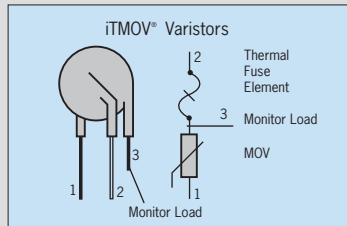
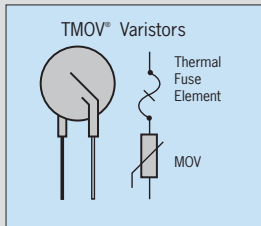


Description

The Littelfuse TMOV® and iTMOV® thermally protected varistors represent a new development in integrated circuit protection. Both versions are comprised of radial leaded MOVs (Metal Oxide Varistors) with an integrated thermally activated element designed to open in the event of overheating due to the abnormal overvoltage, limited current, conditions outlined in UL1449. The TMOV® and iTMOV® varistor's integrated thermal element, in conjunction with appropriate enclosure design, helps facilitate SPD module compliance to UL1449 for both cord connected and permanently connected applications.

The TMOV® and iTMOV® varistors offer quick thermal response due to the close proximity of the integrated thermal element to the MOV body. The integrated configuration also offers lower inductance than most discrete solutions resulting in improved clamping performance to fast overvoltage transients.

The iTMOV® varistor differs from the TMOV® varistor by the inclusion of a third lead for the purpose of indicating that the MOV has been disconnected from the circuit. This lead facilitates connection to monitoring circuitry. Additionally TMOV® and iTMOV® varistors are wave solderable, thus simplifying end product assembly by reducing the expense and rework associated with hand soldering operations.



Features & Applications

Features

- RoHS compliant and lead-free available
- Patented integrated thermal protection device - Patent #US6636403
- Designed to facilitate compliance to UL1449 3rd edition for SPD product
- High peak surge current rating up to 10kA
- Wave solderable
- Standard lead form and spacing option
- Low leakage
- 55°C to +85°C operating temp. range
- Three lead version available for indicating purposes
- Certified under VDE and IEC / IECQ
- Supports Operating Voltage up to 750V_{AC}

Applications




- AC panel protection modules
- TVSS products
- AC line power supplies
- Surge protected strip connectors
- AC power meters
- Relocatable AC power taps
- GFCI (ground fault current interrupter)
- UPS (uninterruptable power supply)
- White goods
- Inverters
- AC/DC power supplies

Parameters & Agency Approvals

Parameters

Parameters	TMOV® iTMOV	Units
AC voltage range	115 to 750	V
Peak pulse current (ITM) for 8x20 μs current wave, single pulse	6.000 to 10.000	A
Single-pulse energy capability for 2 ms current wave	35 to 480	J
Operating ambient temperature range (TA)	-55 to +85	°C
Operating temperature range (TSTG)	-55 to +125	°C
Temperature coefficient (αV) of clamping voltage (Vc) at specified test current	<0.01	%/°C
Hi-pot encapsulation (COATING isolation voltage capability)	2.500	V
Thermal protection isolation Voltage capability (when operated)	600	V
COATING insulation resistance	1.000	MOhm
Indicator lead rating (Lead-3 iTMOV varistor only):		
Continuous RMS current	100	mA
Surge current, 8/20 μs	10.000	A

Agency Approvals

Agency Approval	Agency File Number
 UL1414 UL1449	E56529 E320116
 QC 42201-C001 QC42201-A001 IEC 60950-1 (Annex Q)	E1274/F
 IEC 61051-1 IEC 61051-2 IEC 60950-1 (Annex Q)	40021525

Methods of thermally protecting MOV's



Standard MOV



MOV/ TCO combination

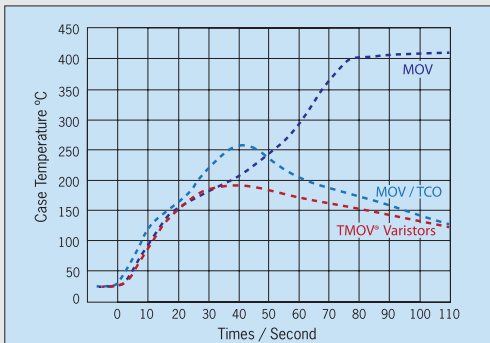


Placing the thermal element inside the epoxy coating and close to the center of the disk.

TMOV®

Benefits of TMOV®

- Optimized heat transfer between the MOV disk and the thermal element
- Allows for the thermal element to have a higher opening temperature than most TCO's used while being protected from external heat sources



Effect of applying a UL1449 abnormal over-voltage test (240 Vrms, 5A)

Founded in 1927, Littelfuse offers the industry's broadest and deepest portfolio of circuit protection products and solutions. Backed by industry-leading technical support, design and manufacturing expertise, Littelfuse devices protect products in virtually every market that uses electrical energy, from consumer electronics to automotive to industrial equipment.

Technologies offered by Littelfuse include Fuses; Gas Discharge Tubes (GDTs); Positive Temperature Coefficient Devices (PTCs); Protection Relays; PulseGuard ESD Suppressors; SIDACTor Devices; TVS Diode Arrays (SPA Family of Products); Switching Thyristors; TVS Diodes and Varistors.



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Committed to excellence

14 mm & 20 mm TMOV®/ iTMOV®



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