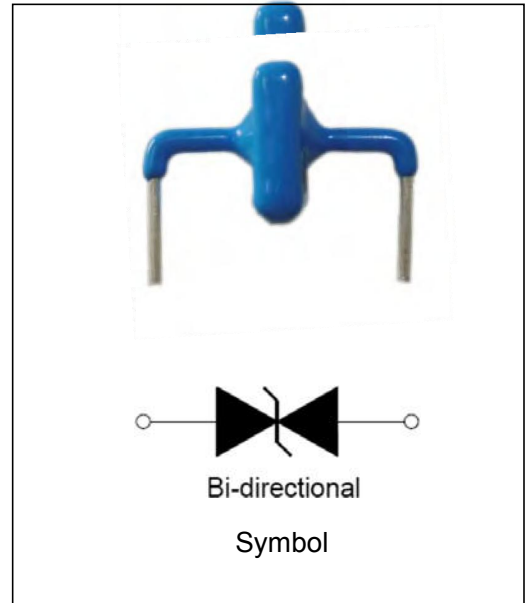




DESCRIPTION:

The AK15 series of high current bidirectional transient suppressors are designed for A.C. line protection and high power DC bus clamping applications. These devices offer bidirectional port protection from 30 volts to 430 volts. They provide a clamping voltage lower than the avalanche 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.



FEATURES:

- ✧ Halogen-free.
- ✧ Bi-directional.
- ✧ RoHS compliant.
- ✧ Low slope resistance.
- ✧ Very low clamping voltage.
- ✧ Sharp breakdown voltage.
- ✧ Glass Passivated Junction for reliability.
- ✧ Foldback technology for superior clamping factor.
- ✧ High temperature soldering: 260°C/10s at terminals.
- ✧ High reliability application and automotive grade (AEC-Q101 qualified).

IEC COMPATIBILITY:

- ✧ ISO16750-2 P5A 12V system (90V/4Ω/200ms 10c)
- ✧ ISO16750-2 P5A 24V system (151V/8Ω/200ms 10c)

ABSOLUTE MAXIMUM RATINGS (T_A=25°C, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Current Rating per 8/20 μs IEC 61000-4-5	I _{PP}	15	KA
Operating Junction Temperature Range	T _J	-55 to +150	°C
Operating Storage Temperature Range	T _S	-55 to +150	°C

ELECTRICAL CHARACTERISTICS (T_A=25°C)

Part Number	V _R	V _{BR} @I _T		I _T	I _R @V _R	V _C @I _{pp}	I _{pp} ^①
		Min (V)	Max (V)				
Bi-Polar	V			μA	μA	V	A
AK15-030CH	30	33	37	10	20	80	15000
AK15-042CH	42	47	51	10	20	105	15000
AK15-058CH	58	64	70	10	20	110	15000
AK15-066CH	66	72	80	10	20	120	15000
AK15-076CH	76	85	95	10	20	140	15000
AK15-100CH	100	110	122	10	20	165	15000
AK15-133CH	133	147	162	10	20	220	15000
AK15-170CH	170	180	205	10	20	260	15000
AK15-190CH	190	200	245	10	20	290	15000
AK15-240CH	240	250	285	10	20	340	15000
AK15-275CH	275	300	335	10	20	435	15000
AK15-300CH	300	330	366	10	20	470	15000
AK15-380CH	380	401	443	10	20	520	15000
AK15-430CH	430	440	490	10	20	625	15000

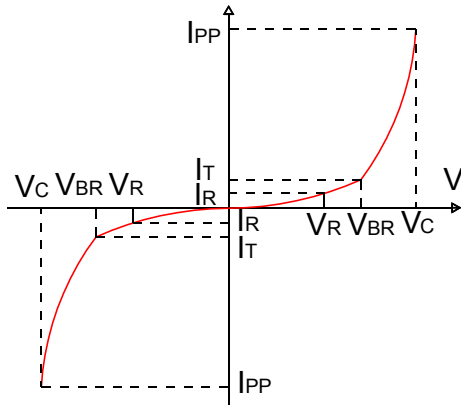
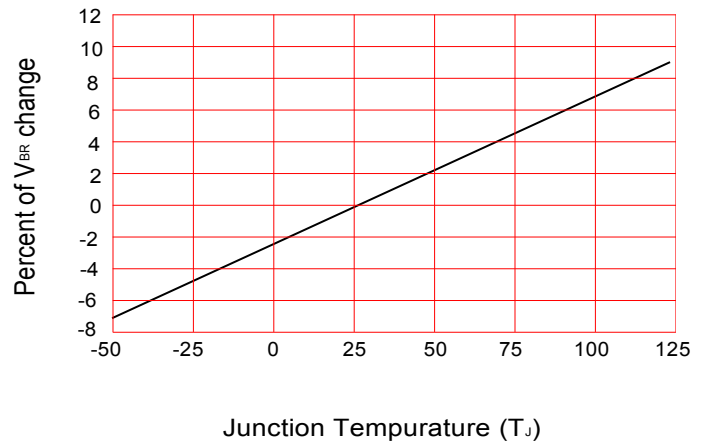
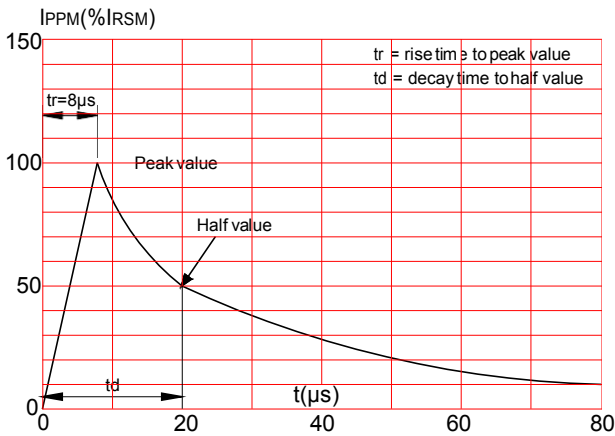
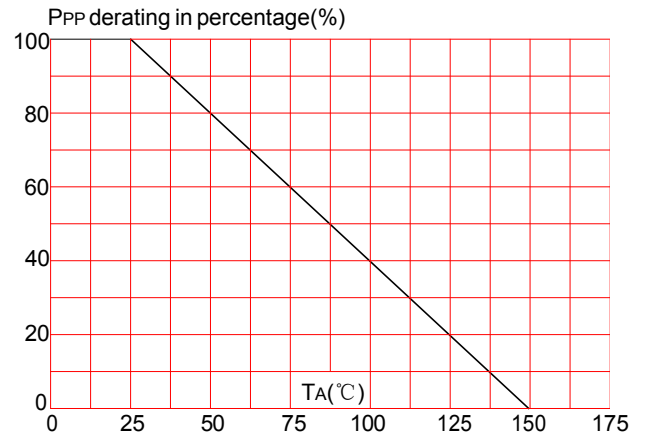
① Surge waveform: 8/20μs

V_R : Stand-off Voltage -- Maximum voltage that can be applied

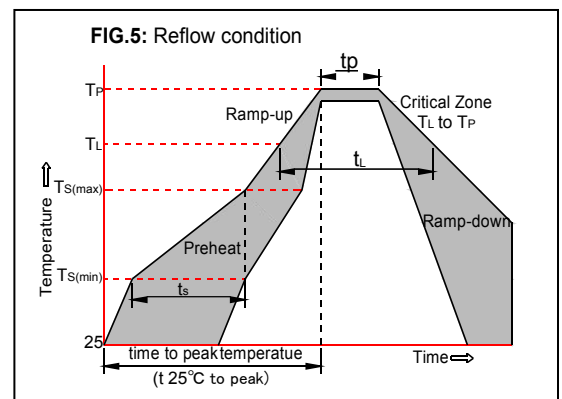
V_{BR}: Breakdown Voltage

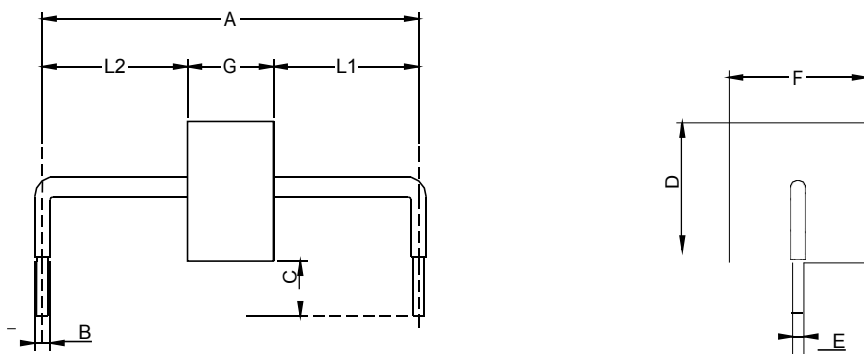
V_C: Clamping Voltage -- Peak voltage measured across the suppressor at a specified I_{pp}

I_R: Reverse Leakage Current

RATINGS AND V-I CHARACTERISTICS CURVES ($T_A=25^\circ\text{C}$, unless otherwise noted)
FIG.1: V-I Curve Characteristics (Bi-directional)

FIG.2: Typical V_{BR} Vs Junction Temperature

FIG.3: Pulse waveform

FIG.4: Pulse derating curve

SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see FIG.5)
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 (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(\max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature (T_L) (Liquid us)	+217°C
	-Temperature (t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260°C



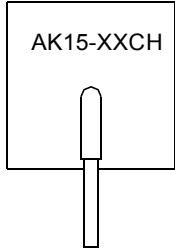
PACKAGE MECHANICAL DATA


Size A			
Symbol	Inches	Millimeter	
A	0.951±0.040	24.15±1.00	
B	0.094±0.024	2.40±0.60	
C	0.236±0.039	6.00±1.00	
D	0.64max	16.0max	
E	0.050±0.002	1.27±0.05	
F	0.64max	16.0max	
G	012C to 025C	0.20max	5.0max
	030C to 042C	0.24max	6.0max
	058C to 076C	0.32max	8.0max
	100C to 133C	0.40max	10.0max
	170C to 190C	0.48max	12.0max
	240C to 300C	0.64max	16.0max
	380C to 430C	0.80max	20.0max
L ₁ /L ₂	L ₁ =L ₂ tolerance ±0.047inch (±1.20 mm)		

Size B			
Symbol	Inches	Millimeter	
A	0.630±0.020	16.00±0.50	
B	0.094±0.024	2.40±0.60	
C	0.236±0.039	6.00±1.00	
D	0.64max	16.0max	
E	0.050±0.002	1.27±0.05	
F	0.64max	16.0max	
G	012C to 025C	0.20max	5.0max
	030C to 042C	0.24max	6.0max
	058C to 076C	0.32max	8.0max
	100C to 133C	0.40max	10.0max
	170C to 190C	None	None
	240C to 300C	None	None
	380C to 430C	None	None
L ₁ /L ₂	L ₁ =L ₂ tolerance ±0.047inch (±1.20 mm)		



MARKING & ORDERING INFORMATION



AK 15 - XX C H
(1) (2) (3) (4) (5)

- (1) AK series
- (2) $I_{PP}=15KA$
- (3) Reverse stand-off voltage
- (4) Bi-directional
- (5) For AEC-Q101

Part Number	Case Type	Quantity	Packing Option
AK15-XXCH	AKS	84pcs	Box

Website: <http://www.jksemi.com>

For additional information, please contact your local Sales Representative.

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