

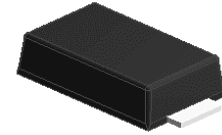
## 600W,10 - 180V Transient Voltage Suppressors

### Features

- Very fast response time
- Glass passivated junction
- Moisture sensitivity: level 1, per J-STD-020
- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- Halogen-free according to IEC 61249-2-21 definition
- 600 W peak pulse power capability with a 10/1000  $\mu$ s waveform
- AEC-Q101 qualified



**RoHS**  
COMPLIANT



eSGB (DO-221AC)

### Applications

- SMPS
- Adapters
- Monitor

### Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Ratings	Unit
Peak power dissipation with a 10/1000us waveform	$P_{PPM}$	600	W
Peak pulse current with a 10/1000us waveform	$I_{PPM}$	See Next Table	A
Power dissipation, on infinite heat sink at $T_L=75^\circ\text{C}$	$P_D$	4	W
Peak forward surge current, 8.3ms single half-sine wave	$I_{FSM}$	80	A
Typical Thermal Resistance , Junction to Ambient	$R_{\theta JA}$	85	$^\circ\text{C/W}$
Typical Thermal Resistance , Junction to Case	$R_{\theta JC}$	15	$^\circ\text{C/W}$
Typical Thermal Resistance , Junction to Lead	$R_{\theta JL}$	18	$^\circ\text{C/W}$
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$



# AL6TVS10AS thru AL6TVS180AS

GOOD-ARK Electronics

## Electrical Characteristics (TA = 25 °C unless otherwise noted)

Part Number	Marking	Breakdown Voltage VBR (Volts)		Test Current I <sub>T</sub> (mA)	Stand off Voltage V <sub>WM</sub> (Volts)	Maximum reverse leakage at V <sub>WM</sub> I <sub>D</sub> (μA)	Maximum Peak Pulse Current I <sub>ppM</sub> (A)	Maximum Clamping Voltage at I <sub>ppM</sub> V <sub>C</sub> (Volts)
		Min	Max					
AL6TVS10AS	AL610AS	11.1	12.3	1.0	10	5.0	35.3	17.0
AL6TVS11AS	AL611AS	12.2	13.5	1.0	11	5.0	33.0	18.2
AL6TVS12AS	AL612AS	13.3	14.7	1.0	12	5.0	30.2	19.9
AL6TVS13AS	AL613AS	14.4	15.9	1.0	13	1.0	27.9	21.5
AL6TVS14AS	AL614AS	15.6	17.2	1.0	14	1.0	25.9	23.2
AL6TVS15AS	AL615AS	16.7	18.5	1.0	15	1.0	24.6	24.4
AL6TVS16AS	AL616AS	17.8	19.7	1.0	16	1.0	23.1	26.0
AL6TVS17AS	AL617AS	18.9	20.9	1.0	17	1.0	21.7	27.6
AL6TVS18AS	AL618AS	20.0	22.1	1.0	18	1.0	20.5	29.2
AL6TVS20AS	AL620AS	22.2	24.5	1.0	20	1.0	18.5	32.4
AL6TVS22AS	AL622AS	24.4	26.9	1.0	22	1.0	16.9	35.5
AL6TVS24AS	AL624AS	26.7	29.5	1.0	24	1.0	15.4	38.9
AL6TVS26AS	AL626AS	28.9	31.9	1.0	26	1.0	14.3	42.1
AL6TVS28AS	AL628AS	31.1	34.4	1.0	28	1.0	13.2	45.4
AL6TVS30AS	AL630AS	33.3	36.8	1.0	30	1.0	12.4	48.4
AL6TVS33AS	AL633AS	36.7	40.6	1.0	33	1.0	11.3	53.3
AL6TVS36AS	AL636AS	40.0	44.4	1.0	36	1.0	10.3	58.1
AL6TVS40AS	AL640AS	44.4	49.1	1.0	40	1.0	9.3	64.5
AL6TVS43AS	AL643AS	47.8	52.8	1.0	43	1.0	8.6	69.4
AL6TVS45AS	AL645AS	50.0	55.3	1.0	45	1.0	8.3	72.7
AL6TVS48AS	AL648AS	53.3	58.9	1.0	48	1.0	7.8	77.4
AL6TVS51AS	AL651AS	56.7	62.7	1.0	51	1.0	7.3	82.4
AL6TVS54AS	AL654AS	60.0	66.3	1.0	54	1.0	6.9	87.1
AL6TVS58AS	AL658AS	64.4	71.2	1.0	58	1.0	6.4	93.6
AL6TVS60AS	AL660AS	66.7	73.7	1.0	60	1.0	6.2	96.8
AL6TVS64AS	AL664AS	71.1	78.6	1.0	64	1.0	5.8	103
AL6TVS70AS	AL670AS	77.8	86.0	1.0	70	1.0	5.3	113
AL6TVS75AS	AL675AS	83.3	92.1	1.0	75	1.0	5.0	121
AL6TVS78AS	AL678AS	86.7	95.8	1.0	78	1.0	4.8	126
AL6TVS85AS	AL685AS	94.4	104	1.0	85	1.0	4.4	137
AL6TVS90AS	AL690AS	100	111	1.0	90	1.0	4.1	146
AL6TVS100AS	AL6100AS	111	123	1.0	100	1.0	3.7	162
AL6TVS110AS	AL6110AS	122	135	1.0	110	1.0	3.4	177
AL6TVS120AS	AL6120AS	133	147	1.0	120	1.0	3.1	193

## Electrical Characteristics (TA = 25 °C unless otherwise noted)

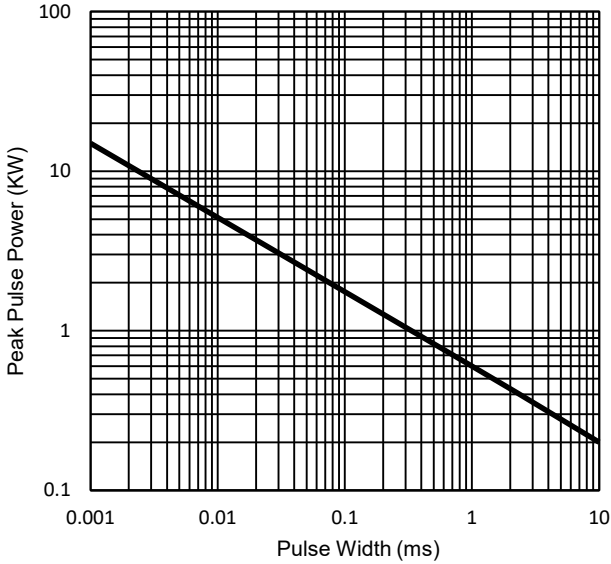
Part Number	Marking	Breakdown Voltage VBR (Volts)		Test Current I <sub>T</sub> (mA)	Stand off Voltage V <sub>WM</sub> (Volts)	Maximum reverse leakage at V <sub>WM</sub> I <sub>D</sub> (μA)	Maximum Peak Pulse Current I <sub>ppM</sub> (A)	Maximum Clamping Voltage at I <sub>ppM</sub> V <sub>C</sub> (Volts)
		Min	Max					
AL6TVS130AS	AL6130AS	144	159	1.0	130	1.0	2.9	209
AL6TVS150AS	AL6150AS	167	185	1.0	150	1.0	2.5	243
AL6TVS160AS	AL6160AS	178	197	1.0	160	1.0	2.3	259
AL6TVS170AS	AL6170AS	189	209	1.0	170	1.0	2.2	275
AL6TVS180AS	AL6180AS	201	222	1.0	180	1.0	2.1	292

Note:

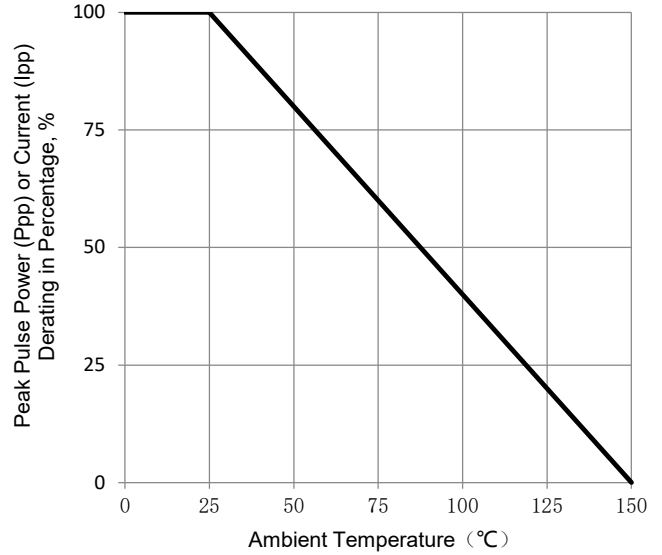
1. The thermal resistance from junction to ambient, case or lead, mounted on P.C.B with 5×5mm copper pads

## Ratings and Characteristics Curves

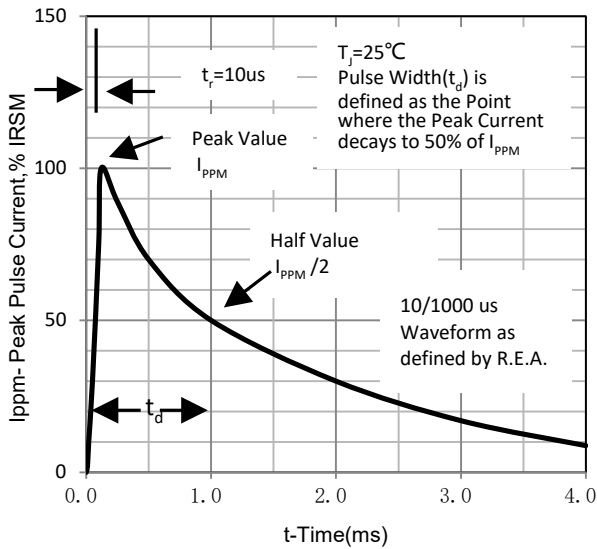
( $T_A = 25^\circ\text{C}$  unless otherwise noted)



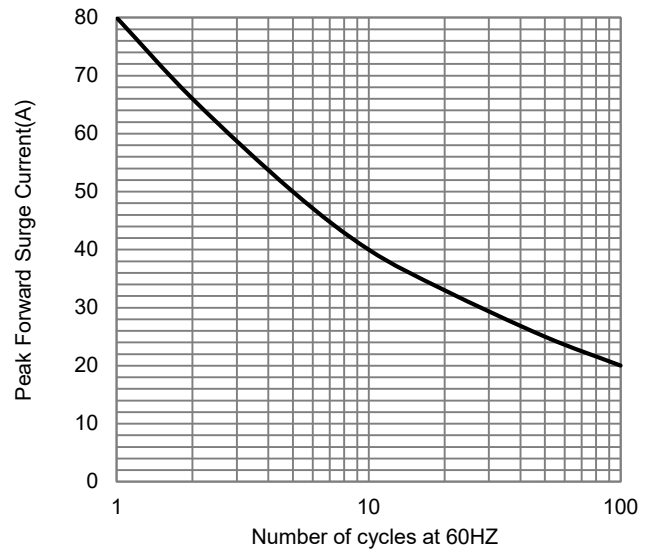
**Fig.1 - Peak Pulse Power Derating Curve**



**Fig.2 - Pulse Power vs Ambient Temperature**



**Fig.3 - Pulse Waveform**

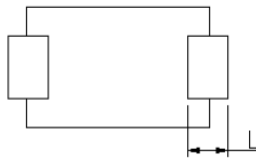
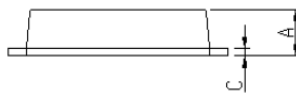
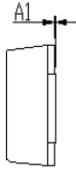
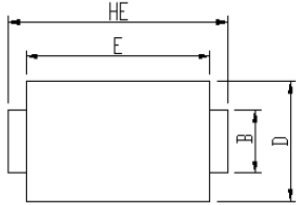


**Fig.4 - Maximum Non-Repetitive Surge Current**

## Package Outline Dimensions

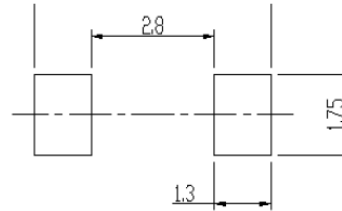
in inches (millimeters)

### eSGB (DO-221AC)



DIM	Unit: mm		Unit: inch	
	MIN	MAX	MIN	MAX
A	0.92	1.08	0.036	0.043
A1	0	0.1	0.000	0.004
B	1.25	1.45	0.049	0.057
C	0.1	0.25	0.004	0.010
D	2.6	2.8	0.102	0.110
E	4.1	4.3	0.161	0.169
L	0.7	1.1	0.028	0.043
HE	4.8	5.2	0.189	0.205

Soldering footprint



## Revision History

Document Version	Date of release	Description of changes
Rev.A	2023.06.15	Released Datasheet
Rev.B	2023.10.23	Modify document format
Rev.C	2023.12.29	Modify package name



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