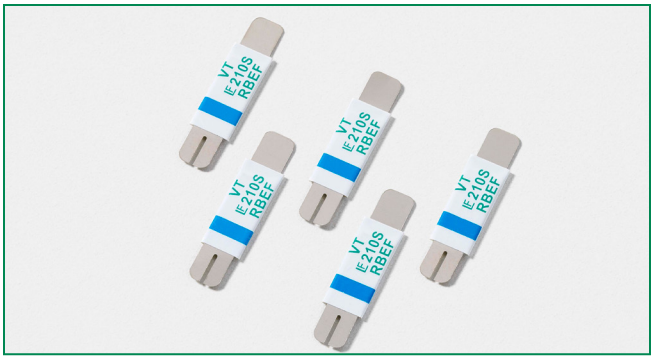
# POLY-FUSE® Resettable PTCs

## Axial Lead Battery Strap Type > VT Series

## VT Series




## Description

The new VT 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
- Slim, low profile design
- Compact design saves board space
- Low resistance

## Agency Approvals

| AGENCY | AGENCY FILE NUMBER |
|---|---|
| c UL us | E183209 |
| TÜV | R50119583 |

## 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) | c UL us | TÜV |
| 16VT210S | 2.10 | 4.70 | 16 | 100 | 1.5 | 10.00 | 5.00 | 0.018 | 0.030 | 0.060 | 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 Rerating

| | Ambient Operation Temperature | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | -40°C | -20°C | 0°C | 25°C | 40°C | 50°C | 60°C | 70°C | 85°C |
| Part Number | Hold Current (A) | | | | | | | | |
| 16VT210S | 4.10 | 3.50 | 2.90 | 2.10 | 1.60 | 1.30 | 1.00 | 0.70 | 0.10 |

**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.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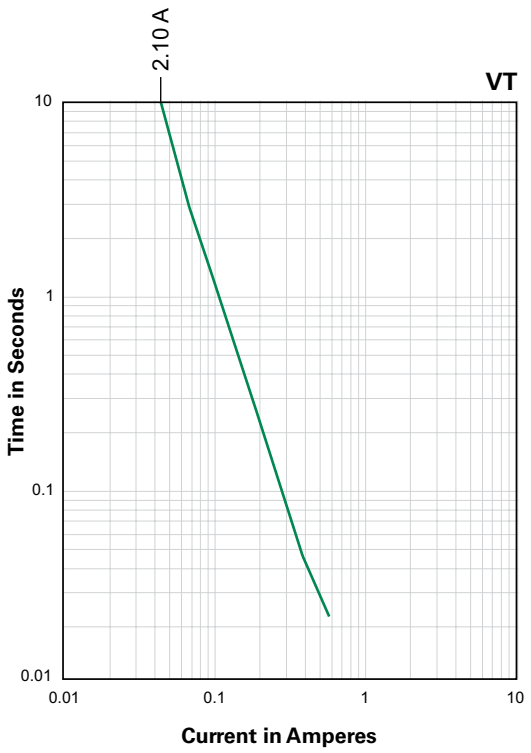
## Average Time Current Curves

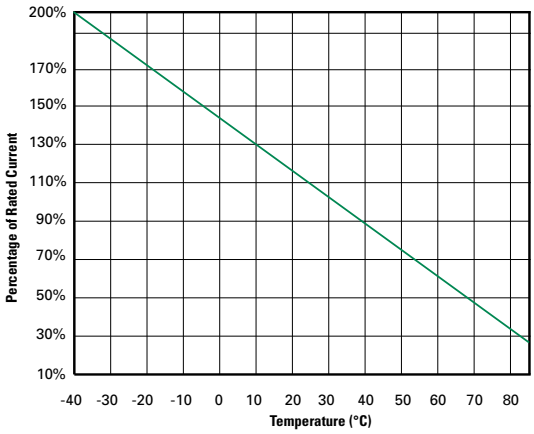



The average time current curves and Temperature Rerating curve performance is affected by a number or variables, and these curves provided as guidance only. Customer must verify the performance in their application.

## Additional Information

Datasheet | Resources | Samples

## Temperature Rerating Curve




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

## 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 |
| **Passive Aging** | +70°C, 1000 hours, -/+10% typical resistance change |
| **Humidity Aging** | +85°C, 85%R.H., 7 days, -/+5% typical resistance change |
| **Thermal Shock** | MIL–STD–202, Method 107, +85°C/-40°C 20 times -30% typical resistance change |
| **Vibration** | MIL–STD–883, Method 2007, Condition A, No change |



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