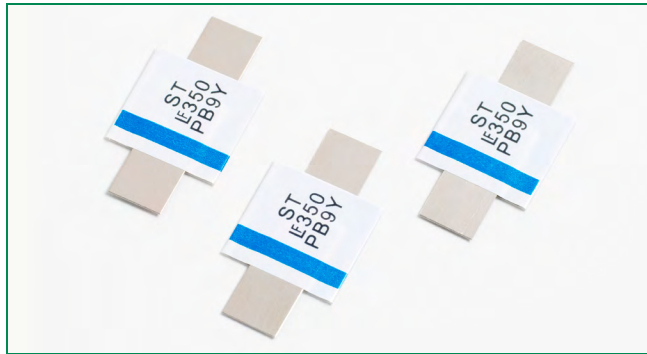


ST Series



Description

The new ST 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
- Low resistance
- Provides overcurrent protection at 125°C trip temperature

Applications

- Rechargeable battery cell protection

Agency Approvals

| AGENCY | AGENCY FILE NUMBER |
|--------|--------------------|
| | E183209 |
| | R50119583 |

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) | | |
| 15ST175 | 1.75 | 3.8 | 15 | 100 | 2.5 | 8.75 | 5.00 | 0.050 | 0.090 | 0.120 | 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.

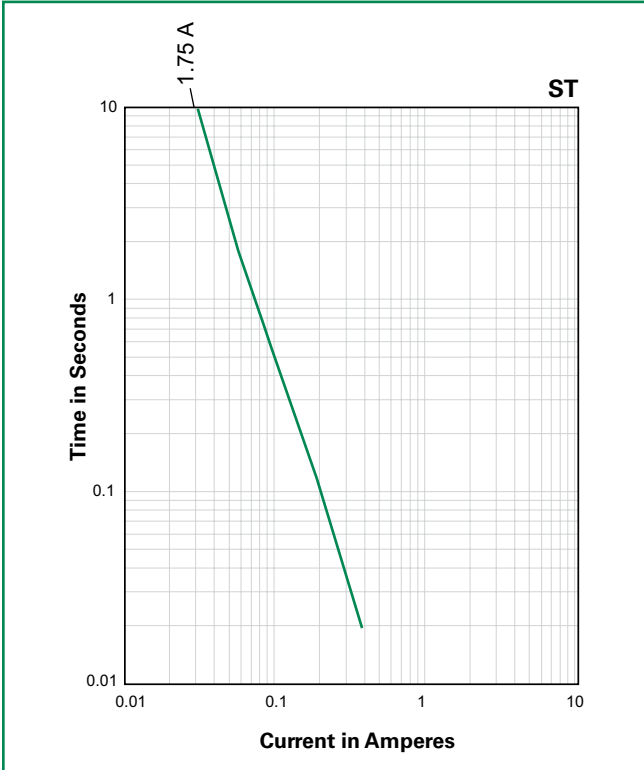
Temperature Derating

| Ambient Operation Temperature | | | | | | | | | |
|-------------------------------|------------------|-------|------|------|------|------|------|------|------|
| | -40°C | -20°C | 0°C | 20°C | 40°C | 50°C | 60°C | 70°C | 85°C |
| Part Number | Hold Current (A) | | | | | | | | |
| 15ST175 | 2.50 | 2.30 | 2.00 | 1.75 | 1.50 | 1.30 | 1.20 | 1.10 | 0.90 |

WARNING

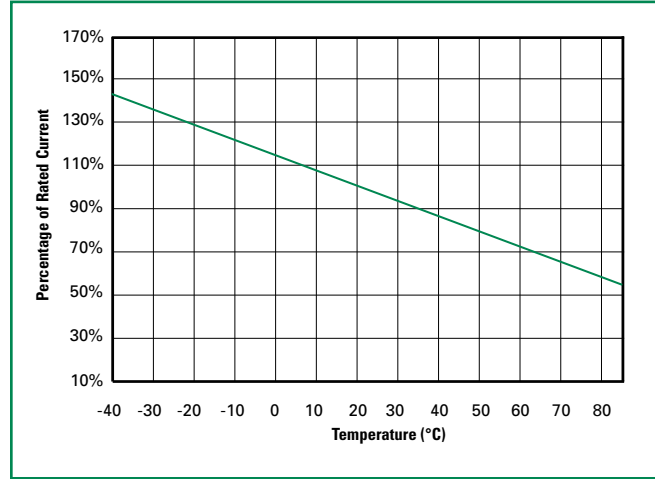
- Users shall independently assess the suitability of these devices for each of their applications
- Operation of these devices beyond the stated maximum ratings could result in damage to the devices and lead to electrical arcing and/or fire
- These devices are intended to protect against the effects of temporary over-current or over-temperature conditions and are not intended to perform as protective devices where such conditions are expected to be repetitive or prolonged in duration
- Exposure to silicon-based oils, solvents, electrolytes, acids, and similar materials can adversely affect the performance of these PPTC devices
- These devices undergo thermal expansion under fault conditions, and thus shall be provided with adequate space and be protected against mechanical stresses
- Circuits with inductance may generate a voltage (L di/dt) above the rated voltage of the PPTC device.

Average Time Current Curves



The average time current curves and Temperature Rerating 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 Rerating Curve



Note:
Typical Temperature rerating curve, refer to table for derating data

Physical Specifications

| | |
|----------------------------|---|
| Lead Material | 0.13mm nominal thickness, quarter-hard Nickel |
| Insulating Material | Polyester tape |

Additional Information



Datasheet



Resources

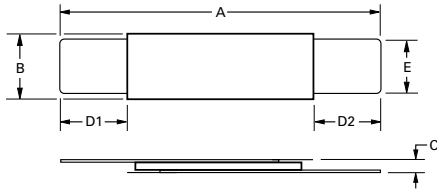


Samples

Environmental Specifications

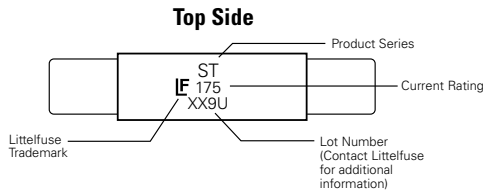
| | |
|--|---|
| Operating/Storage Temperature | -40°C to +85°C |
| Maximum Device Surface Temperature in Tripped State | 125°C |
| Passive Aging | +70°C, 1000 hours -/+5% typical resistance change |
| Humidity Aging | +85°C, 85% R.H., 7 days, -/+5% typical resistance change |
| Vibration | MIL-STD-883,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

Dimensions

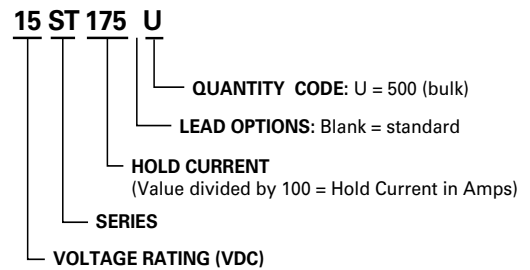


| Part Number | A | | | | B | | | | C | | | | D1 | | D2 | | E | | | |
|-------------|--------|------|------|------|--------|------|------|------|--------|------|------|------|--------|------|--------|------|--------|------|------|------|
| | Inches | | mm | | Inches | | mm | | Inches | | mm | | Inches | mm | Inches | mm | Inches | | mm | |
| | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Min. | Min. | Min. | Min. | Max. | Min. | Max. |
| 15ST175 | 0.82 | 0.91 | 20.9 | 23.1 | 0.19 | 0.20 | 4.9 | 5.2 | 0.02 | 0.04 | 0.6 | 1.0 | 0.16 | 4.1 | 0.16 | 4.1 | 0.01 | 0.16 | 3.9 | 4.1 |

Part Marking System



Part Ordering Number System



Packaging

| Part Number | Ordering Number | I_{hold} (A) | I_{hold} Code | Packaging Option | Quantity | Quantity & Packaging Codes |
|-------------|-----------------|----------------|-----------------|------------------|----------|----------------------------|
| 15ST175 | 15ST175U | 1.75 | 175 | Bulk | 500 | U |