

**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.



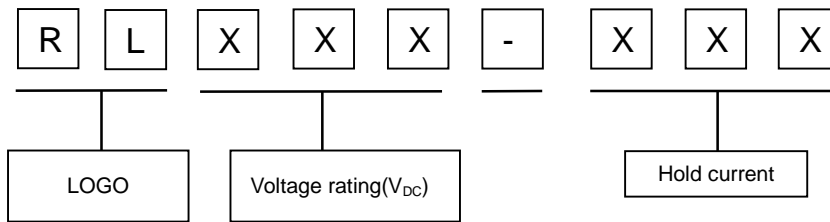
**Features**

- I I(hold): 0.02~2.0A
- I 250V Operating voltages
- I Radial leaded devices.
- I Over-current protection
- I Very high voltage surge capabilities.
- I Available in lead-free version.
- I Fast time-to-trip
- I RoHS compliant, Lead- Free and Halogen-Free

**Applications**

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

**Part Number Code**



**Environmental Specifications**

Test	Conditions	Resistance change
Passive aging	+85°C, 1000hrs	±8% typical
Humidity aging	+85°C, 85%R.H.1000hrs	±8% typical
Thermal shock	+125°C to -55°C, 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 <sub>hold</sub> (A)	I <sub>T</sub> (A)	V <sub>max</sub> (V)	Maximum Time to Trip		I <sub>max</sub> (A)	Pd <sub>Typ</sub> (W)	Resistance(Ω)	
				Current(A)	Time(S)			Ri <sub>min</sub>	R1 <sub>max</sub>
RL250-020	0.02	0.04	250	0.5	0.5	3	1.0	80	240
RL250-030	0.03	0.06	250	0.5	0.5	3	1.0	40	180
RL250-040	0.04	0.08	250	0.5	2	3	1.0	27	100
RL250-050	0.05	0.10	250	0.5	1.5	3	1.0	20	90
RL250-060	0.06	0.12	250	0.5	2	3	1.0	20	90
RL250-080	0.08	0.16	250	1	0.5	3	1.0	12	33
RL250-090	0.09	0.18	250	1	0.8	3	1.0	10	33
RL250-100	0.10	0.20	250	1	1.0	3	1.0	10	31
RL250-110	0.11	0.22	250	1	2.0	3	1.0	6	18
RL250-120	0.12	0.24	250	1	2.0	3	1.0	5	18
RL250-145	0.145	0.29	250	1	5	3	1.0	3	14
RL250-180	0.18	0.50	250	3	3	3	1.0	0.8	6
RL250-200	0.20	0.40	250	3	5	5	1.5	1.5	9
RL250-300	0.30	0.60	250	3	6	5	1.5	1.0	9
RL250-400	0.40	0.80	250	3	8	5	2.5	0.75	6
RL250-500	0.50	1.00	250	3	10	5	2.5	0.45	5
RL250-600	0.60	1.20	250	3	12	5	3.0	0.5	5
RL250-800	0.80	1.60	250	5	18	5	3.5	0.4	3
RL250-1000	1.00	2.00	250	5	20	7	4.0	0.28	2.5
RL250-1200	1.20	2.40	250	6	15	3	5.0	0.2	2.5
RL250-1500	1.50	3.00	250	7.5	14	3	6.0	0.13	2.0
RL250-2000	2.00	4.00	250	10	14	5	6.0	0.12	1.5

I<sub>H</sub>=Hold current: maximum current at which the device will not trip at 25°C still air.

I<sub>T</sub>=Trip current: minimum current at which the device will nalways at 25°C still air.

V<sub>max</sub>=Maximum voltage device can withstand without damage at rated current.

I<sub>max</sub>=Maximum fault current device can withstand tithout damage at rated voltage.

T<sub>trip</sub>=Maximum time to trip(s) at assigned current.

P<sub>d</sub>=Typical power dissipation: typical amount of power dissipated by the decice when in state air environment.

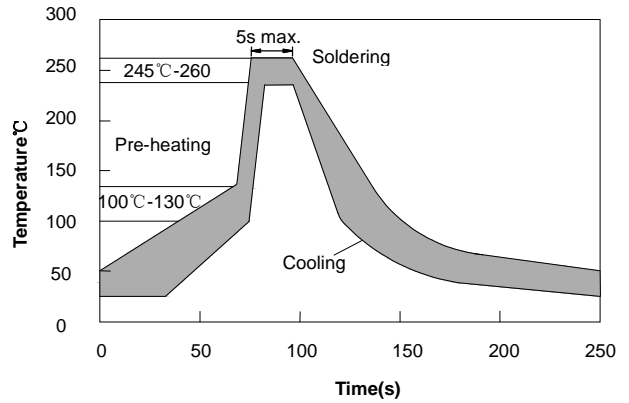
Ri<sub>min</sub>=Minimum device resistance at 25°C prior to tripping.

R1<sub>max</sub>=Maximum device resistance is measured one hour post reflow.

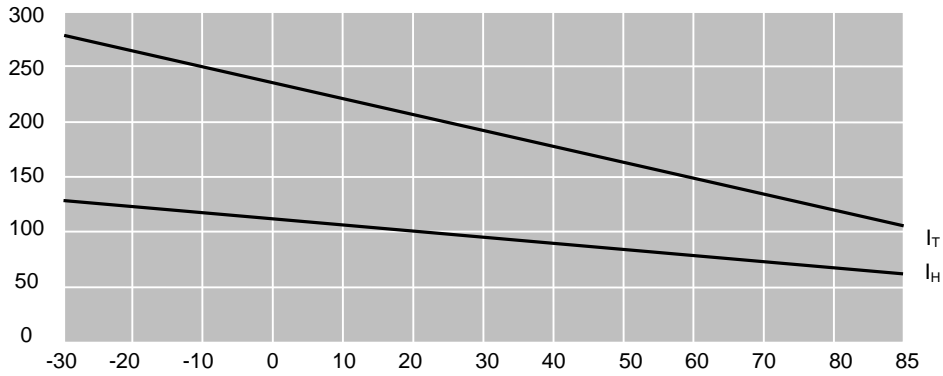


**Solder reflow conditions**

<b>Wave Soldering</b>
Soldering Temperature: 260°C ~ 270°C
Soldering Time: ≤ 3sec.
Soldering Position: Resettable fuse wire and the bottom ≥ 6mm.
<b>Manual soldering</b>
Soldering Temperature: 250°C ~ 280°C
Soldering Time: ≤ 3sec.
Soldering Position: Resettable fuse wire and the bottom ≥ 6mm.



**Environmental temperature and  $I_H, I_T$**



**Product Dimensions**

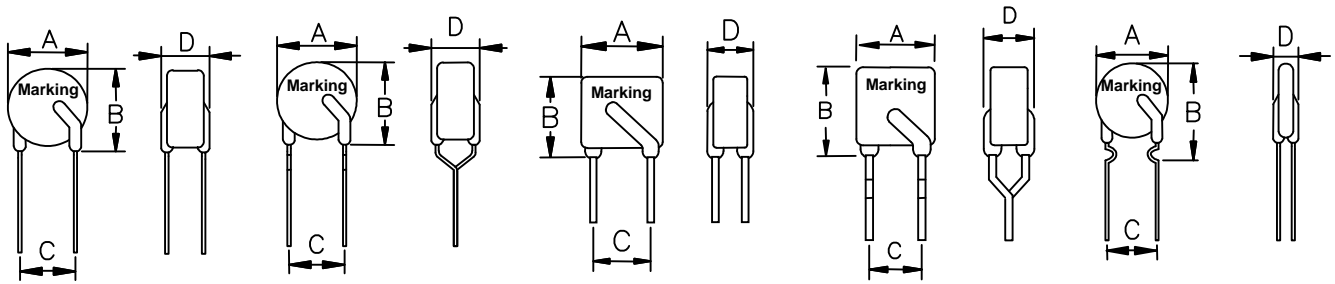


Fig.1

Fig.2

Fig.3

Fig.4

Fig.5

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
RL250-020	7.4	12.7	5.1	4.5	0.6	0.291	0.500	0.201	0.177	0.024	2
RL250-030	7.4	12.7	5.1	4.5	0.6	0.291	0.500	0.201	0.177	0.024	2
RL250-040	7.4	12.7	5.1	4.5	0.6	0.291	0.500	0.201	0.177	0.024	2
RL250-050	7.4	12.7	5.1	4.5	0.6	0.291	0.500	0.201	0.177	0.024	2
RL250-060	7.4	12.7	5.1	4.5	0.6	0.291	0.500	0.201	0.177	0.024	2
RL250-080	7.4	12.7	5.1	4.5	0.6	0.291	0.500	0.201	0.177	0.024	2
RL250-090	7.4	12.7	5.1	4.5	0.6	0.291	0.500	0.201	0.177	0.024	2
RL250-100	7.0	9.3	5.1	4.5	0.6	0.276	0.366	0.201	0.177	0.024	1
RL250-110	7.0	12.6	5.1	4.5	0.6	0.276	0.496	0.201	0.177	0.024	4
RL250-120	7.1	12.6	5.1	4.5	0.6	0.28	0.496	0.201	0.177	0.024	4
RL250-145	7.1	12.6	5.1	4.5	0.6	0.28	0.496	0.201	0.177	0.024	4
RL250-180	10.2	14.5	5.1	4.5	0.6	0.402	0.571	0.201	0.177	0.024	2
RL250-200	12	17	5.1	4.5	0.6	0.472	0.669	0.201	0.177	0.024	2
RL250-300	12	17	5.1	4.5	0.6	0.472	0.669	0.201	0.177	0.024	2
RL250-400	12	17	5.1	4.5	0.6	0.472	0.669	0.201	0.177	0.024	5
RL250-500	16	18	5.1	4.5	0.8	0.63	0.709	0.201	0.177	0.031	1
RL250-600	16	18	5.1	4.5	0.8	0.63	0.709	0.201	0.177	0.031	1
RL250-800	20	22	5.1	4.5	0.8	0.787	0.866	0.201	0.177	0.031	1
RL250-1000	20	22	5.1	4.5	0.8	0.787	0.866	0.201	0.177	0.031	1
RL250-1200	22	28	5.1	4.5	0.8	0.866	1.102	0.201	0.177	0.031	1
RL250-1500	25	30	5.1	4.5	0.8	0.984	1.181	0.201	0.177	0.031	3
RL250-2000	26	32	10.2	4.5	0.8	1.024	1.26	0.402	0.177	0.031	3

**Packaging**

Part Number	Quantity
RL250-020~RL250-1000	1000pcs/bag
RL250-1200~RL250-2000	500pcs/bag

