles
- PC motherboards
- USB port protection-USB 2.0,3.0 & OTG
- HDMI 1.4 Source protection
- IEEE 1394 ports
- Mobile phones
- Digital cameras

PRCP-USMF Series - Polymer Resettable Circuit Protectors

Product Dimensions

Model	A		B		C		D
	Min.	Max.	Min.	Max.	Min.	Max.	Min.
PRCP-USMF005	$\frac{3.00}{(0.118)}$	$\frac{3.43}{(0.135)}$	$\frac{2.35}{(0.093)}$	$\frac{2.80}{(0.110)}$	$\frac{0.80}{(0.031)}$	$\frac{1.1}{(0.043)}$	$\frac{0.30}{(0.012)}$
PRCP-USMF010	$\frac{3.00}{(0.118)}$	$\frac{3.43}{(0.135)}$	$\frac{2.35}{(0.093)}$	$\frac{2.80}{(0.110)}$	$\frac{0.80}{(0.031)}$	$\frac{1.1}{(0.043)}$	$\frac{0.30}{(0.012)}$
PRCP-USMF020	$\frac{3.00}{(0.118)}$	$\frac{3.43}{(0.135)}$	$\frac{2.35}{(0.093)}$	$\frac{2.80}{(0.110)}$	$\frac{0.80}{(0.031)}$	$\frac{1.1}{(0.043)}$	$\frac{0.30}{(0.012)}$
PRCP-USMF035	$\frac{3.00}{(0.118)}$	$\frac{3.43}{(0.135)}$	$\frac{2.35}{(0.093)}$	$\frac{2.80}{(0.110)}$	$\frac{0.55}{(0.022)}$	$\frac{0.85}{(0.033)}$	$\frac{0.30}{(0.012)}$
PRCP-USMF050	$\frac{3.00}{(0.118)}$	$\frac{3.43}{(0.135)}$	$\frac{2.35}{(0.093)}$	$\frac{2.80}{(0.110)}$	$\frac{0.55}{(0.022)}$	$\frac{0.85}{(0.033)}$	$\frac{0.30}{(0.012)}$
PRCP-USMF075	$\frac{3.00}{(0.118)}$	$\frac{3.43}{(0.135)}$	$\frac{2.35}{(0.093)}$	$\frac{2.80}{(0.110)}$	$\frac{0.55}{(0.022)}$	$\frac{0.85}{(0.033)}$	$\frac{0.30}{(0.012)}$
PRCP-USMF110	$\frac{3.00}{(0.118)}$	$\frac{3.43}{(0.135)}$	$\frac{2.35}{(0.093)}$	$\frac{2.80}{(0.110)}$	$\frac{0.55}{(0.022)}$	$\frac{0.85}{(0.033)}$	$\frac{0.30}{(0.012)}$
PRCP-USMF150	$\frac{3.00}{(0.118)}$	$\frac{3.43}{(0.135)}$	$\frac{2.35}{(0.093)}$	$\frac{2.80}{(0.110)}$	$\frac{0.40}{(0.016)}$	$\frac{0.85}{(0.033)}$	$\frac{0.30}{(0.012)}$

Packaging:3000 pcs.per reel.

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

Terminal material:
Electroless Ni under immersion Au

Termination pad solderability:
Standard Au finish:
Meets ANSI/J-STD-002 Category 2.

Recommended Storage:
40 °C max./70 % RH max.

Thermal Derating Chart- I_{hold} / I_{trip} (Amps)

Model	Ambient Operating Temperature								
	-40 °C	-20 °C	0 °C	23 °C	40 °C	50 °C	60 °C	70 °C	85 °C
PRCP-USMF005	0.08 / 0.24	0.07 / 0.21	0.06 / 0.18	0.05 / 0.15	0.04 / 0.12	0.04 / 0.12	0.03 / 0.09	0.03 / 0.09	0.02 / 0.06
PRCP-USMF010	0.15 / 0.45	0.13 / 0.39	0.12 / 0.36	0.10 / 0.30	0.09 / 0.27	0.08 / 0.24	0.07 / 0.21	0.06 / 0.18	0.05 / 0.15
PRCP-USMF020	0.32 / 0.64	0.28 / 0.56	0.24 / 0.48	0.20 / 0.40	0.18 / 0.36	0.16 / 0.32	0.14 / 0.28	0.12 / 0.24	0.10 / 0.20
PRCP-USMF035	0.51 / 1.09	0.46 / 0.99	0.40 / 0.86	0.34 / 0.75	0.30 / 0.64	0.27 / 0.58	0.24 / 0.51	0.22 / 0.47	0.18 / 0.39
PRCP-USMF050	0.76 / 1.52	0.66 / 1.32	0.58 / 1.16	0.48 / 1.00	0.42 / 0.84	0.38 / 0.76	0.35 / 0.70	0.29 / 0.58	0.23 / 0.52
PRCP-USMF075	1.10 / 2.20	0.97 / 1.94	0.86 / 1.72	0.72 / 1.50	0.64 / 1.28	0.58 / 1.16	0.55 / 1.10	0.47 / 0.94	0.39 / 0.78
PRCP-USMF110	1.60 / 3.20	1.42 / 2.84	1.26 / 2.52	1.10 / 2.20	0.94 / 1.88	0.86 / 1.72	0.80 / 1.60	0.70 / 1.40	0.58 / 1.16
PRCP-USMF150	2.30 / 4.60	2.02 / 4.04	1.76 / 3.52	1.43 / 3.00	1.24 / 2.48	1.11 / 2.22	1.00 / 2.00	0.85 / 1.70	0.65 / 1.30

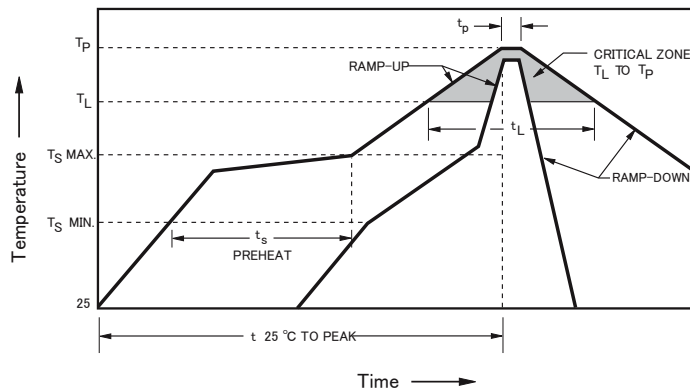
Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Customers should verify actual device performance in their specific applications.

PRCP-USMF Series - Polymer Resettable Circuit Protectors

Solder Reflow Recommendations

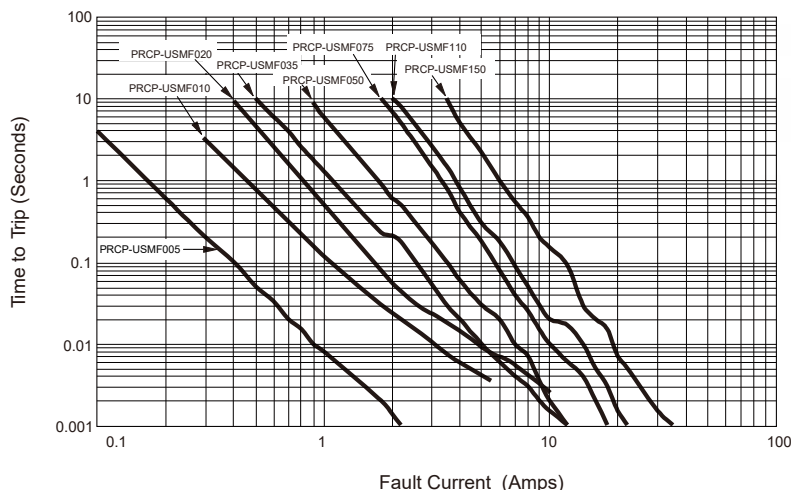


Notes:

- PRCP-USMF models are intended for reflow soldering (including, but not limited to heating plate, hot air, IR, nitrogen, and vapor phase).
- Wave soldering is permissible only if the device is on the top of the PCB, opposite the heat source.
- Hand soldering is not recommended for these devices.
- All temperatures refer to the topside of the device, measured on the device body surface.
- If reflow temperatures exceed the recommended profile, devices may not meet the published specifications.
- Compatible with Pb and Pb-free solder reflow profiles.
- Excess solder may cause a short circuit.

Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate ($T_{s\max}$ to T_p)	3 °C / second max.
PREHEAT:	
Temperature Min. ($T_{s\min}$)	150 °C
Temperature Max. ($T_{s\max}$)	200 °C
Time ($T_{s\min}$ to $T_{s\max}$) (t_s)	60~180 seconds
TIME MAINTAINED ABOVE:	
Temperature (T_L)	217 °C
Time (t_L)	60~150 seconds
Peak Temperature (T_p)	260 °C
Time within 5 °C of Actual Peak Temperature (t_p)	20~40 seconds
Ramp-Down Rate	6 °C / second max.
Time 25 °C to Peak Temperature	8 minutes max.

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.

How to Order

PRCP - USMF 010 -2 E

Product Designator

Series

USMF= 1210 Surface Mount Component

Hold Current, I_{hold}

005-150 (0.05-1.50 Amps)

Packaging

Packaged per EIA 481-1

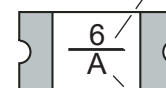
-2 = Tape and Reel

Halogen Free

Non Hidden Foil

Typical Part Marking

Represents total content. Layout may vary.



PART IDENTIFICATION:

PRCP-USMF005 = 0
 PRCP-USMF010 = 1
 PRCP-USMF020 = 2
 PRCP-USMF035 = 3
 PRCP-USMF050 = 4
 PRCP-USMF075 = 5
 PRCP-USMF110 = 6
 PRCP-USMF150 = 8

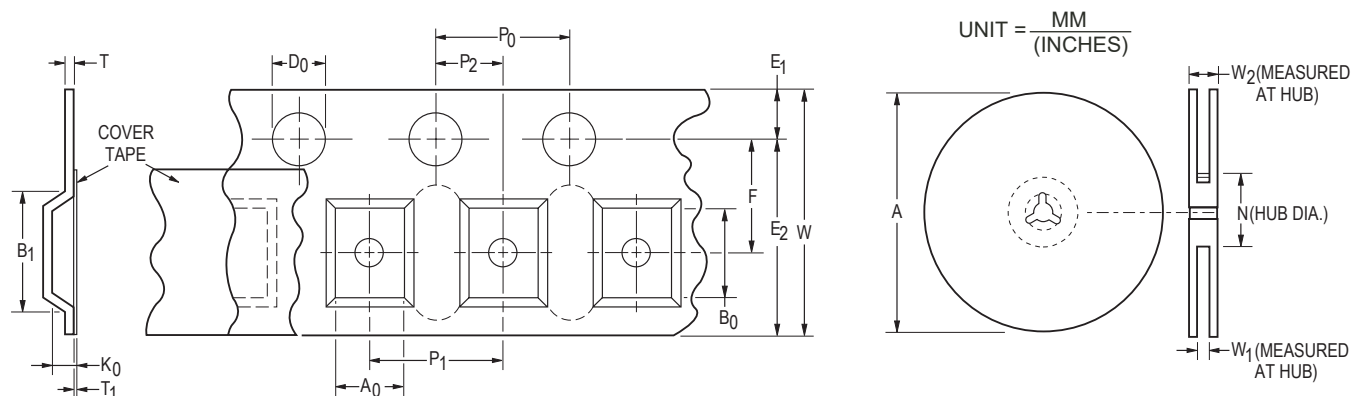
BIWEEKLY DATE CODE:
 WEEK 1 AND 2 = A
 WEEK 51 AND 52 = Z

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PRCP-USMF Series Tape and Reel Specifications

Tape Dimensions	PRCP-USMF Series per EIA 481-2
W	8.0 ± 0.3 (0.315 $\pm$ 0.012)
P ₀	4.0 ± 0.1 (0.157 $\pm$ 0.004)
P ₁	4.0 ± 0.1 (0.157 $\pm$ 0.004)
P ₂	2.0 ± 0.05 (0.079 $\pm$ 0.002)
A ₀	2.76 ± 0.10 (0.109 $\pm$ 0.004)
B ₀	3.50 ± 0.10 (0.138 $\pm$ 0.004)
B ₁ max.	4.35 (0.171)
D ₀	$1.5 + 0.1/-0.0$ (0.059 + 0.004/-0)
F	3.5 ± 0.05 (0.138 $\pm$ 0.002)
E ₁	1.75 ± 0.10 (0.069 $\pm$ 0.004)
E ₂ min.	6.25 (0.246)
T max.	0.6 (0.024)
T ₁ max.	0.1 (0.004)
K ₀	1.07 ± 0.10 (0.042 $\pm$ 0.004)
Leader min.	390 (15.35)
Trailer min.	160 (6.30)
Reel Dimensions	
A max.	185 (7.283)
N min.	50 (1.97)
W ₁	$8.4 + 1.5/-0.0$ (0.331 + 0.059/-0.0)
W ₂ max.	14.4 (0.567)



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