


Transient Voltage Suppression Diodes

Axial Leaded – 6kA > AK6 series

AK6 Series



Agency Approvals

AGENCY	AGENCY FILE NUMBER
	E128662

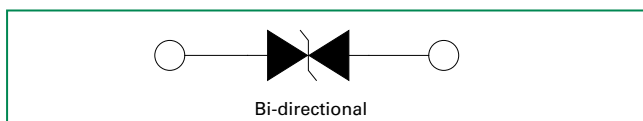
Maximum Ratings and Thermal Characteristics (T_A=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Operating Junction and Storage Temperature Range	T _J , T _{STG}	(-)55 to 150	°C
Current Rating ¹	I _{PP}	6	kA

Note:

1. Rated I_{PP} measured with 8/20μS pulse.

Functional Diagram



Description

The 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. 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.

Features

- Very low clamping voltage
- Ultra compact: less than one-tenth the size of traditional discrete solutions
- Sharp breakdown voltage
- Low slope resistance
- Bi-directional
- Foldbak technology for superior clamping factor
- Symmetric in leads width for easier soldering during assembly
- IEC-61000-4-2 ESD 15kV(Air), 8kV (Contact)
- ESD protection of data lines in accordance with IEC 61000-4-2 (IEC801-2)
- EFT protection of data lines in accordance with IEC 61000-4-4 (IEC801-4)
- Halogen-free
- RoHS compliant
- Glass passivated junction

Additional Information



Datasheet




Resources



Samples

Electrical Characteristics (T_A=25°C unless otherwise noted)

Part Numbers	Part Marking	Standoff Voltage (V _{SO}) Volts	Max. Reverse Leakage (I _R) @ V _{SO} μA	Typical I _R @ 85°C (μA)	Reverse Breakdown Voltage (V _{BR}) @ I _T		Test Current I _T (mA)	Max. Clamping Voltage V _{CL} @ I _{PP} Peak Pulse Current (I _{PP}) (Note 1)		Max. Temp Coefficient OF V _{BR} (%/°C)	Max. Capacitance 0 Bias 10kHz (nF)	Agency Approval 
					Min Volts	Max Volts		V _{CL} Volts	I _{PP} Amps			
AK6 - 030C	6-015C	30	10	15	32	37	10	90	6,000	0.1	11.0	X
AK6 - 058C	6-030C	58	10	15	64	70	10	110	6,000	0.1	8.0	X
AK6 - 066C	6-058C	66	10	15	72	80	10	120	6,000	0.1	6.0	X
AK6 - 076C	6-066C	76	10	15	85	95	10	140	6,000	0.1	6.5	X
AK6 - 170C	6-076C	170	10	15	180	220	10	260	6,000	0.1	2.8	X
AK6 - 190C	6-150C	190	10	15	200	245	10	290	6,000	0.1	2.5	X
AK6 - 240C	6-170C	240	10	15	250	285	10	340	6,000	0.1	2.0	X
AK6 - 380C	6-380C	380	10	15	401	443	10	520	6,000	0.1	1.4	X
AK6 - 430C	6-430C	430	10	15	440	490	10	625	6,000	0.1	1.0	X

Note: Using 8/20μS wave shape as defined in IEC 61000-4-5.

Physical Specifications

Weight	Contact manufacturer
Case	Epoxy encapsulated
Terminal	Silver plated leads, solderable per MIL-STD-750, Method 2026

Flow/Wave Soldering (Solder Dipping)

Peak Temperature :	265°C
Dipping Time :	10 seconds
Soldering :	1 time

Wave Solder Profile

Figure 1 - Non Lead-free Profile

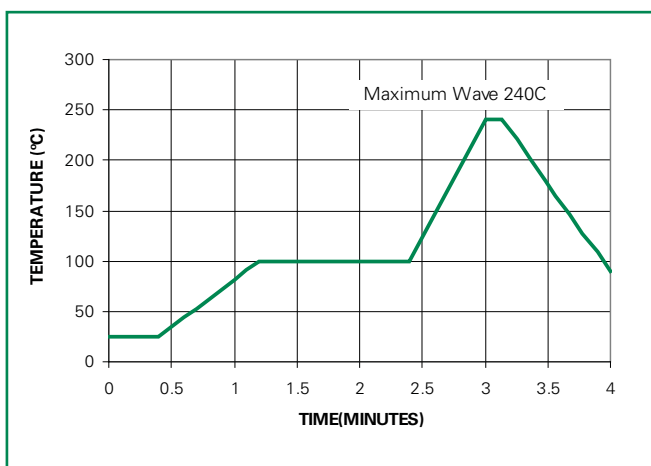
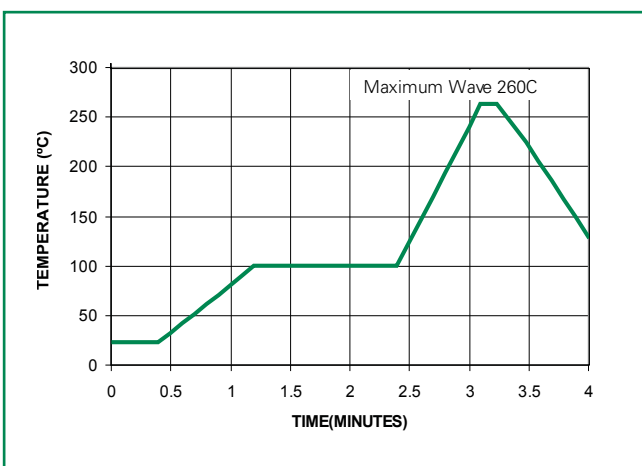


Figure 2 - Lead-free Profile



Ratings and Characteristic Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

Figure 3- Peak Power Derating

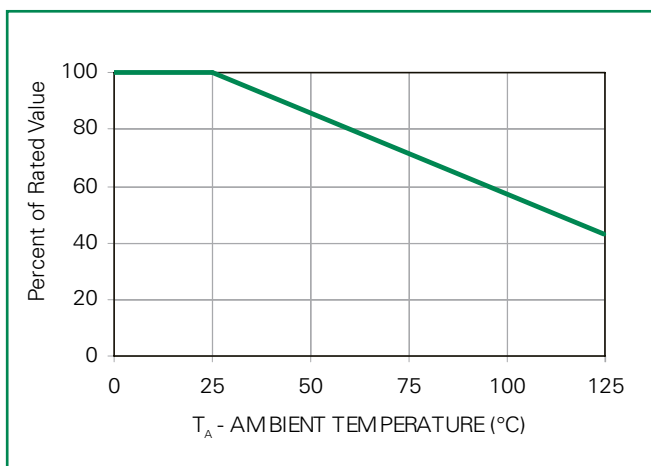
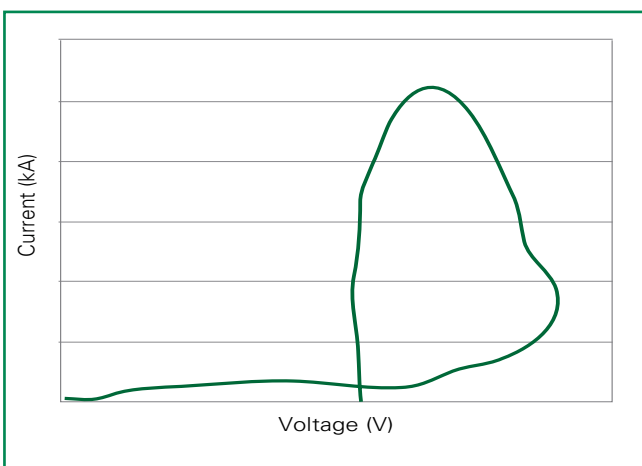


Figure 4 - Surge Response



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Figure 5 - Typical Peak Pulse Power Rating Curve

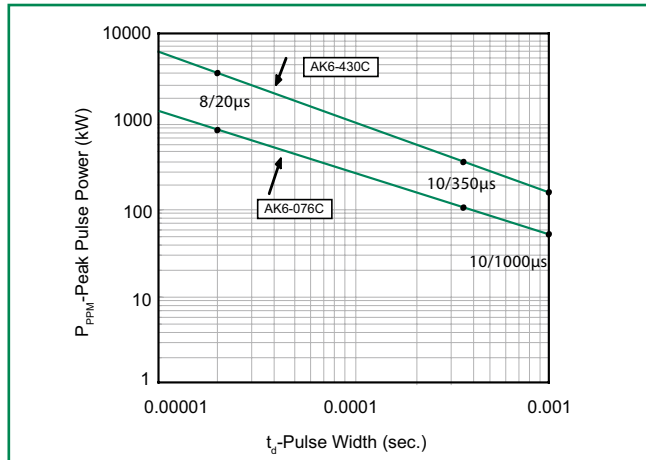


Figure 6 - Typical V_{BR} Vs Junction Temperature

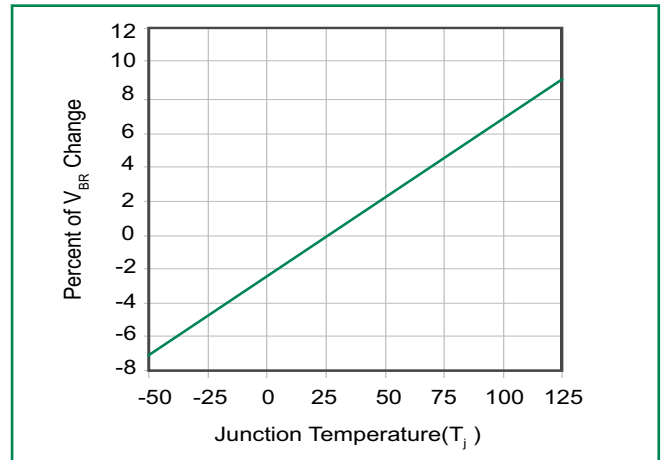


Figure 7 - Surge Response (8/20 Surge current waveform)

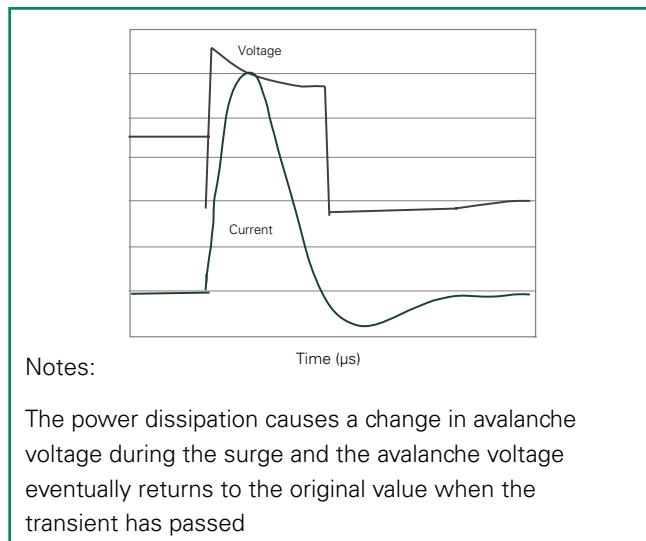
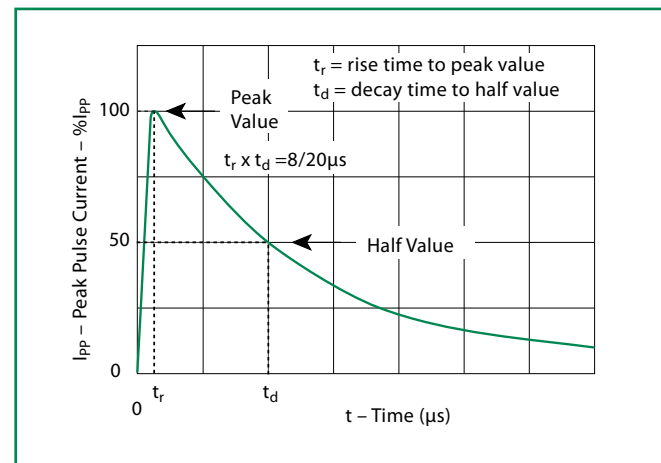
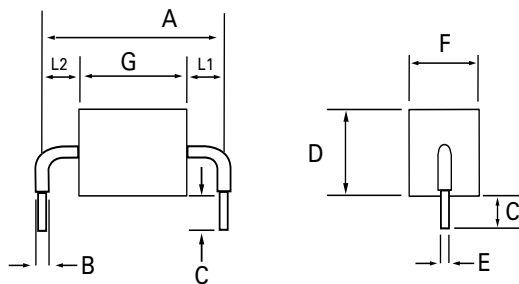


Figure 8 - Pulse Waveform

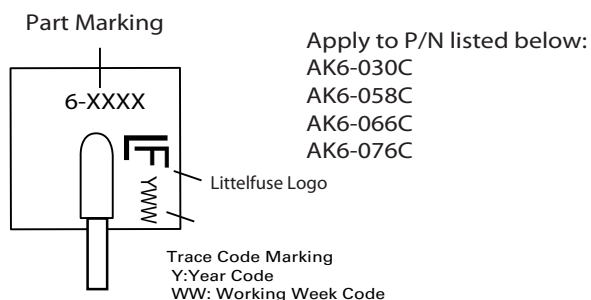


Dimensions

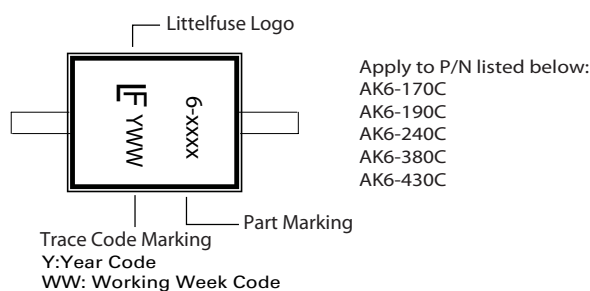


Dimensions	Inches	Millimeters
A	0.950 +/- 0.040	24.15 +/- 1.00
B	0.095 +/- 0.024	2.4 +/- 0.60
C	0.236 +/- 0.040	6.00 +/- 1.00
D	0.570 max.	14.48 max.
E	0.050 +/- 0.002	1.270 +/- 0.05
F	0.500 max.	12.70 max.
G - 030C	0.161 +/- 0.040	4.10 +/- 1.00
G - 058C/066C/076C	0.189 +/- 0.040	4.8 +/- 1.00
G - 170C/190C	0.320 +/- 0.040	8.13 +/- 1.00
G - 240C	0.370 +/- 0.040	9.4 +/- 1.00
G - 380C/430C	0.543 +/- 0.040	13.8 +/- 1.00
L1/L2	L1 = L2 tolerance +/- 0.04 inch (1.0 mm)	

Part Marking System

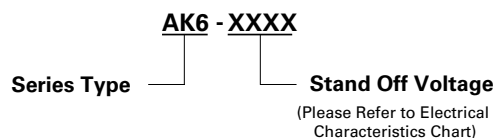


Type 1 - Side View



Type 2 - Top View

Part Numbering System



Packing Options

Part Number	Component Package	Quantity	Packaging Option
AK6-XXXX	AK Package	56	Bulk