

Polymeric PTC



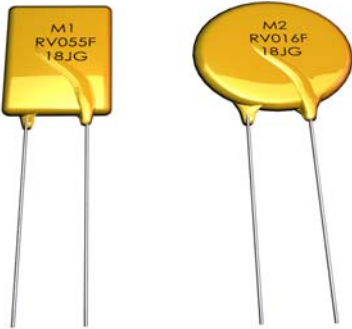
MPRV Series

MERITEK

Feature and Applications

UL E223037

- ROHS Compliant (Lead Free) Product
- Wide variety of electronic applications
- Radial leaded type
- Operation Current: 100mA to 3.75A
- Maximum Operating Voltage: 120V
- Maximum Interrupt Voltage: 135V
- Temperature Range: -40°C to 85°C



PART NUMBERING SYSTEM

	<u>MPRV</u>	<u>120V</u>	<u>015</u>
Meritek Series			
Voltage rating			
Current rating			

Electrical Characteristics (23°C)

Part Number	Hold Current	Trip Current	Max. Time to Trip	Maximum Current	Rated Voltage	Typical Power	Resistance Tolerance	
	I _H , A	I _T , A	at 5X I _H , Sec	I _{max} , A	V _{max} , V	P _d , W	R _{min} ohms	R1 _{max} . ohms
MPRV120V010	0.10	0.20	10.0	2.0	120	0.84	3.00	7.50
MPRV120V017	0.17	0.34	10.0	2.0	120	0.84	2.00	7.00
MPRV120V020	0.20	0.40	9.0	2.0	120	1.08	1.83	4.40
MPRV120V025	0.25	0.50	7.5	3.0	120	1.08	1.25	3.00
MPRV120V030	0.30	0.60	8.5	3.0	120	1.44	0.88	2.10
MPRV120V040	0.40	0.80	6.5	3.0	120	1.44	0.55	1.29
MPRV120V050	0.50	1.00	6.0	3.0	120	1.56	0.50	1.17
MPRV120V065	0.65	1.30	5.7	5.0	120	1.68	0.31	0.72
MPRV120V070	0.75	1.50	6.3	5.0	120	1.80	0.25	0.60
MPRV120V075	0.75	1.50	15.0	7.5	120	2.64	0.25	0.69
MPRV120V090	0.90	1.80	7.2	5.0	120	1.80	0.20	0.47
MPRV120V100	1.00	2.00	15.0	10.0	120	2.64	0.18	0.47
MPRV120V110	1.10	2.20	8.2	8.0	120	2.28	0.15	0.38
MPRV120V125	1.25	2.50	20.0	12.5	120	2.88	0.11	0.33
MPRV120V130	1.35	2.70	9.6	10.0	120	2.64	0.12	0.30
MPRV120V135	1.35	2.70	20.0	13.5	120	3.12	0.11	0.30
MPRV120V160	1.60	3.20	11.4	12.0	120	3.12	0.09	0.22
MPRV120V185	1.85	3.70	12.6	12.0	120	3.36	0.08	0.19
MPRV120V200	2.00	4.20	36.0	20.0	120	4.32	0.08	0.21
MPRV120V250	2.50	5.00	15.6	15.0	120	4.44	0.05	0.13
MPRV120V300	3.00	6.00	19.8	17.0	120	4.56	0.04	0.10
MPRV120V375	3.75	7.50	24.0	20.0	120	4.80	0.03	0.08

I_H=Hold current-maximum current at which the device will not trip at 23°C still air.

I_T=Trip current-minimum current at which the device will always trip at 23°C still air.

V_{MAX}=Maximum voltage device can withstand without damage at its rated current (I_{MAX}).

I_{MAX}= Maximum fault current device can withstand without damage at rated voltage (V_{MAX}).

P_d=Typical power dissipated-type amount of power dissipated by the device when in the tripped state in 23°C still air environment.

R_{min}=Minimum device resistance at 23°C prior to tripping.

R1_{MAX}=Maximum device resistance at 23°C measured 1 hour after tripping or reflow soldering of 260°C for 20 seconds.

Termination pad characteristics

Termination pad materials: Pure Tin

Product Dimensions (Millimeters)

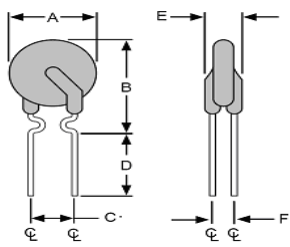


Figure 1
Lead Size: 24AWG
Φ 0.51 mm Diameter

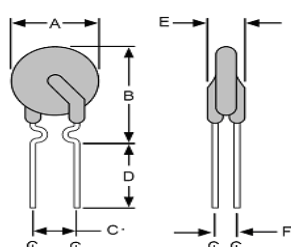


Figure 2
Lead Size: 22AWG
Φ 0.65 mm Diameter

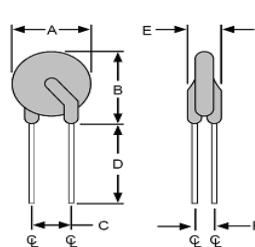


Figure 3
Lead Size: 20AWG
Φ 0.81 mm Diameter

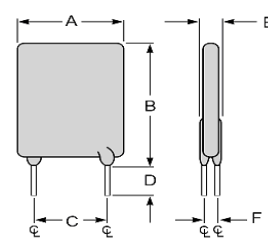


Figure 4
Lead Size: 20AWG
Φ 0.81 mm Diameter

Part Number	Figure	A	B	C	D	E	F
		Maximum	Maximum	Typical	Minimum	Maximum	Typical
MPRV120V010	1	7.9	13.0	5.1	7.6	3.8	2.2
MPRV120V017	1	7.9	13.0	5.1	7.6	3.8	2.2
MPRV120V020	2	7.9	13.0	5.1	7.6	3.8	2.2
MPRV120V025	2	7.9	13.0	5.1	7.6	3.8	2.2
MPRV120V030	2	7.9	13.0	5.1	7.6	3.8	2.2
MPRV120V040	2	8.2	14.2	5.1	7.6	3.8	2.2
MPRV120V050	2	9.2	14.9	5.1	7.6	3.8	2.2
MPRV120V065	2	9.7	14.9	5.1	7.6	3.8	2.2
MPRV120V070	2	10.6	15.5	5.1	7.6	3.8	2.2
MPRV120V075	4	10.9	17.0	5.1	7.6	4.1	2.2
MPRV120V090	2	11.9	15.9	5.1	7.6	3.8	2.2
MPRV120V100	4	11.5	20.1	5.1	7.6	4.1	2.2
MPRV120V110	3	13.3	18.3	5.1	7.6	4.1	2.2
MPRV120V125	4	14.0	21.7	5.1	7.6	4.1	2.2
MPRV120V130	3	15.5	20.6	5.1	7.6	4.1	2.2
MPRV120V135	4	16.3	21.7	5.1	7.6	4.1	2.2
MPRV120V160	3	17.5	22.5	5.1	7.6	4.1	2.2
MPRV120V185	3	19.9	24.9	5.1	7.6	4.1	2.2
MPRV120V200	4	23.5	27.9	10.2	7.6	4.1	2.2
MPRV120V250	3	22.5	27.5	10.2	7.6	4.1	2.2
MPRV120V300	3	25.5	30.0	10.2	7.6	4.1	2.2
MPRV120V375	3	29.5	34.0	10.2	7.6	4.1	2.2

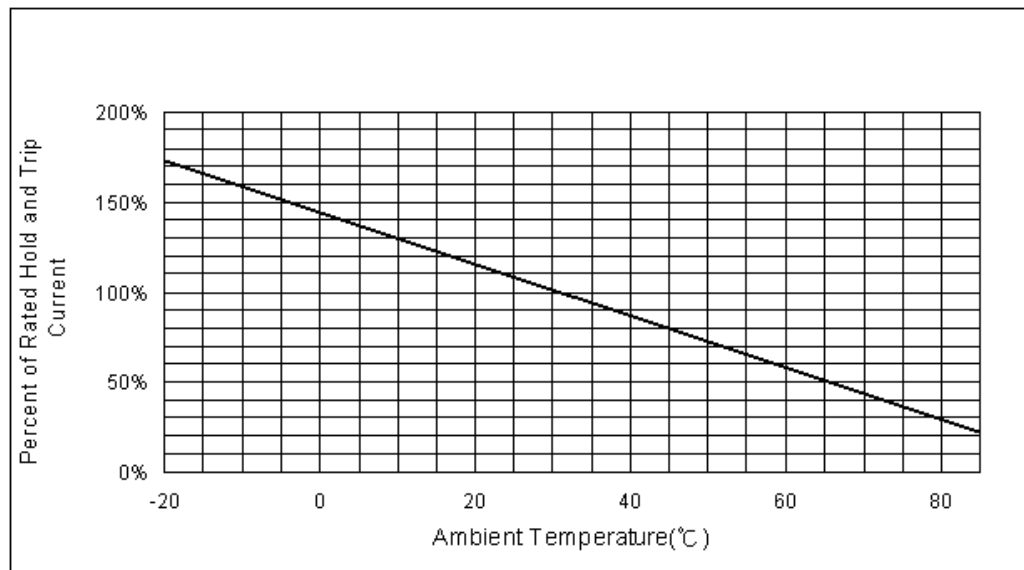
Polymeric PTC



MPRV Series

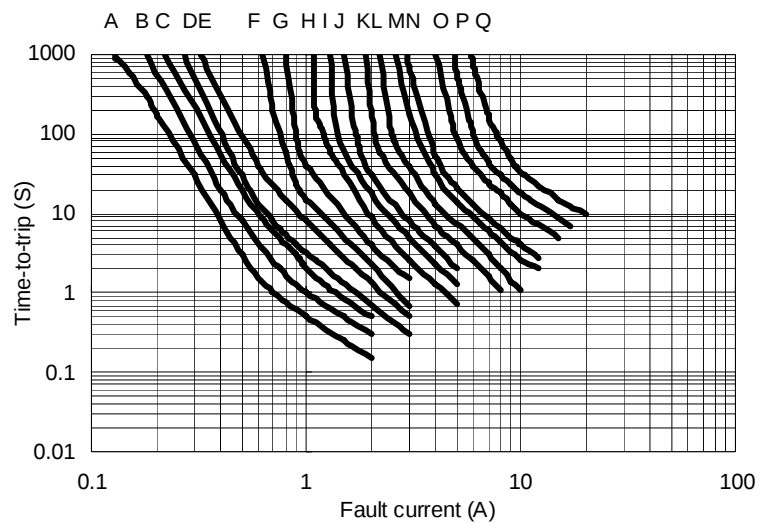
MERITEK

Thermal Derating Curve



Typical Time-To-Trip at 23°C

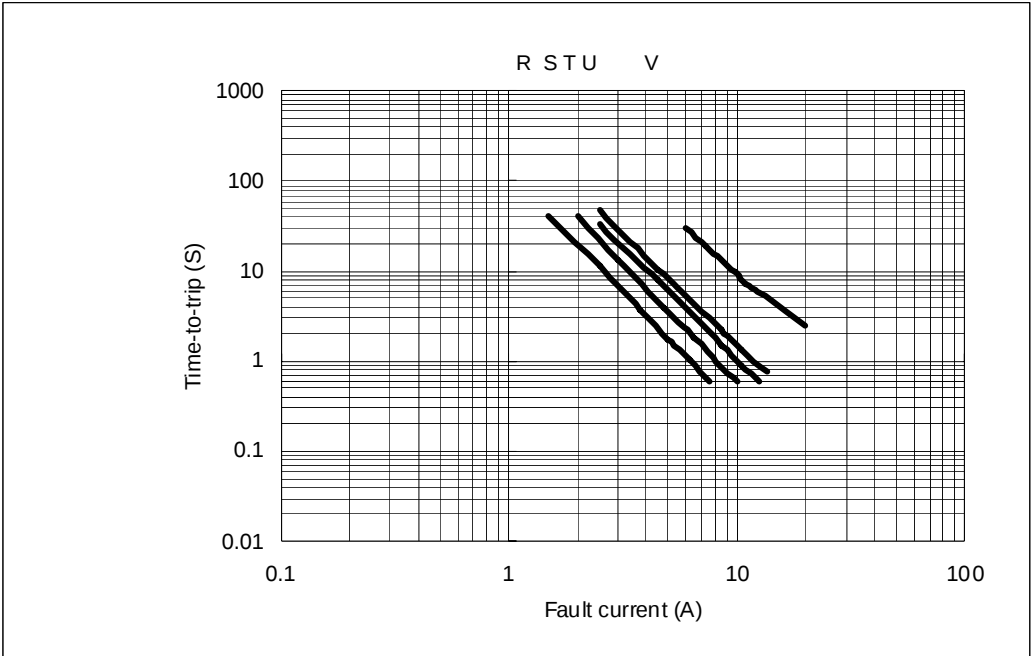
A = MPRV120V010
B = MPRV120V017
C = MPRV120V020
D = MPRV120V025
E = MPRV120V030
F = MPRV120V040
G = MPRV120V050
H = MPRV120V065
I = MPRV120V070
J = MPRV120V075
K = MPRV120V090
L = MPRV120V100
M = MPRV120V110
N = MPRV120V125
O = MPRV120V130
P = MPRV120V135
Q = MPRV120V160





Typical Time-To-Trip at 23°C

- R = MPRV120V185
- S = MPRV120V200
- T = MPRV120V250
- U = MPRV120V300
- V = MPRV120V375





Electrical Characteristics (23°C)

Part Number	Hold Current	Trip Current	Max.Time to Trip	Maximum Current	Rated Voltage	Max.Int Voltage	Typical Power	Resistance	
								RMIN	R1MAX
	I _H , A	I _T , A	at 5xI _H	I _{MAX} , A	V _{MAX} , VAC	V _{MAX} , VAC	P _d , W	ohms	ohms
MPRV240V005	0.05	0.12	15.0	1.0	240	265	0.70	18.50	65.00
MPRV240V008	0.08	0.19	15.0	1.2	240	265	0.80	7.40	26.00
MPRV240V012	0.12	0.30	15.0	1.2	240	265	1.00	3.00	12.00
MPRV240V016	0.16	0.37	15.0	2.0	240	265	1.40	2.50	7.80
MPRV240V025	0.25	0.56	18.5	3.5	240	265	1.50	1.30	3.80
MPRV240V033	0.33	0.74	18.5	4.5	240	265	1.70	0.83	2.60
MPRV240V040	0.40	0.90	24.0	5.5	240	265	2.00	0.60	1.90
MPRV240V055	0.55	1.25	26.0	7.0	240	265	3.40	0.45	1.45
MPRV240V075	0.75	1.50	18.0	7.5	240	265	2.60	0.32	0.84
MPRV240V100	1.00	2.00	21.0	10.0	240	265	2.90	0.22	0.58
MPRV240V125	1.25	2.50	23.0	12.5	240	265	3.30	0.17	0.44
MPRV240V200	2.00	4.00	28.0	20.0	240	265	4.50	0.09	0.22

I_H=Hold current-maximum current at which the device will not trip at 23°C still air.

I_T=Trip current-minimum current at which the device will always trip at 23°C still air.

V_{MAX}=Maximum voltage device can withstand without damage at its rated current (I_{MAX}).

I_{MAX}= Maximum fault current device can withstand without damage at rated voltage (V_{MAX}).

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R_{min}=Minimum device resistance at 23°C prior to tripping.

R1_{MAX}=Maximum device resistance at 23°C measured 1 hour after tripping or reflow soldering of 260°C for 20 seconds.

Termination pad characteristics

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Product Dimensions (Millimeters)

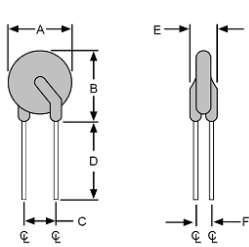


Figure 1
Lead Size: 24AWG
Ø 0.51 mm Diameter

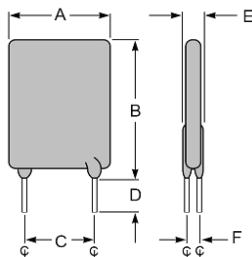


Figure 2
Lead Size: 22AWG
Ø 0.65 mm Diameter

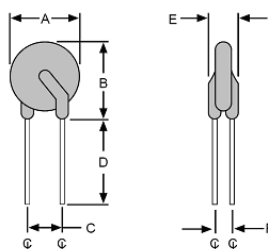


Figure 3
Lead Size: 20AWG
Ø 0.81 mm Diameter

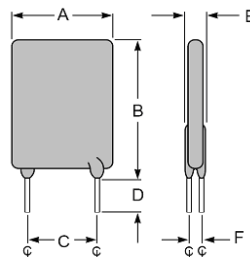


Figure 4
Lead Size: 20AWG
Ø 0.81 mm Diameter

Part Number	Figure	A	B	C	D	E	F
		Maximum	Maximum	Typical	Minimum	Maximum	Typical
MPRV240V005	1	8.3	10.7	5.1	7.6	3.8	1.6
MPRV240V008	1	8.3	10.7	5.1	7.6	3.8	1.6
MPRV240V012	1	8.3	10.7	5.1	7.6	3.8	1.6
MPRV240V016	1	9.9	12.5	5.1	7.6	3.8	1.6
MPRV240V025	2	9.6	17.4	5.1	7.6	3.8	1.8
MPRV240V033	2	11.4	16.5	5.1	7.6	3.8	1.8
MPRV240V040	2	11.5	19.5	5.1	7.6	3.8	1.8
MPRV240V055	3	14.0	21.7	5.1	7.6	4.1	1.9
MPRV240V075	3	11.5	23.4	5.1	7.6	4.8	1.9
MPRV240V100	4	18.7	24.4	10.2	7.6	5.1	1.9
MPRV240V125	4	21.2	27.4	10.2	7.6	5.3	1.9
MPRV240V200	3	24.9	33.8	10.2	7.6	6.1	1.9

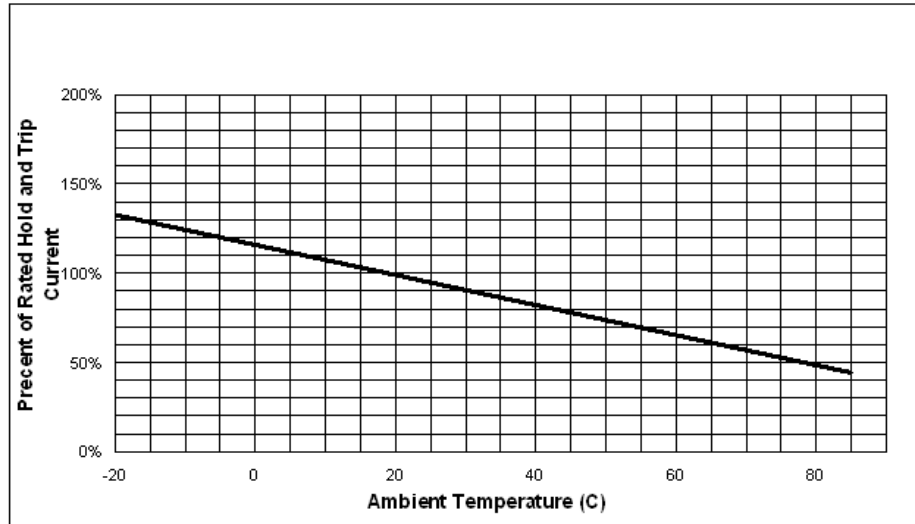
Polymeric PTC



MPRV Series

MERITEK

Thermal Derating Curve



Typical Time-To-Trip at 23°C

A= MPRV240V005
B= MPRV240V008
C= MPRV240V012
D= MPRV240V016
E= MPRV240V025
F= MPRV240V033
G= MPRV240V040
H= MPRV240V055
I= MPRV240V075
J= MPRV240V100
K= MPRV240V125
L= MPRV240V200

