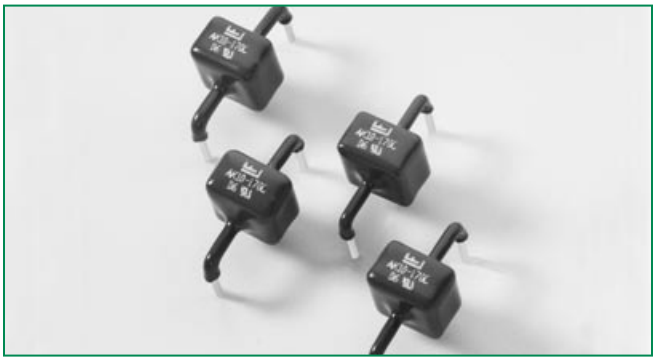
HF RoHS AK10 Series



Description

The 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 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

Features

- Halogen-Free
- 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

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}	10	kA

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

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	Max. Clamping Voltage V_{CL} @ Peak Pulse Current (I_{PP}) (Note 1)		Max. Temp Coefficient of V_{BR}	Max. Capacitance 0 Bias 10kHz	Agency Approval ®
			Min Volts	Max Volts	(mA)	V_{CL} Volts	I_{PP} Amps	(%/°C)	(nF)	
AK10 - 058C	58	20	64	70	10	110	10,000	0.1	6.5	X
AK10 - 076C	76	20	85	95	10	140	10,000	0.1	6.5	X
AK10 - 170C	170	20	180	220	10	260	10,000	0.1	2.8	X
AK10 - 190C	190	20	200	245	10	290	10,000	0.1	2.5	X
AK10 - 240C	240	20	250	285	10	340	10,000	0.1	2.2	X
AK10 - 380C	380	20	401	443	10	520	10,000	0.1	2.0	X
AK10 - 430C	430	20	440	490	10	625	10,000	0.1	1.4	X

Note: Using 8 x 20µS wave shaped defined in IEC 61000-4-5.

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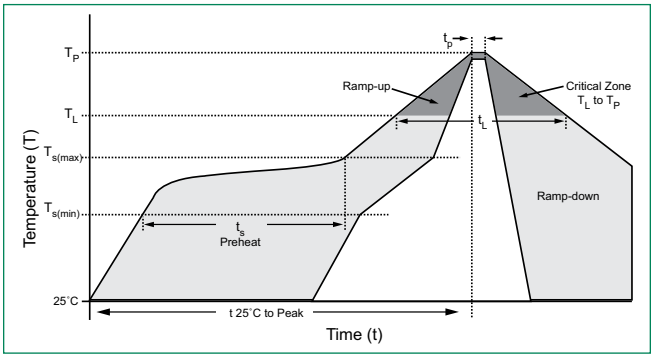
Specifications are subject to change without notice.
Please refer to http://www.Littelfuse.com/series/AK10.html for current information.

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)

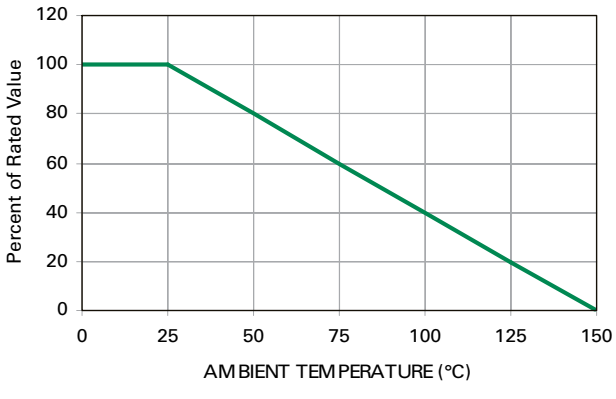
Peak Temperature :	265°C
Dipping Time :	10 seconds
Soldering :	1 time

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°C unless otherwise noted)

Peak Power Derating



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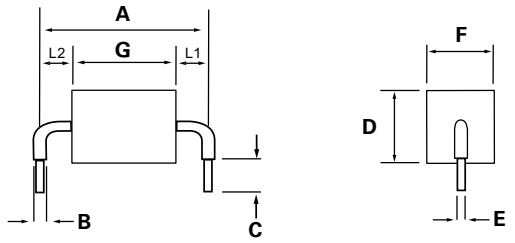
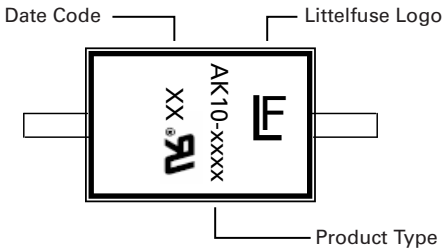
Dimensions



Dimensions	Inches	Millimeters
A	0.950	24.15
B	0.095	2.4
C - 058C/076C	0.236	6.00
C	0.145	3.68
D	0.570 max.	14.48 max.
E	0.050	1.270
F	0.500 max.	12.70 max.
G - 058C/076C	0.200	5.08
G - 170C/190C	0.362	9.2
G - 240C	0.420	10.67
G - 380C/430C	0.650	16.50
L1	0.310	7.87
L1 - 380C/430C	0.177	4.5
L2= A - (G+L1) tolerance +/- 0.04 inch (1.0 mm)		

Part Marking System



Note: UL mark does not appear on -058C and -076C.

Part Numbering System

AK10 **XXXX**

Series Type

Stand Off Voltage

(Please Refer to Electrical Characteristics Chart)

AK10 Series

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