

Positive Thermal Coefficient Diodes

RLVR240-012~055 Series

The RLVR240 Series is designed to protect against short duration high voltage fault currents (power cross or power induction surge) typically found in telecom applications. The series can be used to help telecom networking equipment meet the protection requirements specified in ITU K.20 and K.21.

Features

- 0.12 – 0.55 hold current range, 240VAC operating voltage
- 240VAC interrupt rating
- Fast time-to-trip
- Binned and sorted narrow resistance ranges available
- RoHS compliant, Lead- Free and Halogen-Free*

Applications

- Customer Premises Equipment (CPE)
- Central Office (CO)/ telecom centers
- LAN/WAN equipment
- Access equipment
- PC peripherals
- Point-of-sale (POS) equipment
- PCMCIA cards
- USB port protection - USB 2.0, 3.0 & OTG
- HDMI 1.4 Source protection
- Computers&peripherals
- General Electronics

ROHS



Dimension

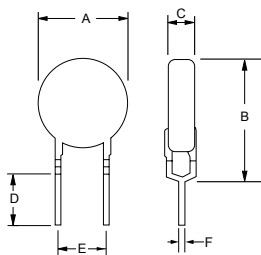


Figure 1

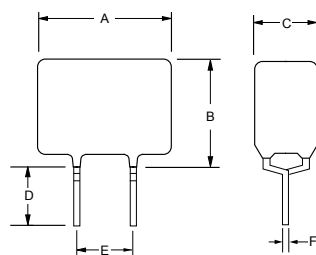
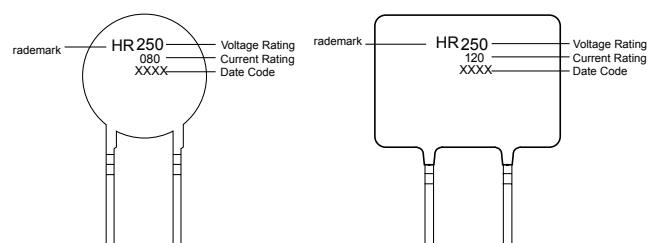


Figure 2

Part Marking System



Type Number	Figure	A	B	C	D	E	F
		mm	mm	mm	mm	mm	mm
		Max	Max	Max	Min	typ	Min
RLVR240-012	1	8.3	12.9	3.8	7.6	5.1	0.6
RLVR240-016	1	9.9	13.8	3.8	7.6	5.1	0.6
RLVR240-025	2	9.6	18.8	3.8	7.6	5.1	0.6
RLVR240-033	2	11.4	29.0	3.8	7.6	5.1	0.6
RLVR240-040	2	11.5	20.9	3.8	7.6	5.1	0.6
RLVR240-055	2	14.0	22.4	4.1	7.6	5.1	0.6

Electrical Characteristics

Type Number	I _{hold}	I _{trip}	V _{max}	I _{max}	P _d max.	Resistance	
	(A)	(A)	(VAC)	(A)	(W)	R _{min} (Ω)	R _{1max} (Ω)
RLVR240-012	0.12	0.30	240	1	1	3.0	6.5
RLVR240-016	0.16	0.37	240	3	1.5	2.5	4.1
RLVR240-025	0.25	0.56	240	3	1.5	1.3	2.1
RLVR240-033	0.33	0.74	240	3	1.5	0.77	1.24
RLVR240-040	0.40	0.90	240	3	1.5	0.60	0.97
RLVR240-055	0.55	1.25	240	3	1.5	0.45	0.73

I_{hold} = Hold current: maximum current device will pass without tripping in 23°C still air.

R_{min} = Minimum resistance of device in initial (un-soldered) state.

I_{trip} = Trip current: minimum current at which the device will trip in 23°C still air.

R_{typ} = Typical resistance of device in initial (un-soldered) state.

V_{int} = Maximum voltage the device can withstand without damage at rated current (I_{max})

V_{op} = The device regular operation voltage

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

P_d = Power dissipated from device when in the tripped state at 23°C still air.

R_{1max} = Maximum resistance of device at 20°C measured one hour after tripping.

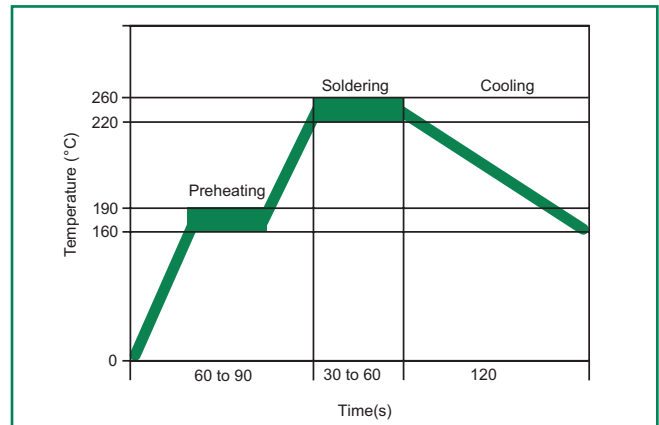
Caution: Operation beyond the specified rating may result in damage and possible arcing and flame.

Soldering Parameters - Solder Reflow

Condition	Reflow
Peak Temp/ Duration Time	260°C \geq 5 Sec
$\geq 220^{\circ}\text{C}$	30 Sec ~ 60 Sec
Preheat 160°C ~ 190°C	60 Sec ~ 90 Sec
Storage Condition	0°C~35°C, \leq 70%RH

- Recommended reflow methods: IR, vapor phase oven, hot air oven, N₂ environment for lead-free.
- Devices are not designed to be wave soldered to the bottom side of the board.
- Devices can be cleaned using standard industry methods and solvents.

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



Physical Specifications

Lead Material	Tin-plated Copper
Soldering Characteristics	Solderability per MIL-STD-202, Method 208E
Insulating Material	Cured, flame retardant epoxy polymer meets UL94V-0 requirements.
Device Labeling	Marked with 'LF', voltage, current rating, and date code.

Environmental Specifications

Operating/Storage Temperature	-40°C to +85°C
Maximum Device Surface Temperature in Tripped State	125°C
Passive Aging	65°C/85°C, 1000 hours
Humidity Aging	+85°C, 85% R.H., 1000 hours
Thermal Shock	MIL-STD-202F, Method 107G +125°C to -55°C 10 times
Solvent Resistance	MIL-STD-202, Method 215F
Moisture Sensitivity Level	Level 1, J-STD-020C

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