Littelfuse
Expertise Applied | Answers Delivered

Product **Brief**

High Energy Power Line **Surge Protection**

Improve System Reliability and Lower Maintenance Costs

Littelfuse high-power, high-energy TVS Diode Series (AK, LTKAK, SMTOAK2, and SMTAK3) offer superior clamping performance over standard Silicon Avalanche Diode (SAD) technologies, as well as a broad range portfolio from 1 kA to 20 kA surge protection capability for a more robust solution than conventional overvoltage protection methods.

Among all these high surge rating TVS diodes, the Littelfuse surface mount LTKAK and SMTOAK2 series achieve a compact mechanical design and are compatible with automated PCB assembly, providing robust circuit protection.

Applications

- Designed to protect sensitive electronics from overvoltage surge transients, inductive load switching voltage transients, as well as AC/DC power line protection in systems, including:
- ICT, Medical, Industrial DC power supplies
- High power DC bus protection
- DC power supplies used in exposed and harsh environments
- Power over Ethernet (PoE) ports
- Small Cell, Micro Cell, Remote Radio Units (RRU), Baseband Units (BBU)
- High power density SiC and GAN-based DC/DC converters/power supplies
- Avionic power supplies

Features & Benefits

- Precise clamping voltage
- No wear-out mechanism
- Lower leakage
- Faster response
- Compact design (LTKAK/SMTOAK2 series)
- True SMD package compatible with automated PCB assembly process (LTKAK/SMTOAK2 series)
- Improved lead inductance enabling lower clamping voltages
- Improved heat sink capability
- High power density, rated 2 kA 8/20 in a small footprint 10 mm x 15 mm x 5 mm (SMTOAK2 series)

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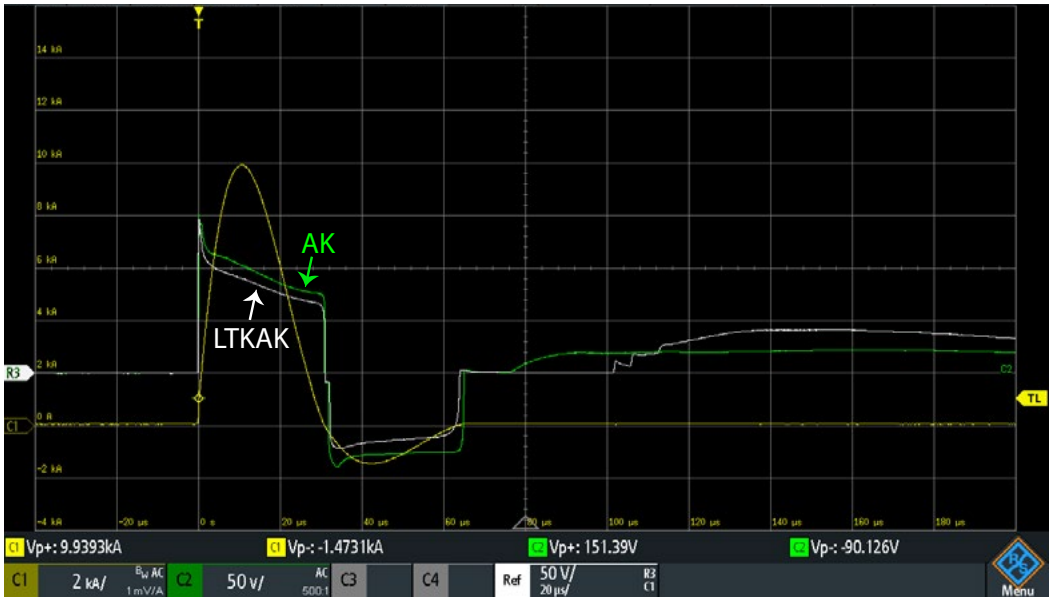
Parts List Table

Series Name	Package Type	Package	Polarity	Reverse Standoff Voltage (V_R) (V)	Peak Pulse Current (I_{PP} 8x20µs) (kA)	Halogen Free	RoHS Compliant	Photo
AK1-Y	Axial Leaded	AK	Bidirectional	76-430	1	Yes	Yes	
AK3-Y	Axial Leaded	AK	Bidirectional	15-430	3	Yes	Yes	
AK6-Y	Axial Leaded	AK	Bidirectional	30-430	6	Yes	Yes	
AK10-Y	Axial Leaded	AK	Bidirectional	15-530	10	Yes	Yes	
AK15-Y	Axial Leaded	AK	Bidirectional	58-190	15	Yes	Yes	
AK20-Y	Axial Leaded	AK	Bidirectional	16-76	20	Yes	Yes	
LTKAK2-L	SMD	Modified SMTO-218	Bidirectional	150-170	2	Yes	Yes	
LTKAK3	SMD	SMTO-218	Bidirectional	66	3	Yes	Yes	
LTKAK6	SMD	SMTO-218	Bidirectional	58-76	6	Yes	Yes	
LTKAK10	SMD	SMTO-218	Bidirectional	58-86	10	Yes	Yes	
SMTAK3	SMD	SMTAK	Bidirectional	15-76	3	Yes	Yes	
SMTOAK2	SMD	SMTO-263	Bidirectional	70	2	Yes	Yes	

Low Vclamp Performance (SMD LTKAK vs. Axial Leaded AK)



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