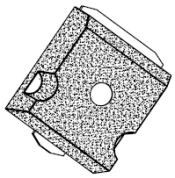
AKS Series 6KA Transient Voltage Suppressor

Rev.1.2

DESCRIPTION:

The AKS series of high current bi-directional transient suppressors are designed for A.C. line protection and high power DC bus clamping applications. 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.



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Symbol

FEATURES:

- ✧ Halogen-free.
- ✧ Bi-directional.
- ✧ Low slope resistance.
- ✧ Very low clamping voltage.
- ✧ Sharp breakdown voltage.
- ✧ RoHS compliant.
- ✧ Glass passivated junction.
- ✧ High power TVS with compact design in surface mount package
- ✧ Plastic package has underwriters laboratory flammability 94V-0.
- ✧ Ideal for automatic pick and place assembly and reflow process to reduce the manufacturing cost and increase the soldering quality compared to axial leads package.
- ✧ High temperature reflow soldering: 260℃/40s at terminals.

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

Parameter	Symbol	Value	Unit
Peak current rating per 8/20μs IEC 61000-4-5	I_{PP}	6	KA
Operating junction temperature range	T_J	-55 to +150	℃
Storage temperature range	T_{STG}	-55 to +150	℃

ELECTRICAL CHARACTERISTICS (T_A=25℃)

Part Number	V_R	V_{BR}@I_T		I_T	I_R@V_R	V_C@I_{PP}	I_{PP}①
Bi-Polar	V	Min(V)	Max(V)	mA	μA	V	A
AK6-058CS	58	64	70	10	10	110	6000
AK6-066CS	66	72	80	10	10	120	6000
AK6-076CS	76	85	95	10	10	140	6000

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℃, unless otherwise noted)

FIG.1:V- I curve characteristics (Bi-directional)

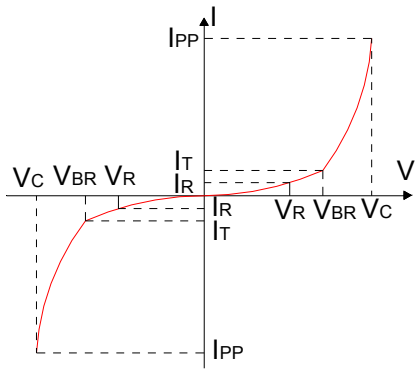


FIG.2: Typical V_{BR} vs. junction temperature

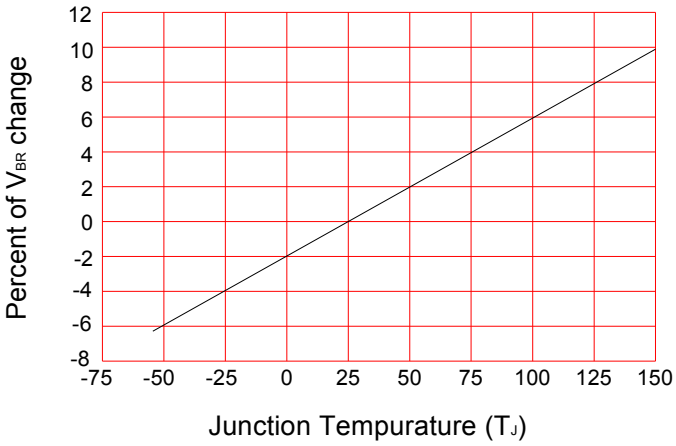


FIG.3: Pulse waveform

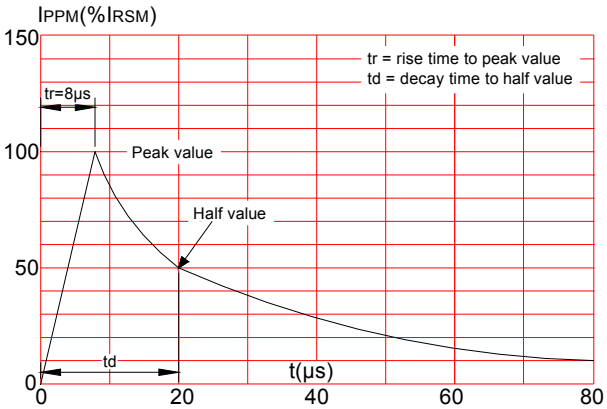
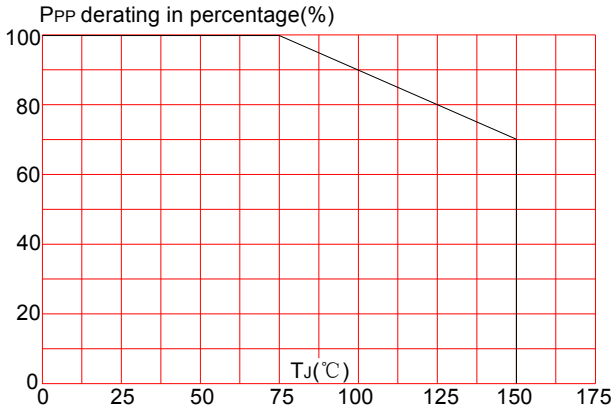
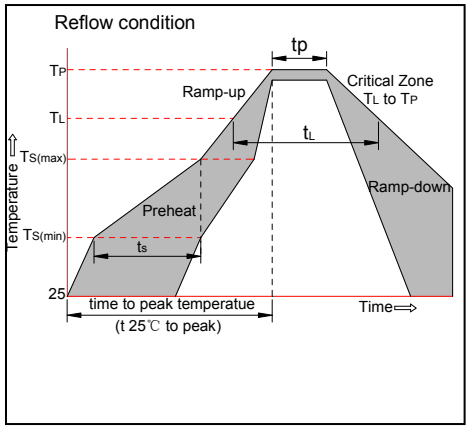


FIG.4: Pulse derating curve

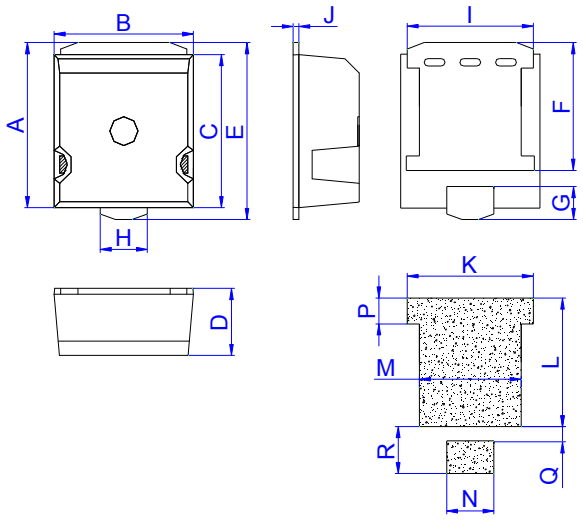


SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see figure at right)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquidus Temp (T_L)to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L)(Liquidus)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃of actual Peak Temp (t_p)		20-40secs.
Ramp-down Rate		6℃/sec. Max
Time 25℃ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃



PACKAGE MECHANICAL DATA



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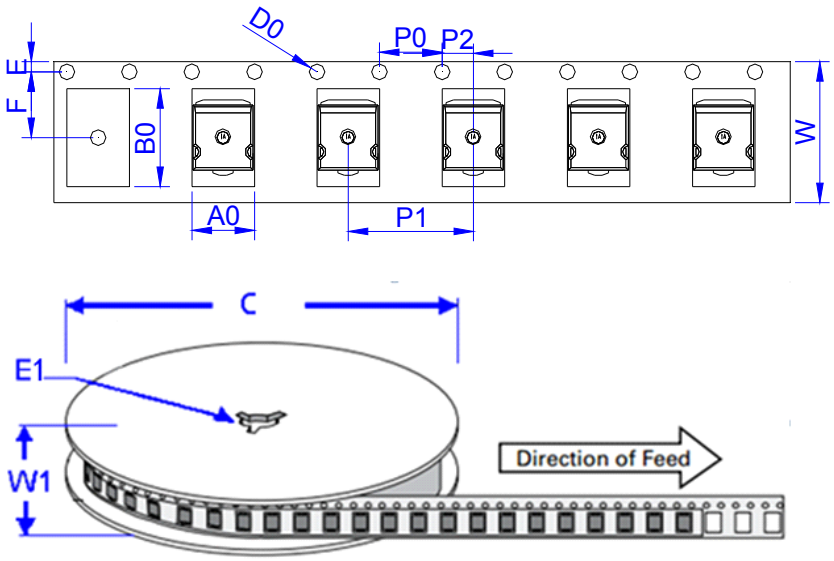
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	17.00		17.60	0.669		0.693
B	14.50		15.10	0.571		0.594
C	15.75		16.35	0.620		0.644
D	6.85		7.20	0.270		0.283
E	18.20		18.70	0.717		0.736
F	13.10		13.60	0.516		0.535
G	3.15		3.75	0.124		0.148
H	4.85		5.15	0.191		0.203
I	13.20		13.60	0.520		0.535
J	0.50		0.70	0.020		0.028
K		13.70			0.539	
L		13.45			0.530	
M		10.80			0.425	
N		5.30			0.209	
P		3.00			0.118	
Q		1.50			0.059	
R		4.90			0.193	

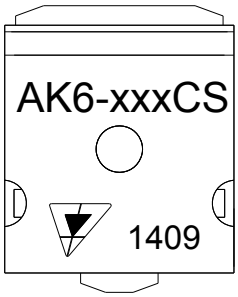
TAPE AND REEL SPECIFICATION-SMTO-218Tab



Ref.	Dimensions	
	Millimeters	Inches
A0	15.1 ± 0.3	0.594± 0.012
B0	18.8 ± 0.3	0.740 ± 0.012
C	330	13
D0	1.50 ± 0.1	0.059 ± 0.004
E	1.75 ± 0.2	0.069 ± 0.008
E1	13.30 ± 0.3	0.524± 0.012
F	14.20 ± 0.2	0.559 ± 0.008
P0	4.0 ± 0.2	0.157 ± 0.008
P1	20.0 ± 0.2	0.787 ± 0.008
P2	2.0 ± 0.2	0.079 ± 0.008
W	32.0± 0.2	1.260 ± 0.008
W1	36.0±0.5	1.417±0.020

OUTLINE	PACKAGE	UNIT WEIGHT (g/PCS) typ.	REEL (PCS)	REEL DIAMETERS (mm)
TAPING	SMTO-218Tab	6.13	400	330

MARKING & ORDERING INFORMATION



1409:In ninth week,2014

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