

Description

The new LT series device provides reliable, noncycling protection against overcharging and short circuits events for rechargeable battery cells where resettable protection is desired.

Features

- RoHS compliant and lead-free
- Weldable nickel terminals
- Compact design saves board space
- Low resistance
- Provides overcurrent protection at 100°C trip temperature

Agency Approvals

AGENCY	AGENCY FILE NUMBER
	E183209
	R50082521

Applications

- Rechargeable battery cell protection
 - Mobile phones
 - Laptop computers

Electrical Characteristics

Part Number	I _{hold} (A)	I _{trip} (A)	V _{max} (Vdc)	I _{max} (A)	P _{d max.} (W)	Maximum Time To Trip		Resistance			Agency Approvals	
						Current (A)	Time (Sec.)	R _{min} (Ω)	R _{typ} (Ω)	R _{1max} (Ω)		
15LT070	0.7	1.5	15	100	1.0	3.50	5.00	0.100	0.200	0.340	X	X
15LT070S	0.7	1.5	15	100	1.0	3.50	5.00	0.100	0.200	0.340	X	X
24LT100	1.0	2.5	24	100	1.5	5.00	7.00	0.070	0.130	0.260	X	X
24LT100S	1.0	2.5	24	100	1.5	5.00	7.00	0.070	0.130	0.260	X	X
24LT100SS	1.0	2.5	24	100	1.5	5.00	7.00	0.070	0.130	0.260	X	X
24LT180	1.8	3.8	24	100	2.0	9.00	2.90	0.040	0.068	0.120	X	X
24LT180S	1.8	3.8	24	100	2.0	9.00	2.90	0.040	0.068	0.120	X	X
24LT180SS	1.8	3.8	24	100	2.0	9.00	2.90	0.040	0.068	0.120	X	X
24LT190	1.9	4.2	24	100	1.9	10.00	3.00	0.030	0.057	0.100	X	X
24LT190S	1.9	4.2	24	100	1.9	10.00	3.00	0.030	0.057	0.100	X	X
24LT260	2.6	5.2	24	100	2.3	13.0	5.0	0.025	0.042	0.076	X	X
24LT300	3.0	6.3	24	100	2.0	15.0	4.0	0.015	0.031	0.055	X	X
24LT310	3.1	6.0	24	100	2.5	16.0	5.0	0.018	0.030	0.055	X	X
24LT340	3.4	6.8	24	100	2.7	17.0	5.0	0.016	0.027	0.050	X	X

I_{hold} = Hold current: maximum current device will pass without tripping in 20°C still air.

I_{trip} = Trip current: minimum current at which the device will trip in 20°C still air.

V_{max} = Maximum 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})

P_d = Power dissipated from device when in the tripped state at 20°C still air.

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

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

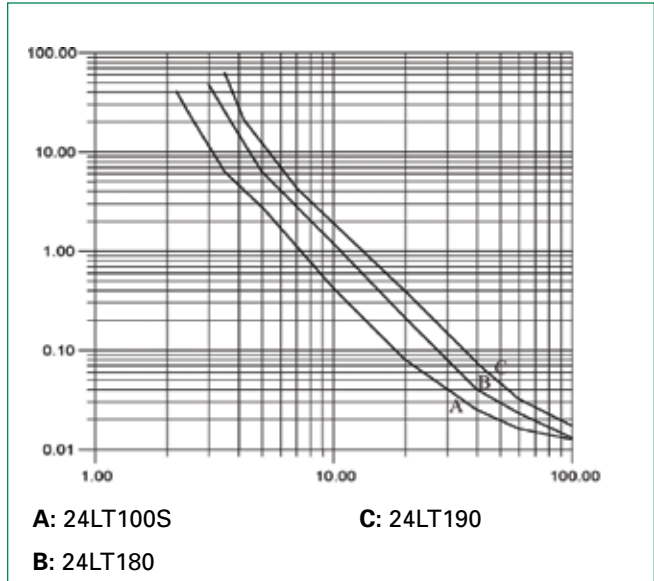
R_{1max} = Maximum resistance of device at 20°C measured one hour after tripping or reflow soldering of 260°C for 20 sec.

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

Temperature Derating

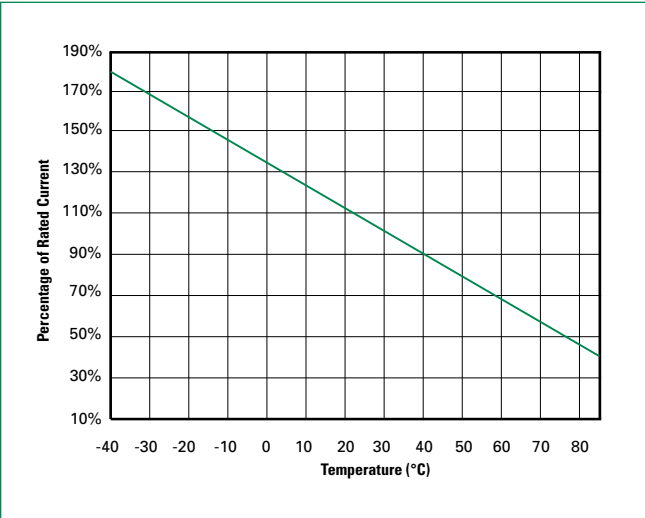
Part Number	Ambient Operation Temperature								
	-40°C	-20°C	0°C	20°C	40°C	50°C	60°C	70°C	85°C
	Hold Current (A)								
15LT070	1.20	1.09	0.85	0.70	0.50	0.45	0.35	0.28	0.16
15LT070S	1.20	1.09	0.85	0.70	0.50	0.45	0.35	0.28	0.16
24LT100	1.86	1.60	1.40	1.00	0.80	0.70	0.60	0.44	0.23
24LT100S	1.86	1.60	1.40	1.00	0.83	0.70	0.60	0.44	0.23
24LT100SS	1.86	1.60	1.40	1.00	0.83	0.70	0.60	0.44	0.23
24LT180	3.13	2.68	2.20	1.80	1.33	1.10	0.90	0.65	0.36
24LT180S	3.13	2.68	2.20	1.80	1.33	1.10	0.90	0.65	0.36
24LT180SS	3.13	2.68	2.20	1.80	1.33	1.10	0.90	0.65	0.36
24LT190	3.32	2.86	2.40	1.90	1.48	1.25	1.10	0.79	0.43
24LT260	4.30	3.72	3.10	2.60	1.98	1.69	1.40	1.11	0.60
24LT300	5.10	4.40	3.70	3.00	2.30	1.95	1.60	1.25	0.69
24LT310	5.36	4.58	3.70	3.10	2.36	2.01	1.70	1.30	0.71
24LT340	5.52	4.79	4.00	3.40	2.60	2.24	1.90	1.51	0.78

Average Time Current Curves



The average time current curves and temperature derating curve performance is affected by a number of variables, and these curves provided as guidance only. Customer must verify the performance in their application.

Temperature Derating Curve



Physical Specifications

Terminal Material	0.13mm nominal thickness, quarter-hard nickel
Insulating Material	Polyester tape

Environmental Specifications

Operating/Storage Temperature	-40°C to +85°C
Maximum Device Surface Temperature in Tripped State	125°C
Passive Aging	+70°C, 1000 hours ±10% typical resistance change
Humidity Aging	+85°C, 85%R.H. 7days ±5% typical resistance change
Vibration	MIL-LTD-883C, Condition A No change

Dimensions

Figure 1

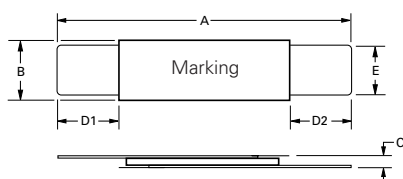


Figure 2

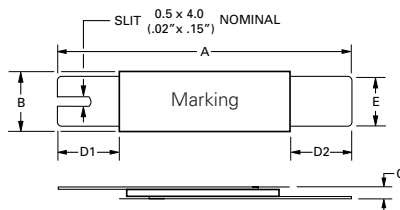
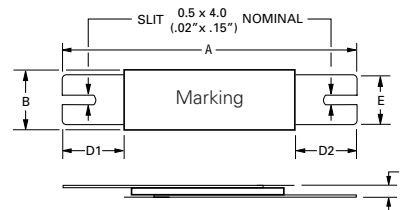


Figure 3



Part Number	A				B				C				D1		D2		E				Fig.
	Inches		mm		Inches		mm		Inches		mm		in.	mm	in.	mm	Inches		mm		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
15LT070	0.78	0.87	19.9	22.1	0.19	0.20	4.9	5.2	0.03	0.05	0.7	1.2	0.22	5.5	0.22	5.5	0.01	0.22	3.9	4.1	1
15LT070S	0.78	0.87	19.9	22.1	0.19	0.20	4.9	5.2	0.03	0.05	0.7	1.2	0.22	5.5	0.22	5.5	0.01	0.22	3.9	4.1	2
24LT100	0.82	0.91	20.9	23.1	0.19	0.20	4.9	5.2	0.02	0.04	0.6	1	0.16	4.1	0.16	4.1	0.01	0.16	3.9	4.1	1
24LT100S	0.82	0.91	20.9	23.1	0.19	0.20	4.9	5.2	0.02	0.04	0.6	1	0.16	4.1	0.16	4.1	0.01	0.16	3.9	4.1	2
24LT100SS	0.82	0.91	20.9	23.1	0.19	0.20	4.9	5.2	0.02	0.04	0.6	1	0.16	4.1	0.16	4.1	0.01	0.16	3.9	4.1	3
24LT180	0.94	1.02	24	26	0.19	0.20	4.9	5.2	0.02	0.04	0.6	1	0.16	4.1	0.16	4.1	0.01	0.16	3.9	4.1	1
24LT180S	0.94	1.02	24	26	0.19	0.20	4.9	5.2	0.02	0.04	0.6	1	0.16	4.1	0.16	4.1	0.01	0.16	3.9	4.1	2
24LT180SS	0.94	1.02	24	26	0.19	0.20	4.9	5.2	0.02	0.04	0.6	1	0.16	4.1	0.16	4.1	0.01	0.16	3.9	4.1	3
24LT190	0.84	0.92	21.3	23.4	0.40	0.43	10.2	11	0.02	0.04	0.5	1	0.20	5	0.20	5	0.01	0.20	4.8	5.4	1
24LT190S	0.84	0.92	21.3	23.4	0.40	0.43	10.2	11	0.02	0.04	0.5	1	0.20	5	0.20	5	0.01	0.20	4.8	5.4	2
24LT260	0.94	1.02	24	26	0.43	0.47	10.8	11.9	0.02	0.04	0.6	1	0.20	5	0.20	5	0.01	0.20	5.9	6.1	1
24LT300	1.12	1.25	28.4	31.8	0.51	0.53	13	13.5	0.02	0.04	0.5	1.1	0.25	6.3	0.25	6.3	0.00	0.25	6	6.6	1
24LT310	0.94	1.02	24	26	0.58	0.63	14.8	15.9	0.02	0.04	0.6	1	0.20	5	0.20	5	0.01	0.20	5.9	6.1	1
24LT340	0.94	1.02	24	26	0.58	0.63	14.8	15.9	0.02	0.04	0.6	1	0.20	5	0.20	5	0.01	0.20	5.9	6.1	1

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Vibration	MIL-LTD-883C, Condition A No change

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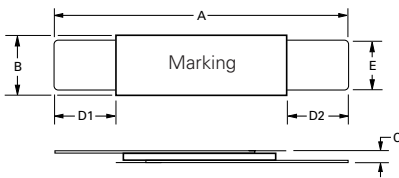


Figure 2

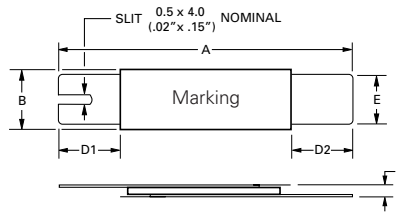
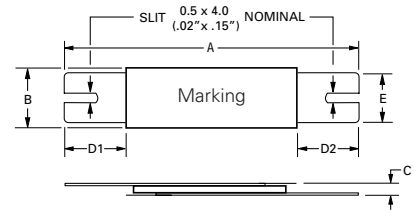


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	Inches		mm		Inches		mm		Inches		mm		in.	mm	in.	mm	Inches		mm		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
15LT070	0.78	0.87	19.9	22.1	0.19	0.20	4.9	5.2	0.03	0.05	0.7	1.2	0.22	5.5	0.22	5.5	0.01	0.22	3.9	4.1	1
15LT070S	0.78	0.87	19.9	22.1	0.19	0.20	4.9	5.2	0.03	0.05	0.7	1.2	0.22	5.5	0.22	5.5	0.01	0.22	3.9	4.1	2
24LT100	0.82	0.91	20.9	23.1	0.19	0.20	4.9	5.2	0.02	0.04	0.6	1	0.16	4.1	0.16	4.1	0.01	0.16	3.9	4.1	1
24LT100S	0.82	0.91	20.9	23.1	0.19	0.20	4.9	5.2	0.02	0.04	0.6	1	0.16	4.1	0.16	4.1	0.01	0.16	3.9	4.1	2
24LT100SS	0.82	0.91	20.9	23.1	0.19	0.20	4.9	5.2	0.02	0.04	0.6	1	0.16	4.1	0.16	4.1	0.01	0.16	3.9	4.1	3
24LT180	0.94	1.02	24	26	0.19	0.20	4.9	5.2	0.02	0.04	0.6	1	0.16	4.1	0.16	4.1	0.01	0.16	3.9	4.1	1
24LT180S	0.94	1.02	24	26	0.19	0.20	4.9	5.2	0.02	0.04	0.6	1	0.16	4.1	0.16	4.1	0.01	0.16	3.9	4.1	2
24LT180SS	0.94	1.02	24	26	0.19	0.20	4.9	5.2	0.02	0.04	0.6	1	0.16	4.1	0.16	4.1	0.01	0.16	3.9	4.1	3
24LT190	0.84	0.92	21.3	23.4	0.40	0.43	10.2	11	0.02	0.04	0.5	1	0.20	5	0.20	5	0.01	0.20	4.8	5.4	1
24LT190S	0.84	0.92	21.3	23.4	0.40	0.43	10.2	11	0.02	0.04	0.5	1	0.20	5	0.20	5	0.01	0.20	4.8	5.4	2
24LT260	0.94	1.02	24	26	0.43	0.47	10.8	11.9	0.02	0.04	0.6	1	0.20	5	0.20	5	0.01	0.20	5.9	6.1	1
24LT300	1.12	1.25	28.4	31.8	0.51	0.53	13	13.5	0.02	0.04	0.5	1.1	0.25	6.3	0.25	6.3	0.00	0.25	6	6.6	1
24LT310	0.94	1.02	24	26	0.58	0.63	14.8	15.9	0.02	0.04	0.6	1	0.20	5	0.20	5	0.01	0.20	5.9	6.1	1
24LT340	0.94	1.02	24	26	0.58	0.63	14.8	15.9	0.02	0.04	0.6	1	0.20	5	0.20	5	0.01	0.20	5.9	6.1	1