SMVR240 Series

POSITIVE THERMAL COEFFICIENT(PTC)

Description

Positive Thermal Coefficient devices(PTC),provide over-current protection for electrical and electronic devices. They function using conducting strips of metal imbedded inside polymers. Under normal conditions, the devices resistance is near zero, but over-current conditions will heat the PTC and expand the polymer, increasing the impedance. When current returns to normal, the components cool down, returning to their original shape and very low levels of resistance.



Features

- I(hold): 0.05~2.0A
- 240V Operating voltages
- Radial leaded devices.
- Over-current protection
- Very high voltage surge capabilities.
- Available in lead-free version.
- Fast time_to_trip
- RoHS compliant, Lead- Free and Halogen-Free

Applications

- Over-current and over-temperature protection of automotive electronics
- Hard disk drives
- PC motherboards
- Point-of-sale (POS) equipment
- PCMCIA cards
- USB port protection - USB 2.0, 3.0 & OTG
- HDMI 1.4 Source protection
- Computers & peripherals
- Industrial control
- Security systems

Part Number Code

S	M	V	R	X	X	X	-	X	X	X

- S M: LOGO
- V R: AC
- X X X: Voltage rating(V_{DC})
- X X X: Hold current

Environmental Specifications

Test	Conditions	Resistance change
Passive aging	+85℃，1000hrs	±8% typical
Humidity aging	+85℃，85%R.H.1000hrs	±8% typical
Thermal shock	+125℃ to -55℃，10times	±12% typical
Resistance to solvent	MIL-STD-202，Method 215	No change
Vibration	MIL-STD-202，Method 201	No change

Electrical Characteristic

Model	I_{hold} (A)	I_T (A)	V_{max} (V)	Maximum Time to Trip		I_{max} (A)	Pd_{typ} (W)	Resistance(Ω)	
				Current(A)	Time(S)			Ri_{min}	$R1_{max}$
SMVR240-005	0.05	0.12	AC240	0.25	15	1.0	0.3	18.00	50.00
SMVR240-008	0.08	0.19	AC240	0.40	15	1.2	0.51	7.40	20.00
SMVR240-012	0.12	0.30	AC240	0.60	15	1.2	0.6	3.00	12.00
SMVR240-016	0.16	0.37	AC240	0.80	15	2.0	0.52	2.50	7.80
SMVR240-025	0.25	0.56	AC240	1.25	18.5	3.5	0.52	1.30	4.00
SMVR240-033	0.33	0.74	AC240	1.65	21	4.5	0.59	1.20	3.50
SMVR240-040	0.40	0.90	AC240	2.00	24	5.5	0.66	0.81	2.50
SMVR240-055	0.55	1.25	AC240	2.75	26	7.0	0.80	0.45	1.45
SMVR240-075	0.75	1.50	AC240	3.75	14	7.5	0.90	0.40	1.10
SMVR240-100	1.00	2.00	AC240	5.00	13.6	10.0	0.95	0.20	0.60
SMVR240-125	1.25	2.50	AC240	6.25	18	12.5	1.0	0.12	0.32
SMVR240-135	1.35	2.70	AC240	6.75	20	13.5	1.51	0.10	0.30
SMVR240-200	2.00	4.20	AC240	10.00	36	20.0	1.71	0.089	0.22

I_H=Hold current: maximum current at which the device will not trip at 25℃ still air.

I_T=Trip current: minimum current at which the device will nalways at 25℃ still air.

V_{max}=Maximum voltage device can withstand without damage at rated current.

I_{max}=Maximum fault current device can withstand tithout damage at rated voltage.

T_{trip}=Maximum time to trip(s) at assigned current.

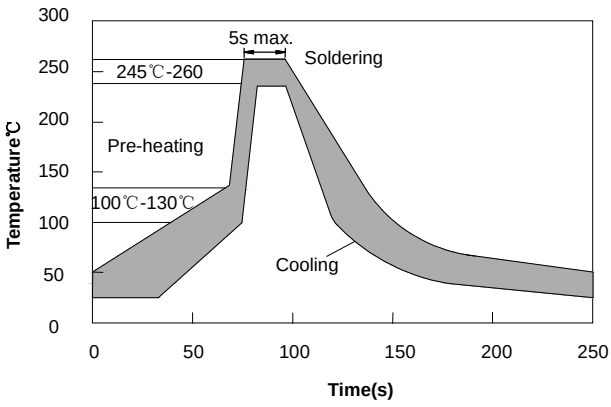
P_d=Typical power dissipation: typical amount of power dissipated by the decice when in state air environment.

Ri_{min}=Minimum device resistance at 25℃ prior to tripping.

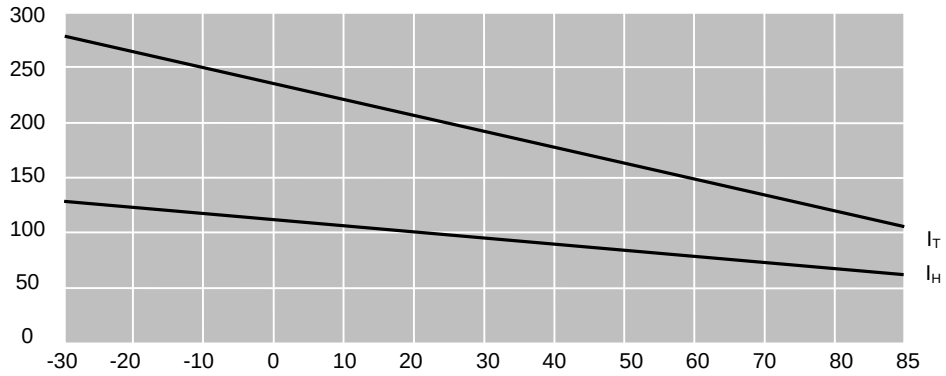
$R1_{max}$=Maximum device resistance is measured one hour post reflow.

Solder reflow conditions

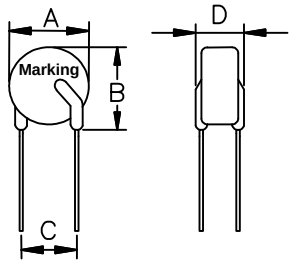
Wave Soldering
Soldering Temperature:260℃~270℃
Soldering Time:≤3sec.
Soldering Position: Resettable fuse wire and the bottom ≥ 6mm。
Manual soldering
Soldering Temperature:250℃~280℃
Soldering Time:≤3sec.
Soldering Position: Resettable fuse wire and the bottom ≥ 6mm。



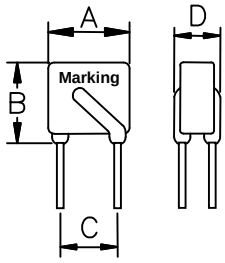
Environmental temperature and I_H,I_T



Product Dimensions



Pig.1



Pig.2

Type Number	Dimensions（mm）					Dimensions（in）					Shape
	A(max)	B(max)	C(typ)	D(max)	LeadΦ (typ)	A(max)	B(max)	C(typ)	D(max)	LeadΦ (typ)	Fig
SMVR240-005	8.3	12.9	5.1	3.8	0.5	0.327	0.508	0.201	0.15	0.02	1
SMVR240-008	8.3	10.7	5.1	3.8	0.5	0.327	0.421	0.201	0.15	0.02	1
SMVR240-012	8.3	10.7	5.1	3.8	0.5	0.327	0.421	0.201	0.15	0.02	1
SMVR240-016	9.9	13.8	5.1	3.8	0.6	0.390	0.543	0.201	0.15	0.024	1
SMVR240-025	9.6	18.8	5.1	3.8	0.6	0.378	0.740	0.201	0.15	0.024	2
SMVR240-033	12.5	19.0	5.1	3.8	0.8	0.449	0.748	0.201	0.15	0.031	2
SMVR240-040	11.5	20.9	5.1	3.8	0.8	0.453	0.823	0.201	0.15	0.031	2
SMVR240-055	14.0	22.4	5.1	3.8	0.8	0.551	0.882	0.201	0.15	0.031	2
SMVR240-075	12.5	23.4	5.1	3.8	0.8	0.492	0.921	0.201	0.15	0.031	2
SMVR240-100	14.0	20.1	10.2	4.1	0.8	0.551	0.791	0.402	0.161	0.031	1
SMVR240-125	14.0	21.7	5.1	4.1	0.8	0.551	0.854	0.201	0.161	0.031	2
SMVR240-135	16.3	21.7	5.1	4.1	0.8	0.642	0.854	0.201	0.161	0.031	2
SMVR240-200	23.5	31.8	10.2	4.1	0.8	0.925	1.252	0.402	0.161	0.031	2

Packaging

Part Number	Quantity
SMVR240-005~SMVR240-200	500pcs/bag