

ELECTRONICS



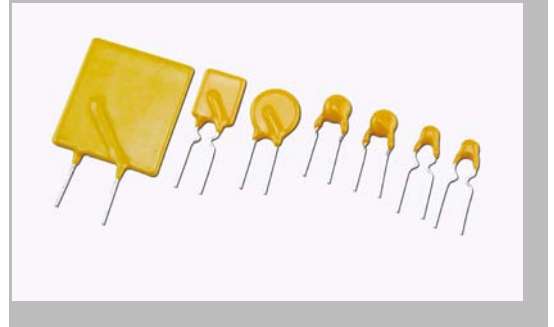
Positive Thermal Coefficient

RL600 Series

Positive Thermal Coefficient - RL600 Series

Features

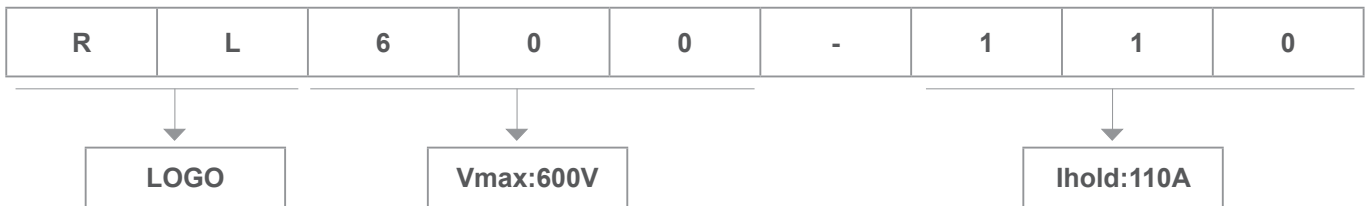
1. I(hold):110~160mA
2. 600V Operating voltages
3. Radial leaded devices.
4. Very high voltage surge capabilities.
5. Available in lead-free version.
6. Fast time-to-trip
7. RoHS compliant, Lead- Free and Halogen-Free



Applications

1. Overcurrent and overtemperature
 2. protection of automotive electronics
 3. Hard disk drives
 4. PC motherboards
 5. PC peripherals
- Point-of-sale (POS) equipment
 - PCMCIA cards
 - USB port protection
 - HDMI 1.4 Source protection
 - Computers & peripherals
 - General Electronics

Product Name



Positive Thermal Coefficient - RL600 Series

Dimension

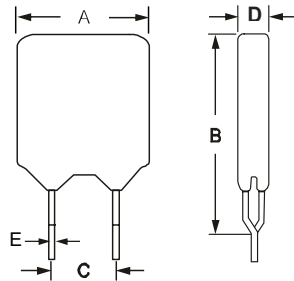


Fig.1

Type Number	Ihold	Vmax	Itrip	Ttrip		I _{max}	R _{max}	R _{min}	Package Dimensions (mm)					Circuit Figure
	A	V	A	Current A	Times S	A	Ω	Ω	A	B	C	D	E	
RL600-110	0.11	600	0.3	0.5	1.5	3	14	7	14	14	5.1	6.1	0.8	Fig.1
RL600-150	0.15	600	0.3	1.5	0.15	3	12	6	14	14	5.1	6.1	0.8	Fig.1
RL600-160	0.16	600	0.32	1.5	0.15	3	10	4	14	14	5.1	6.1	0.8	Fig.1

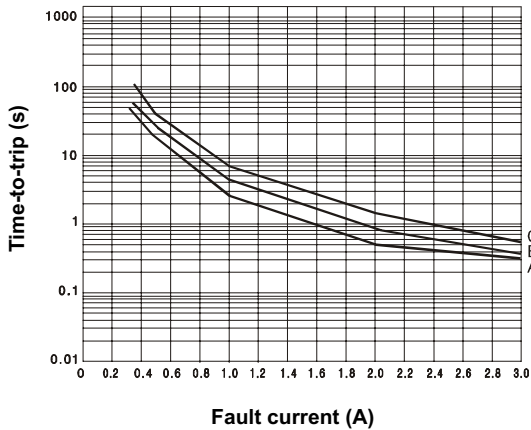
I hold = Hold Current. Maximum current device will not trip in 25°C still air.
 I trip = Trip Current. Minimum current at which the device will always trip in 25°C still air.
 V max = Maximum operating voltage device can withstand without damage at rated current (I_{max}).
 I max = Maximum fault current device can withstand without damage at rated voltage (V max).
 R min/max = Minimum/Maximum device resistance prior to tripping at 25°C.

Environmental Specifications

Test	Conditions	Resistance change
Passive aging	+85°C, 1000 hrs	±5% typical
Humidity aging	+85°C, 85% R.H., 168 hours	±5% typical
Thermal shock	+85°C to -40°C, 20 times	±33% typical
Resistance to so vent	MIL-STD-202, Method 215	Nn change
Vibration	MIL-STD-202, Method 201	Nn change
Ambient operating conditions: -40°C to +85°C		
Maximum surface temperature of the device in the tripped state is 125°C		

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TYPICAL TIME-TO-TRIP CHARTS @ 25°C

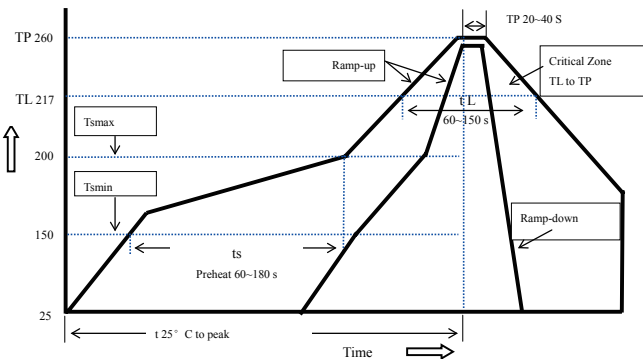


A = RL600-110
 B = RL600-150
 C = RL600-160

STORAGE RECOMMENDATIONS

1. Storage Temperature : -10 °C~+40°C
2. Relative Humidity : ≤ 80%RH
3. Keep away from corrosive atmosphere and sunlight.
4. Period of Storage: 1 year.

Soldering Parameters



Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate(Ts max to T p)	3°C/second mac.
Preheat	
-Temperature Min(Ts min)	150°C
-Temperature Max(Ts max)	200°C
-Time(Ts min to Ts max)	60~180 seconds
Time maintained above:	
-Temperature(TL)	+217°C
-Time(tL)	60~150 seconds
Peak Temperature(Tp)	260°C
Ramp-Down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max
Storage Condition	0°C~35°C,70%RH

Recommended reflow methods: IR, vapor phase oven, hot air oven, N2 environment for lead-free

Recommended maximum paste thickness is 0.25mm
 Devices can be cleaned using standard industry methods and solvents.

Note 1: All temperature refer to topside of the package, measured on the package body surface.

Note 2: If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

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TEST PROCEDURES AND REQUIREMENT

Test	Test Conditions	Accept/Reject Criteria
Resistance	In still air @25°C	$R_{min} \leq R \leq R_{max}$
Time to Trip	Specified current, V_{max} , 25°C	$T \leq \text{max. Time to trip}(T_{trip})$
Hold Current	30 min, at I_H	No trip
Trip Cycle Life	V_{max} , I_{max} , 100 cycles	No arcing or burning
Trip Endurance	V_{max} , 24hours	No arcing or burning

Ihold Versus Temperature

Type Number	-20°C	0°C	25°C	30°C	40°C	50 °C	60°C	70°C	85°C
RL600-110	152	131	110	100	91	80	70	61	46
RL600-150	207	179	150	137	125	110	96	83	63
RL600-160	221	190	160	146	133	117	102	88	67

Warehouse Storage Conditions of Products

- Storage Conditions:
 1. Storage Temperature: -10°C~+40°C
 2. Relative Humidity: ≤75%RH
 3. Keep away from corrosive atmosphere and sunlight.
- Period of Storage: 1 year

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