



SLT-Axial Leaded Strap Lead(Pb) Free PTC Devices





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Description



- The new SLT Axial Leaded Strap Lead(Pb) Free PTC device are designed based on a proprietary conductive polymer material, to provide both overcurrent and overtemperature protection for rechargeable battery cells.
- The SLT Axial Leaded Strap Lead(Pb) Free devices featuring a slim, low profile and low resistance design and are ideal to install directly on the latest generations of battery cells for longer battery run time.
- SLT products provide reliable, noncycling protection against overcharging and short circuits events and increase the battery safety level.



Agency Approval and Environmental Compliance

Agency	File Number	Regulation	Standard
	E201431		2002/95/EC
	R50103314		IEC 61249-2-21:2003

Electrical Characteristics

Part Number	I _{hold} (A)	I _{trip} (A)	V _{max} (Vdc)	I _{max} (A)	P _{d typ} (W)	Maximum Time To Trip		Resistance			Agency Approval	
						Current (A)	Time (Sec.)	R _{min} (Ω)	R _{max} (Ω)	R _{1max} (Ω)		
SLT140GF	1.40	3.60	6	50	1.0	7.0	3.0	0.010	0.020	0.035	✓	✓
SLT180GWF	1.80	5.20	6	50	1.0	9.0	5.0	0.007	0.015	0.026	✓	✓
SLT190GF	1.90	4.90	6	50	1.0	9.5	3.0	0.007	0.015	0.024	✓	✓
SLT250GUF	2.50	6.20	6	50	1.0	12.5	2.0	0.006	0.016	0.028	✓	✓
SLT270GF	2.70	6.20	6	50	1.0	13.5	2.0	0.006	0.013	0.024	✓	✓
SLT310GF	3.10	7.00	6	50	1.0	15.5	3.0	0.006	0.012	0.022	✓	✓
SLT350GWF	3.50	7.80	6	50	1.2	17.5	5.0	0.007	0.014	0.018	✓	✓
SLT370GF	3.70	8.00	6	50	1.2	18.5	5.0	0.005	0.010	0.018	✓	✓
SLT370RF	3.70	8.00	6	50	1.2	18.5	5.0	0.005	0.012	0.020	✓	✓
SLT420GF	4.20	9.00	6	50	1.2	21.0	5.0	0.004	0.009	0.016	✓	✓
SLT500GF	5.00	10.00	6	50	1.2	25.0	5.0	0.003	0.009	0.015	✓	✓
SLT350GUF-AL	3.50	7.60	6	50	1.2	18.5	5	0.005	0.015	0.026	✓	✓

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How to Select a Polymer PTC fuse

(1) Determine the following operating parameters for the circuits:

- (A) Normal Operating Current (I hold)
- (B) Maximum Circuit Voltage (V max)
- I Maximum Interrupt Current (I max)
- (D) Normal Operating Temperature (min °C /max °C)

(2) Select the device form factor and dimension suitable for the application:

- Axial Leaded Strap Device (SLT, SLD, SLH, VTD, LTD, LRD, STD, LTD Series)
- Surface Mount Device (SMD Series)
- Radial Leaded Device (RLD Series)
- Other Custom-designed Device (Disc/Chip)

(3) Compare the maximum ratings for V max and I max of the PTC device with the circuit in application and make sure that the circuit's requirement does not exceed the device ratings.

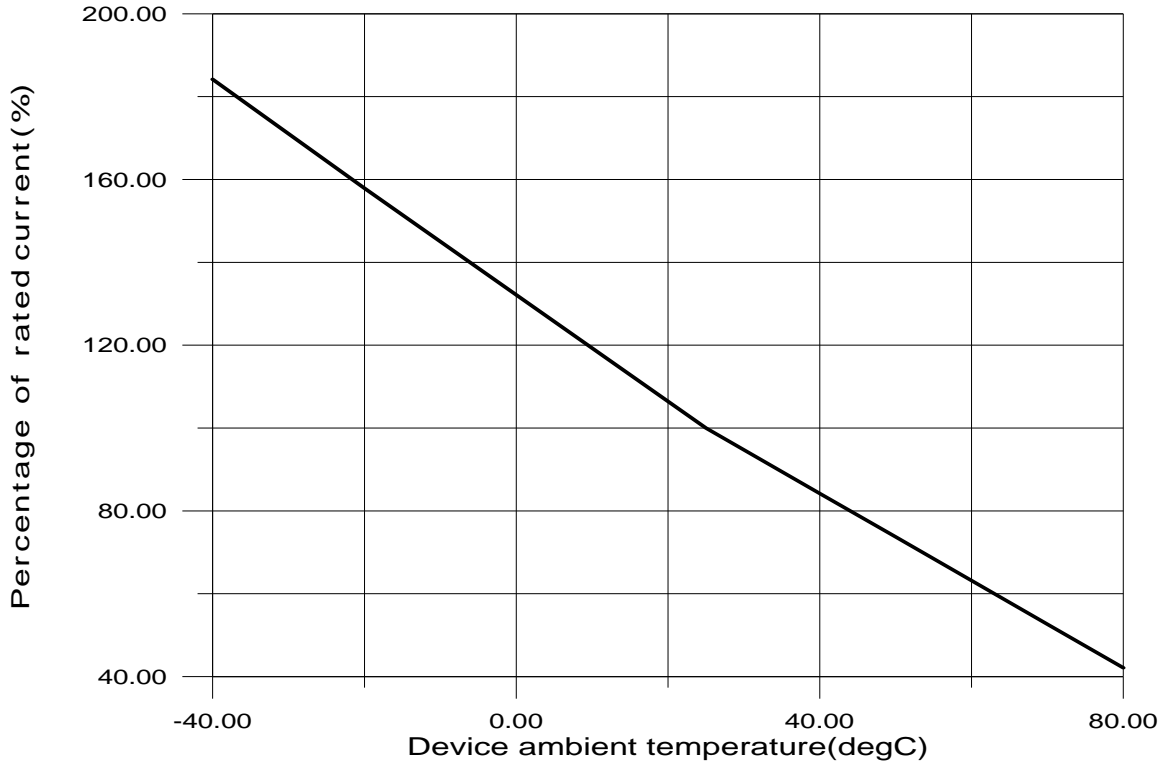
(4) Check that the PTC device's trip time (time-to-trip) will protect the circuit.

(5) Verify that the circuit operating temperatures are within the PTC device's normal operating temperature range.

(6) Verify the performance and suitability of the chosen PTC device in the application.

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THERMAL DERATING CURVE FOR SLT SERIES

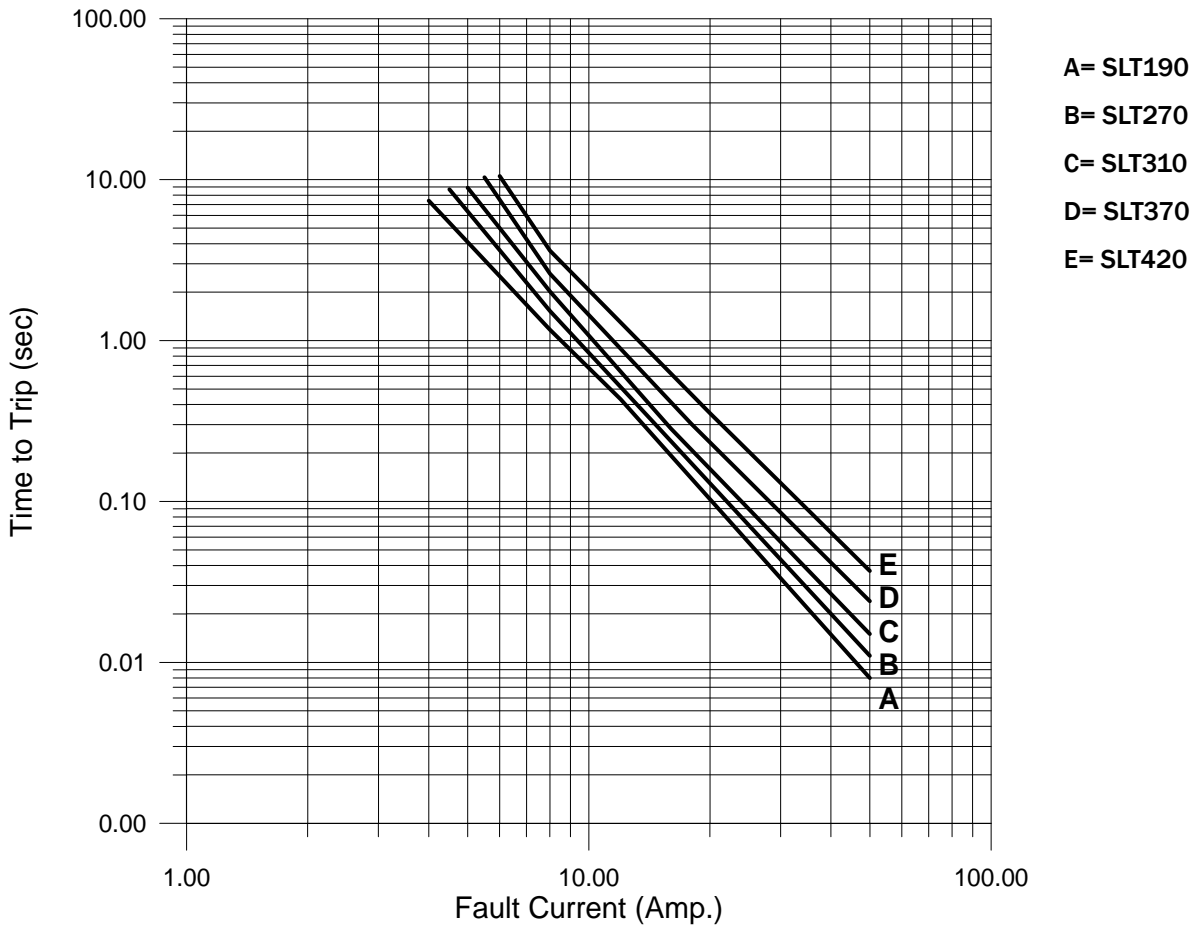


THERMAL DERATING CHART FOR SLD SERIES - Ihold (Amps)

Model	Ambient Operation Temperature							
	-40 °C	-20 °C	0 °C	25 °C	40 °C	50 °C	60 °C	70 °C
SLT140GF	2.70	2.30	1.90	1.40	1.10	0.90	0.70	0.50
SLT180GWF	3.60	3.00	2.45	1.80	1.35	1.05	0.80	0.55
SLT190GF	3.80	3.20	2.60	1.90	1.50	1.20	0.90	0.60
SLT250GWF	4.80	4.20	3.50	2.50	2.00	1.65	1.30	0.95
SLT270GF	5.40	4.60	3.80	2.70	2.15	1.80	1.40	1.00
SLT310GF	5.70	4.70	4.00	3.10	2.50	2.10	1.80	1.40
SLT350GWF	6.00	5.15	4.25	3.50	2.80	2.30	1.90	1.50
SLT370GF	6.40	5.60	4.60	3.70	2.95	2.40	2.00	1.60
SLT370RF	6.40	5.60	4.60	3.70	2.95	2.40	2.00	1.60
SLT420GF	7.40	6.40	5.30	4.20	3.40	2.90	2.40	1.80
SLT500GF	9.00	7.80	6.50	5.00	4.00	3.40	2.80	2.10
SLT350GUF-AL	6.30	5.50	4.60	3.50	2.90	2.40	2.00	1.60

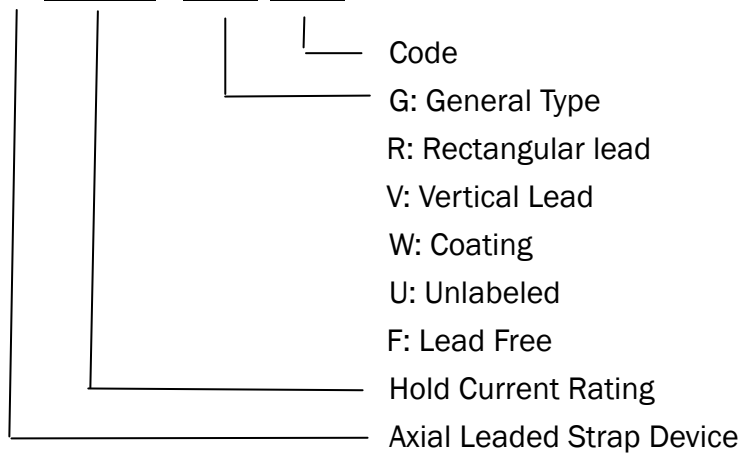
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AVERAGE TIME-CURRENT CURVE FOR SLT SERIES



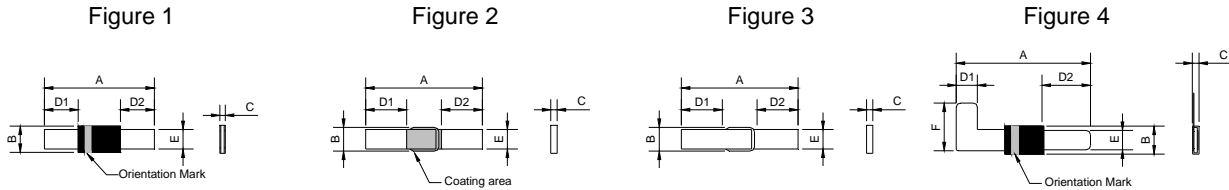
PART NUMBERING SYSTEM

SLT -



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PHYSICAL DIMENSIONS (mm)



Part Number	Fig	A		B		C		D / D1		D2		E / E1		E2		F	
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
SLT140GF	1	13.8	15.4	2.7	3.1	0.55	0.95	4.75	5.75	4.75	5.75	2.2	2.4	-	-	-	-
SLT180GWF	2	11.25	12.85	2.4	2.8	0.4	0.8	2.4	2.6	-	-	2.4	2.6	-	-	-	-
SLT190GF	1	13.2	14.8	2.7	3.1	0.6	1.0	4.5	5.7	4.5	5.7	2.4	2.6	-	-	-	-
SLT250GUF	3	8.9	10.5	2.2	2.5	0.4	0.8	1.9	2.1	-	-	2.8	3.0	-	-	-	-
SLT270GF	1	13.2	14.8	2.6	3.0	0.6	1.0	4.4	5.6	4.4	5.6	2.2	2.4	-	-	-	-
SLT310GF	1	13.0	14.6	2.7	3.1	0.6	1.0	4.3	5.5	4.3	5.5	2.2	2.4	-	-	-	-
SLT350GWF	2	11.35	12.35	2.3	2.7	0.4	0.8	2.4	2.6	-	-	2.8	3.0	-	-	-	-
SLT370GF	1	13.0	14.6	2.7	3.1	0.6	1.0	4.1	5.3	4.1	5.3	2.2	2.4	-	-	-	-
SLT370RF	4	19.2	20.8	2.7	3.0	0.5	0.9	3.3	3.7	10.6	11.6	1.9	2.1	-	-	5.6	6.2
SLT420GF	1	12.2	13.8	2.9	3.3	0.6	1.0	3.4	4.6	3.4	4.6	2.2	2.4	-	-	-	-
SLT420GF-S	1	12.2	13.8	2.9	3.3	0.6	1.0	3.4	4.6	3.4	4.6	2.2	2.4	-	-	-	-
SLT500GF	1	12.6	14.0	3.0	3.4	0.6	1.0	3.4	4.6	3.4	4.6	2.4	2.6	-	-	-	-
SLT350GUF-AL	3	24.1	25.1	2.3	2.7	0.4	0.6	5.4	6.4	15.2	16.2	2.2	2.4	2.2	2.4	-	-

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-40 °C to +70 °C	
Passive Aging	-40°C, 1000 hours	≤ R1max
	+60°C, 1000 hours	≤ R1max
Humidity Aging	+60°C, 95%R.H. 1000hours	≤ R1max
Vibration	MIL-STD-883D, Method 2026	No change

PHYSICAL SPECIFICATIONS

Lead Material	0.1mm nominal thickness.
Insulating Material	Polyester tape

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PHYSICAL SPECIFICATIONS

Product Description	Bag Quantity(ea)	Standard Package(ea)
SLT140GF	1,000	10,000
SLT180GWF	1,000	10,000
SLT190GF	1,000	10,000
SLT250GUF	1,000	10,000
SLT270GF	1,000	10,000
SLT310GF	1,000	10,000
SLT350GF	1,000	10,000
SLT370GF	1,000	10,000
SLT370RF	1,000	10,000
SLT420GF	1,000	10,000
SLT500GF	1,000	10,000
SLT350GUF-AL	1,000	10,000

©All models are packaged in bulk.

CROSS REFERENCE

Polytronics/ EVERFUSE [†]	Cross Reference	
	Raychem/ PolySwitch [®]	Bourns/ Multifuse [®]
SLT140GF	N/A	N/A
SLT180GWF	MXP180K	N/A
SLT190GF	MXP190BB	MF-LL190
SLT250GUF	MXP250K	N/A
SLT270GF	MXP270	N/A
SLT310GF	N/A	N/A
SLT350GWF	MXP350K	N/A
SLT370GF	MXP370	N/A
SLT370RF	N/A	N/A
SLT420GF	MGP420	N/A
SLT500GF	N/A	N/A
SLT350GUF-AL	N/A	N/A

[†]“EVERFUSE” is a registered trademark of Polytronics Technology Corp.

“Multifuse” is a registered trademark of Bourns , Inc.

“PolySwitch” is a registered trademark of Raychem Corporation.

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