

Silicon Avalanche Diodes

10000W Transient Voltage Suppression For AC Line Protection

RoHS AK10 Series



The new AK10 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}) 10KA (see note 1)
- Maximum Junction Temp. is 150°C
- Storage Temp. -55°C to 175°C
- Rated I_{PP} measured with 8 x 20 μ 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
- 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

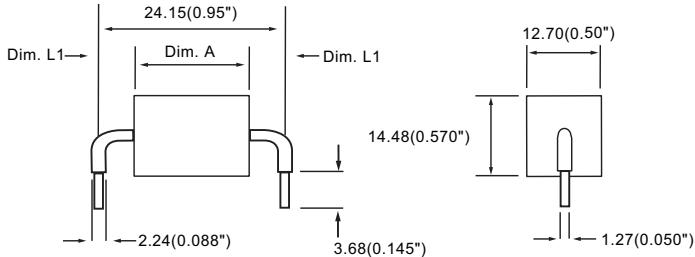
Part Numbers	Standoff Voltage (V _{SO}) Volts	Max. Reserve Leakage (I _R) @ V _{SO} μ A	Reverse Breakdown Voltage (V _{BR}) @ I _T		Test Current (I _T) mA	Max. Clamping Voltage V _{CL}) @ Peak Pulse Current(I _{PP}) (note 1)	Max. Temp Coefficient of V _{BR} (%) / °C	Max. Capacitance 0 Bias 10k Hz (nF)
			Min. Volts	Max. Volts				
AK10-058C	58	20	64	70	10	110	10,000	0.1
AK10-170C	170	20	180	220	10	260	10,000	0.1
AK10-190C	190	20	200	245	10	290	10,000	0.1
AK10-240C	250	20	250	285	10	400	10,000	0.1
AK10-380C	380	20	401	443	10	520	10,000	0.1
AK10-470C	423	20	447	493	10	625	10,000	0.1

Note 1. Using 8/20 μ S wave shape pulse as defined in IEC 61000-4.5

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Part Number	Dim. L1		Dim. A	
	mm	in.	mm	in.
AK10-058C	7.87	0.310	8.13	0.320
AK10-170C	7.87	0.310	8.13	0.320
AK10-190C	7.87	0.310	8.13	0.320
AK10-240C	N/A	N/A	11.4	0.645
AK10-380C	3.81	0.150	16.5	0.650
AK10-470C	3.81	0.150	16.5	0.650

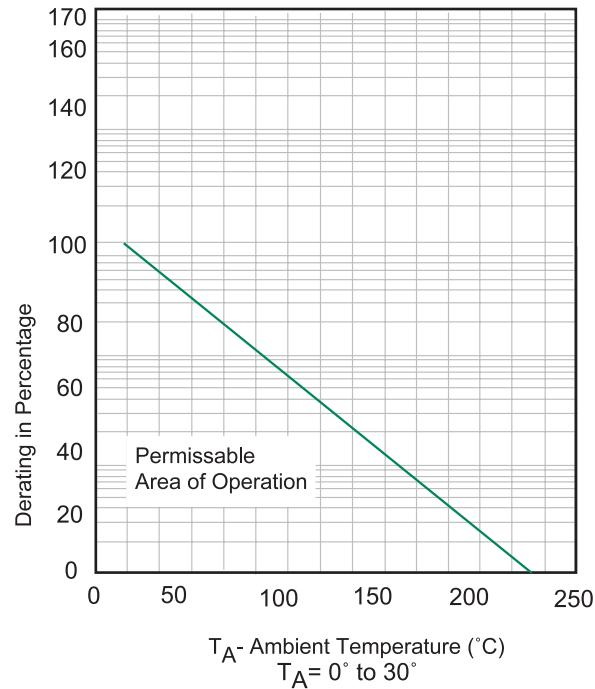


Figure 1. Peak Power Derating
Peak Pulse Power in Percent of 25% Rating