

## Silicon Avalanche Diodes

6000W Transient Voltage Suppression For AC Line Protection

### RoHS AK6 Series



The new AK6 series of high current transient suppressors have been specially designed for use in A.C. Line Protection and any demanding applications (AC or DC). They offer superior clamping characteristics over standard S.A.D. technologies by virtue of the Littelfuse Foldbak™ technology, which provides a clamping voltage which is lower than the avalanche voltage (but above the rated working voltage) therefore any voltage rise due to increased current conduction is contained to a minimum, providing the best possible protection level. They can also be connected in series and/or parallel to create very high capacity protection solutions.

#### Maximum Ratings

- Current Rating ( $I_{PP}$ ) 6KA (see note 1)
- Maximum Junction Temp. is 150°C
- Storage Temp. -55°C to 175°C
- Rated  $I_{PP}$  measured with 8 x 20  $\mu$ sec pulse

#### Mechanical Characteristics

- Epoxy Encapsulated
- Axial lead terminals (solderable per MIL-STD-202 Method 208)
- Device code and logo marked on every device

#### Features

- RoHS compliant
- Foldbak™ technology for superior clamping factor
- Glass Passivated Junction for reliability
- Bi-directional
- Ultra compact: 12 times less volume than traditional discrete solutions
- Very Low Clamping Voltage
- Sharp Breakdown Voltage
- Low Slope Resistance

**Agency Approvals:** Recognized under the Components Program of Underwriters Laboratories - UL497B.

**Agency File Numbers:** E128662

**ELECTRICAL SPECIFICATION @ Tamb 25°C**

Part Numbers	Standoff Voltage ( $V_{SO}$ ) Volts	Max. Reverse Leakage ( $I_R$ ) @ $V_{SO}$ $\mu$ A	Reverse Breakdown Voltage ( $V_{BR}$ ) @ $I_T$		Test Current ( $I_T$ ) mA	Max. Clamping Voltage ( $V_{CL}$ ) @ Peak Pulse Current ( $I_{PP}$ ) (note 1)		Max. Temp Coefficient OF $V_{BR}$ (%/°C)	Max. Capacitance 0 Bias 10k Hz (nF)
			Min. Volts	Max. Volts		$V_{CL}$ Volts	$I_{PP}$ Amps		
AK6 - 058C	58	20	64	70	10	110	6,000	0.1	6.5
AK6 - 170C	170	20	180	220	10	260	6,000	0.1	2.5
AK6 - 190C	190	20	200	245	10	290	6,000	0.1	2.2
AK6 - 380C	380	20	401	443	10	520	6,000	0.1	2.0

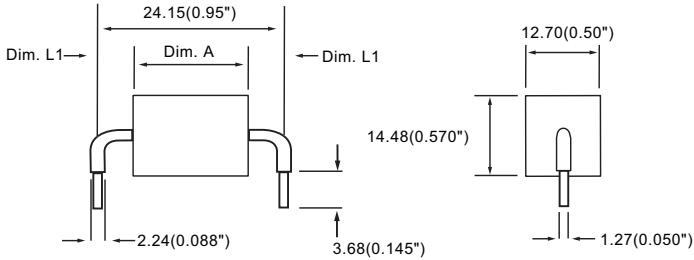
**Note 1.** Using 8/20 $\mu$ S wave shape pulse as defined in IEC 1000.4.5



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Part Number	Dim. L1		Dim. A	
	mm	in.	mm	in.
AK6 - 058C	7.87	0.310	8.13	0.320
AK6 - 170C	7.87	0.310	8.13	0.320
AK6 - 190C	7.87	0.310	8.13	0.320
AK6 - 380C	3.81	0.150	16.5	0.650

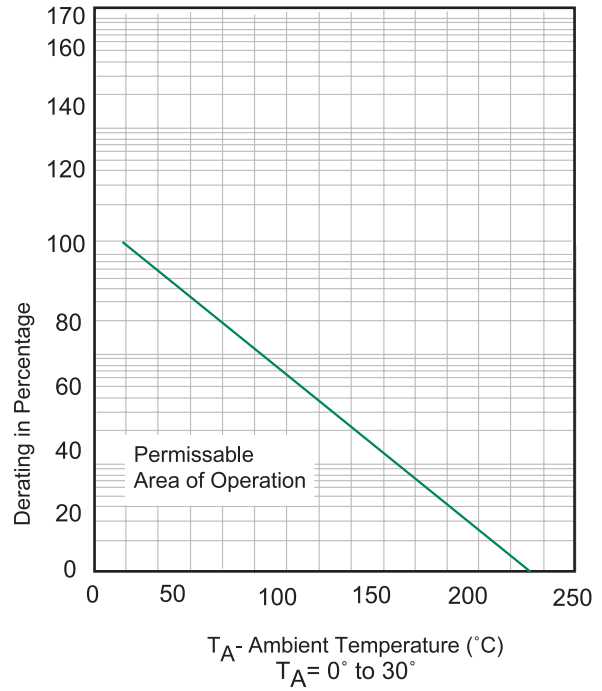


Figure 1. Peak Power Derating  
Peak Pulse Power in Percent of 25% Rating