

LST Varistor Series



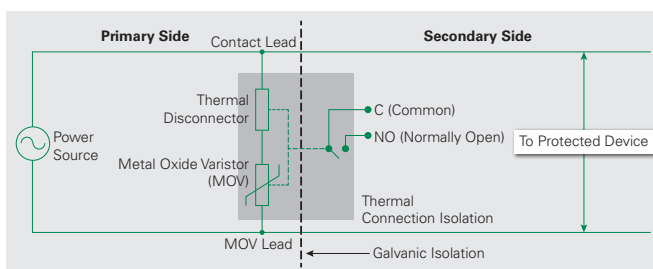
Description

The LST Varistor Series is constructed with Littelfuse's renowned thermally protected varistor technology (TMOV). The built-in thermal disconnecting function and electric arc shield provides additional protection to prevent catastrophic failure and fire hazard even under the extreme circumstances of varistor end-of-life or abnormal overvoltage conditions. It is specifically designed for Type 1 and Type 2 Surge Protective Devices (SPDs).

Features

- 200 kA SCCR, 20 kA I_n , UL1449 Type 4 recognized component assembly
- Same footprint and PCB layout for I_{max} 50 kA and 75 kA options
- Mechanically triggered AC and DC rated micro-switch with Normally Open or Normally Closed options for remote indication/monitoring circuit
- Visual tab option to display LST working status
- RoHS compliant, Lead-free, and Halogen-free

Typical Circuit Diagram with Normally Open Switch



Note:

This typical circuit shows how the switch pins (C and NO) can be used to indicate the connection status of thermal disconnector for remote indication. This denotes that the circuit will be no longer protected from surge currents by the MOV after the thermal disconnector forms open circuit.

Applications

- Type 1 and Type 2 Surge Protective Devices (SPDs)

Benefits

- Facilitate meeting UL1449 listed Type 1 or Type 2 standards
- Same PCB layout/design for 50 kA and 75 kA I_{max} rated SPDs
- More flexibilities/options for designing an isolated remote indication/monitoring circuit
- Clear indication for technician/engineer to replace EOL product to continue surge protection for the end product
- Environment-friendly

General Technical Specification

| | Standard | Units |
|-----------------------|-------------|-----------------|
| Climatic Category | IEC 60068-1 | 40/85/56 |
| Operating Temperature | IEC 61051-1 | -40° C ~ +85° C |
| Storage Temperature | | -40° C ~ +85° C |
| Voltage Proof | IEC 61051-1 | ≥ 2.5 kVRMS |
| Insulation Resistance | IEC 61051-1 | ≥ 100 MΩ |

Electrical Specifications

| Part Number | Specifications (85° C) | | Specifications (25° C) | | |
|---------------|---|--|---|---------------------------|--------------------------------------|
| | Maximum Continuous Operating Voltage (MCOV) | Peak Surge Current (8/20 μ s, 1 Pulse) | Nominal Discharge Current (8/20 μ s, 15 Pulses) | Voltage Protection Rating | Maximum Short Circuit Current Rating |
| | V_{RMS} (V) | I_{max} (kA) | I_n (kA) | VPR (V) | SCCR (kA) |
| LST1505VL2NT1 | 150 | 50 | 20 | 600 | 200 |
| LST1507VL2NT1 | 150 | 75 | 20 | 600 | 200 |
| LST1805VL2NT1 | 180 | 50 | 20 | 800 | 200 |
| LST1807VL2NT1 | 180 | 75 | 20 | 800 | 200 |
| LST2755VL2NT1 | 275 | 50 | 20 | 900 | 200 |
| LST2757VL2NT1 | 275 | 75 | 20 | 900 | 200 |
| LST3205VL2NT1 | 320 | 50 | 20 | 1000 | 200 |
| LST3207VL2NT1 | 320 | 75 | 20 | 1000 | 200 |
| LST3855VL2NT1 | 385 | 50 | 20 | 1500 | 200 |
| LST3857VL2NT1 | 385 | 75 | 20 | 1500 | 200 |
| LST4205VL2NT1 | 420 | 50 | 20 | 1500 | 200 |
| LST4207VL2NT1 | 420 | 75 | 20 | 1500 | 200 |
| LST5105VL2NT1 | 510 | 50 | 20 | 1500 | 200 |
| LST5107VL2NT1 | 510 | 75 | 20 | 1500 | 200 |
| LST5505VL2NT1 | 550 | 50 | 20 | 1500 | 200 |
| LST5507VL2NT1 | 550 | 75 | 20 | 1500 | 200 |
| LST6905VL2NT1 | 690 | 50 | 20 | 2000 | 200 |

Note:

For LST***7 device with I_{max} 75 kA rating, thermal disconnecter may safely form open circuit without any damage to the device after I_{max} test.

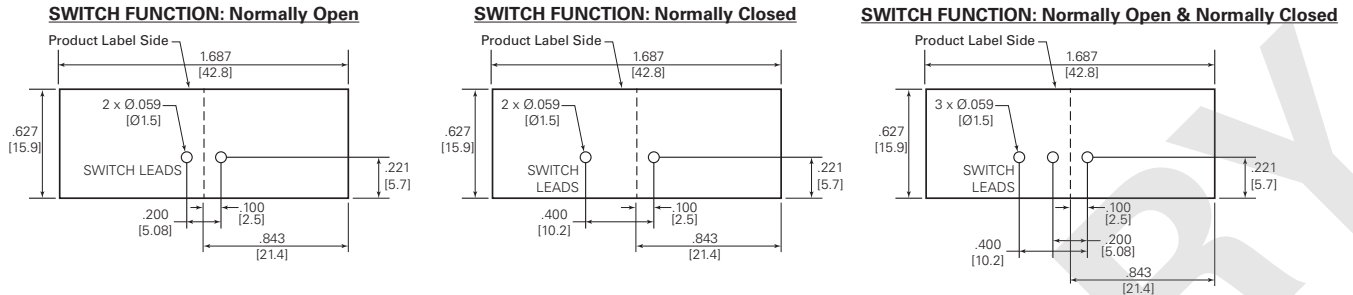
Switch Function Configuration



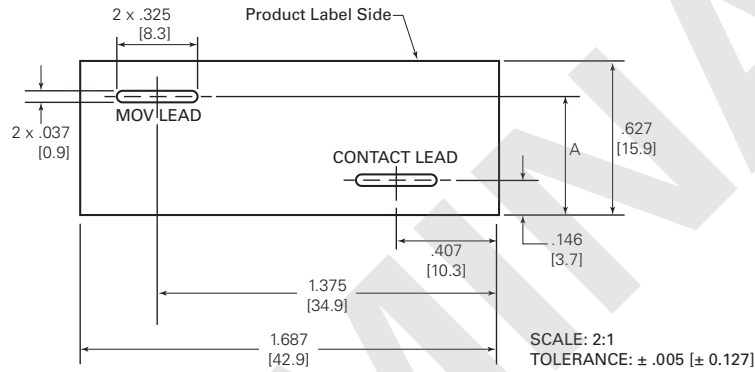
| Switch Functions | Switch Pins Connected to Signal Circuit |
|---------------------------------|--|
| Normally Open | C and NO |
| Normally Closed | C and NC |
| Normally Open & Normally Closed | C and NO: Normally Open monitoring circuit C and NC: Normally Closed monitoring circuit |
| No Function | No switch pin |

- Normally-open and/or normally-closed switch functions are available for remote indication circuit to identify LST working status
- Switch pins of Common ("C") and Normally-Open ("NO") can be connected together for normally-open monitoring circuit
- Switch pins of Common ("C") and Normally-Closed ("NC") can be connected together for normally-closed monitoring circuit
- Electrical rating for switch pin: 60 Vdc/0.2 A, or 250 Vac/0.1 A
- "Visual Tab" within housing: LST is still functional
- "Visual Tab" shows up (Optional): LST has been activated and needs to be replaced

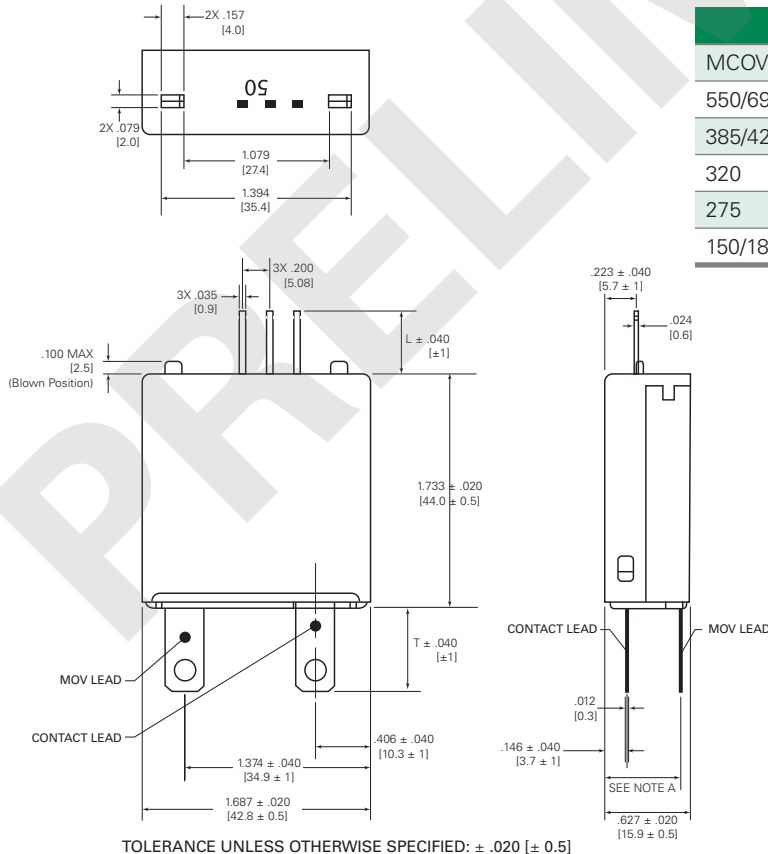
PCB Layout for Switch Pins (Unit: Inch [mm])



PCB Layout for LST Terminations (Unit: Inch [mm])

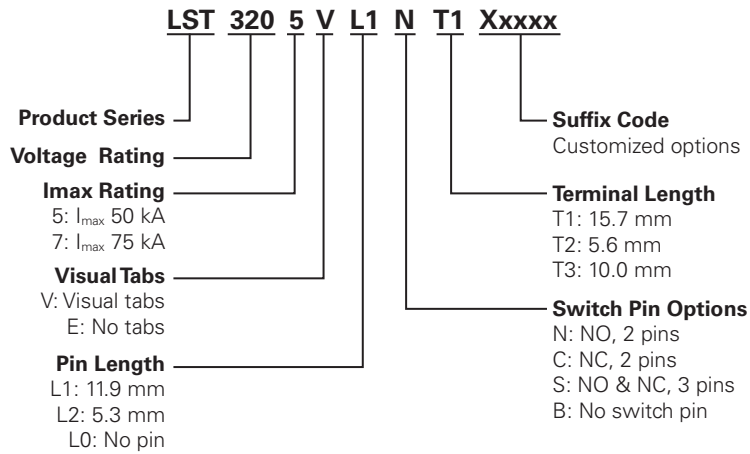


LST Mechanical Dimensions (Unit: Inch [mm])



| NOTE A | |
|-------------|-------------------------|
| MCOV | A Dimension (inch [mm]) |
| 550/690 | .545 ± .04 [13.8 ± 1.0] |
| 385/420/510 | .54 ± .04 [13.7 ± 1.0] |
| 320 | .51 ± .04 [13.0 ± 1.0] |
| 275 | .495 ± .04 [12.6 ± 1.0] |
| 150/180 | .485 ± .04 [12.3 ± 1.0] |

Part Numbering System



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