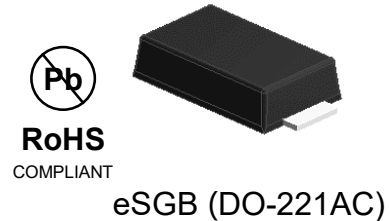


## 400W,10 - 180V Transient Voltage Suppressors

### 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
- 400 W peak pulse power capability with a 10/1000  $\mu$ s waveform
- AEC-Q101 qualified



### 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	$P_{PPM}$	400	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	$I_{FSM}$	40	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	$^\circ\text{C}$



# AL4TVS10A thru AL4TVS180A

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					
AL4TVS10A	A410A	11.1	12.3	1.0	10	2.5	23.5	17.0
AL4TVS11A	A411A	12.2	13.5	1.0	11	2.5	22.0	18.2
AL4TVS12A	A412A	13.3	14.7	1.0	12	2.5	20.1	19.9
AL4TVS13A	A413A	14.4	15.9	1.0	13	1.0	18.6	21.5
AL4TVS14A	A414A	15.6	17.2	1.0	14	1.0	17.2	23.2
AL4TVS15A	A415A	16.7	18.5	1.0	15	1.0	16.4	24.4
AL4TVS16A	A416A	17.8	19.7	1.0	16	1.0	15.4	26.0
AL4TVS17A	A417A	18.9	20.9	1.0	17	1.0	14.5	27.6
AL4TVS18A	A418A	20.0	22.1	1.0	18	1.0	13.7	29.2
AL4TVS20A	A420A	22.2	24.5	1.0	20	1.0	12.3	32.4
AL4TVS22A	A422A	24.4	26.9	1.0	22	1.0	11.3	35.5
AL4TVS24A	A424A	26.7	29.5	1.0	24	1.0	10.3	38.9
AL4TVS26A	A426A	28.9	31.9	1.0	26	1.0	9.5	42.1
AL4TVS28A	A428A	31.1	34.4	1.0	28	1.0	8.8	45.4
AL4TVS30A	A430A	33.3	36.8	1.0	30	1.0	8.3	48.4
AL4TVS33A	A433A	36.7	40.6	1.0	33	1.0	7.5	53.3
AL4TVS36A	A436A	40.0	44.4	1.0	36	1.0	6.9	58.1
AL4TVS40A	A440A	44.4	49.1	1.0	40	1.0	6.2	64.5
AL4TVS43A	A443A	47.8	52.8	1.0	43	1.0	5.8	69.4
AL4TVS45A	A445A	50.0	55.3	1.0	45	1.0	5.5	72.7
AL4TVS48A	A448A	53.3	58.9	1.0	48	1.0	5.2	77.4
AL4TVS51A	A451A	56.7	62.7	1.0	51	1.0	4.9	82.4
AL4TVS54A	A454A	60.0	66.3	1.0	54	1.0	4.6	87.1
AL4TVS58A	A458A	64.4	71.2	1.0	58	1.0	4.3	93.6
AL4TVS60A	A460A	66.7	73.7	1.0	60	1.0	4.1	96.8
AL4TVS64A	A464A	71.1	78.6	1.0	64	1.0	3.9	103
AL4TVS70A	A470A	77.8	86.0	1.0	70	1.0	3.5	113
AL4TVS75A	A475A	83.3	92.1	1.0	75	1.0	3.3	121
AL4TVS78A	A478A	86.7	95.8	1.0	78	1.0	3.2	126
AL4TVS80A	A480A	88.8	97.6	1.0	80	1.0	3.1	129
AL4TVS85A	A485A	94.4	104	1.0	85	1.0	2.9	137
AL4TVS90A	A490A	100	111	1.0	90	1.0	2.7	146
AL4TVS100A	A4100A	111	123	1.0	100	1.0	2.5	162
AL4TVS110A	A4110A	122	135	1.0	110	1.0	2.2	177

## 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					
AL4TVS120A	A4120A	133	147	1.0	120	1.0	2.1	193
AL4TVS130A	A4130A	144	159	1.0	130	1.0	1.9	209
AL4TVS140A	A4140A	155	171	1.0	140	1.0	1.8	224
AL4TVS150A	A4150A	167	185	1.0	150	1.0	1.6	243
AL4TVS160A	A4160A	178	197	1.0	160	1.0	1.5	259
AL4TVS170A	A4170A	189	209	1.0	170	1.0	1.4	275
AL4TVS180A	A4180A	201	222	1.0	180	1.0	1.4	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)

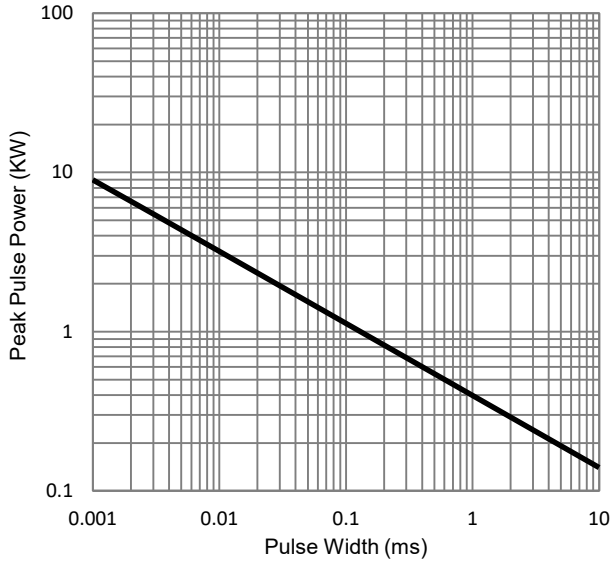


Fig.1 - Peak Pulse Power Derating Curve

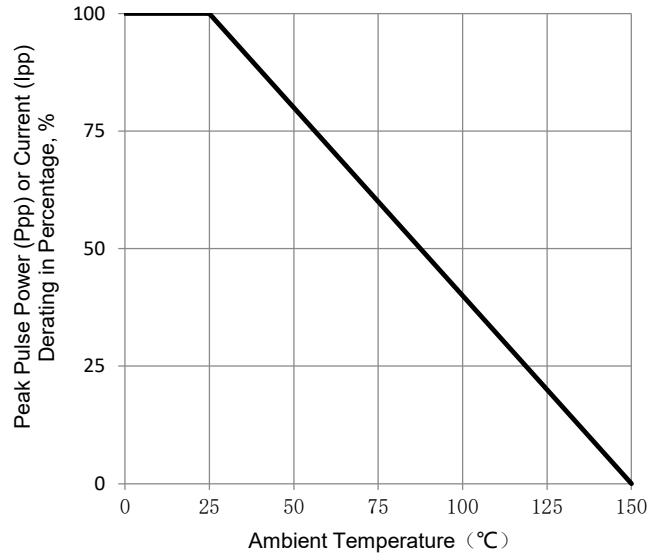


Fig.2 - Pulse Power vs Ambient Temperature

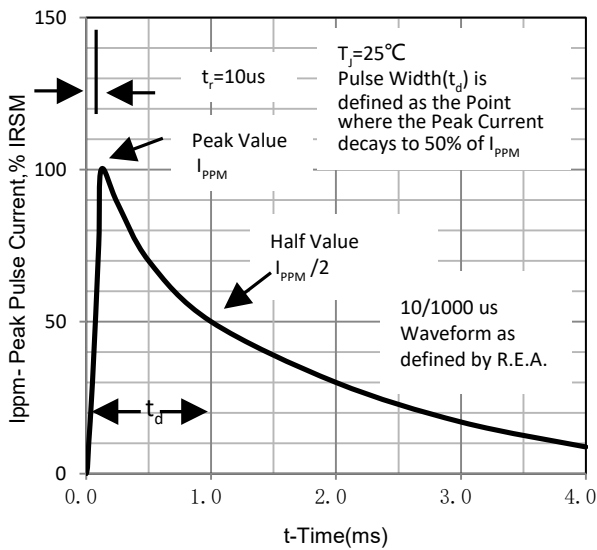


Fig.3 - Pulse Waveform

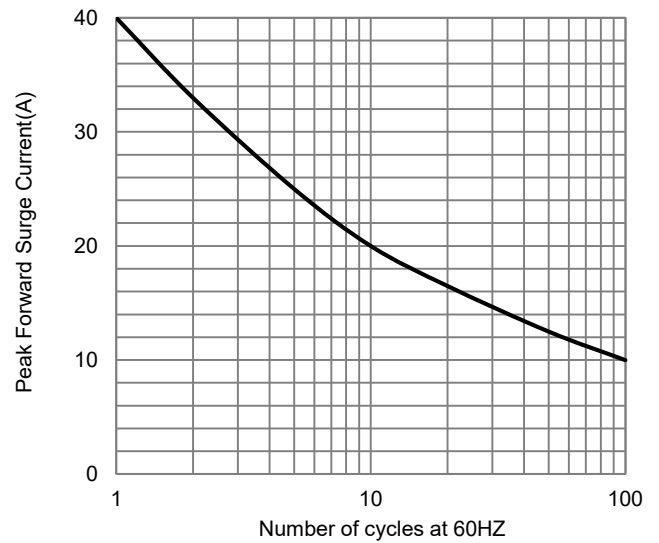
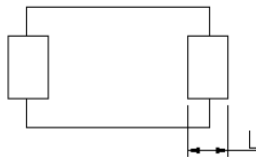
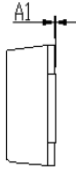
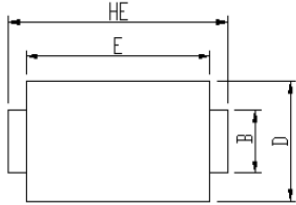


Fig.4 - Maximum Non-Repetitive Surge Current

## Package Outline Dimensions

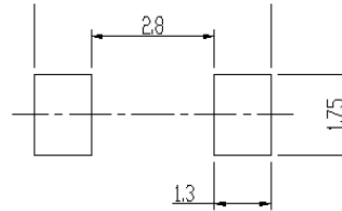
in inches (millimeters)

### 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	2021.06.15	Released Datasheet
Rev.B	2023.10.23	Modify document format
Rev.C	2023.12.29	Modify package name



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