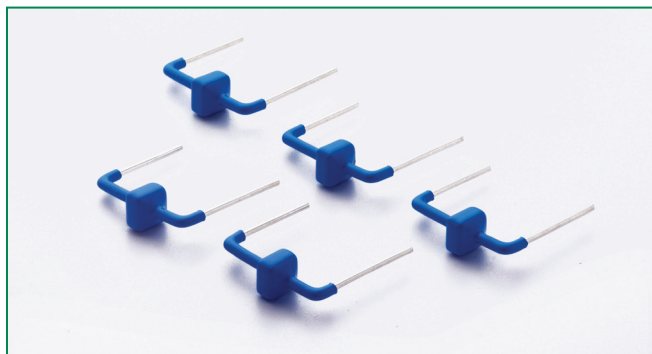


AK3 Series



Description

The AK3 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 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.

Agency Approvals

AGENCY	AGENCY FILE NUMBER
	E128662

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

Parameter	Symbol	Value	Unit
Operating Storage Temperature Range	T _{STG}	(-55 to 150	°C
Operating Junction Temperature Range	T _J	(-55 to 125	°C
Current Rating ¹	I _{PP}	3	kA

Note:

1. Rated I_{PP} measured with 8 x 20μs pulse.

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
- Halogen-free
- RoHS compliant
- Glass passivated junction

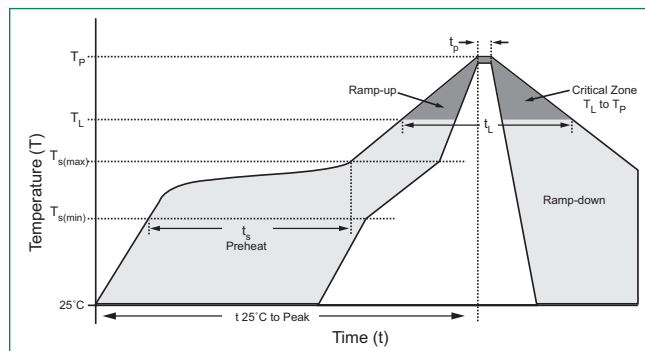
Electrical Characteristics

Part Numbers	Standoff Voltage (V _{SO}) Volts	Max. Reverse Leakage (I _R) @ V _{SO} 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			
AK3 - 015C	15	20	16	19	10	28	3,000	0.1	9	X
AK3 - 030C	30	20	32	37	10	90	3,000	0.1	11	X
AK3 - 058C	58	20	64	70	10	110	3,000	0.1	6	X
AK3 - 066C	66	20	72	80	10	120	3,000	0.1	6	X
AK3 - 076C	76	20	85	95	10	140	3,000	0.1	6	X
AK3 - 380C	380	20	401	443	10	520	3,000	0.1	2	X
AK3 - 430C	430	20	440	490	10	625	3,000	0.1	2	X

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

Soldering Parameters

Reflow Condition		Lead-free assembly
Pre Heat	- Temperature Min ($T_{s(min)}$)	150°C
	- Temperature Max ($T_{s(max)}$)	200°C
	- Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Time (min to max) (t_s)	60 – 150 seconds
Peak Temperature (T_p)		260 ^{+0/-5} °C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes Max.
Do not exceed		280°C



Flow/Wave Soldering (Solder Dipping)

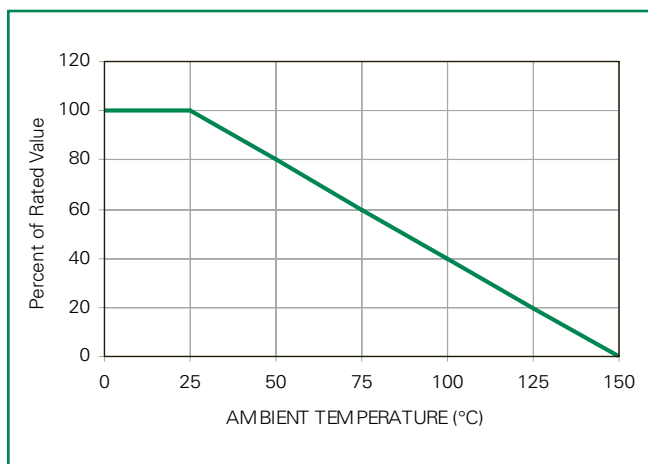
Peak Temperature :	265°C
Dipping Time :	10 seconds
Soldering :	1 time

Physical Specifications

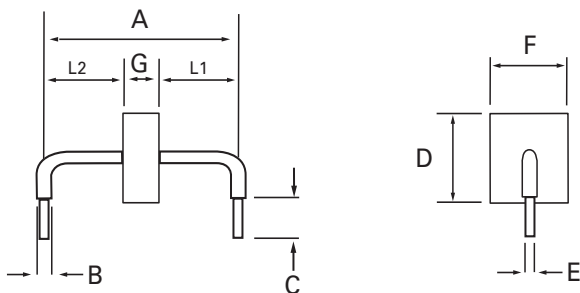
Weight	Contact manufacturer
Case	Epoxy encapsulated
Terminal	Silver plated leads, solderable per MIL-STD-202 Method 208

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

Peak Power Derating

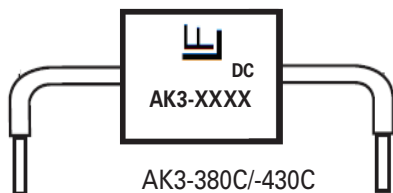
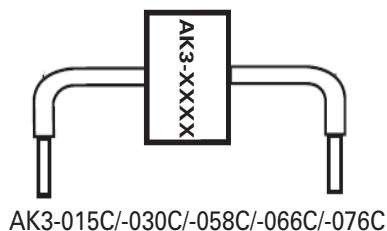


Dimensions



		Inches	Millimeters
A		0.951 +/- 0.040	24.15 +/- 1.00
B		0.094 +/- 0.024	2.40 +/- 0.60
C	-015C/-030C	0.236 +/- 0.039	6.00 +/- 1.00
	-058C/-066C		
	-076C		
	-380C/-430C	0.145 +/- 0.040	3.68 +/- 1.00
D		0.433 max.	11.0 max.
E		0.050 +/- 0.002	1.27 +/- 0.05
F		0.374 max.	9.50 max.
G	-058C/-066C	0.168 +/- 0.047	4.27 +/- 1.20
	-076C		
	-015C/-030C		
	-380C		
	-430C	0.547 +/- 0.047	13.90 +/- 1.20
		0.583 +/- 0.047	14.80 +/- 1.20
L1	-058C/-066C	0.391 +/- 0.047	9.94 +/- 1.20
	-076C		
	-015C/-030C		
	-380C		
	-430C	0.202 +/- 0.047	5.13 +/- 1.20
		0.184 +/- 0.047	4.68 +/- 1.20
L2		= A - (G+L1) tolerance +/- 0.047 inch (+/- 1.20 mm)	

Part Marking System



Part Numbering System

