

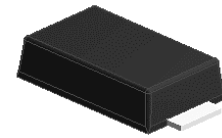
600W,10 - 180V Transient Voltage Suppressors

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 μ 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	$^\circ\text{C}$



AL6TVS10A thru AL6TVS180A

GOOD-ARK Electronics

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

Part Number	Marking	Breakdown Voltage VBR (Volts)		Test Current I _T (mA)	Stand off Voltage V _{WM} (Volts)	Maximum reverse leakage at V _{WM} I _D (μA)	Maximum Peak Pulse Current I _{ppM} (A)	Maximum Clamping Voltage at I _{ppM} V _C (Volts)
		Min	Max					
AL6TVS10A	A610A	11.1	12.3	1.0	10	5.0	35.3	17.0
AL6TVS11A	A611A	12.2	13.5	1.0	11	5.0	33.0	18.2
AL6TVS12A	A612A	13.3	14.7	1.0	12	5.0	30.2	19.9
AL6TVS13A	A613A	14.4	15.9	1.0	13	1.0	27.9	21.5
AL6TVS14A	A614A	15.6	17.2	1.0	14	1.0	25.9	23.2
AL6TVS15A	A615A	16.7	18.5	1.0	15	1.0	24.6	24.4
AL6TVS16A	A616A	17.8	19.7	1.0	16	1.0	23.1	26.0
AL6TVS17A	A617A	18.9	20.9	1.0	17	1.0	21.7	27.6
AL6TVS18A	A618A	20.0	22.1	1.0	18	1.0	20.5	29.2
AL6TVS20A	A620A	22.2	24.5	1.0	20	1.0	18.5	32.4
AL6TVS22A	A622A	24.4	26.9	1.0	22	1.0	16.9	35.5
AL6TVS24A	A624A	26.7	29.5	1.0	24	1.0	15.4	38.9
AL6TVS26A	A626A	28.9	31.9	1.0	26	1.0	14.3	42.1
AL6TVS28A	A628A	31.1	34.4	1.0	28	1.0	13.2	45.4
AL6TVS30A	A630A	33.3	36.8	1.0	30	1.0	12.4	48.4
AL6TVS33A	A633A	36.7	40.6	1.0	33	1.0	11.3	53.3
AL6TVS36A	A636A	40.0	44.4	1.0	36	1.0	10.3	58.1
AL6TVS40A	A640A	44.4	49.1	1.0	40	1.0	9.3	64.5
AL6TVS43A	A643A	47.8	52.8	1.0	43	1.0	8.6	69.4
AL6TVS45A	A645A	50.0	55.3	1.0	45	1.0	8.3	72.7
AL6TVS48A	A648A	53.3	58.9	1.0	48	1.0	7.8	77.4
AL6TVS51A	A651A	56.7	62.7	1.0	51	1.0	7.3	82.4
AL6TVS54A	A654A	60.0	66.3	1.0	54	1.0	6.9	87.1
AL6TVS58A	A658A	64.4	71.2	1.0	58	1.0	6.4	93.6
AL6TVS60A	A660A	66.7	73.7	1.0	60	1.0	6.2	96.8
AL6TVS64A	A664A	71.1	78.6	1.0	64	1.0	5.8	103
AL6TVS70A	A670A	77.8	86.0	1.0	70	1.0	5.3	113
AL6TVS75A	A675A	83.3	92.1	1.0	75	1.0	5.0	121
AL6TVS78A	A678A	86.7	95.8	1.0	78	1.0	4.8	126
AL6TVS85A	A685A	94.4	104	1.0	85	1.0	4.4	137
AL6TVS90A	A690A	100	111	1.0	90	1.0	4.1	146
AL6TVS100A	A6100A	111	123	1.0	100	1.0	3.7	162
AL6TVS110A	A6110A	122	135	1.0	110	1.0	3.4	177
AL6TVS120A	A6120A	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 _T (mA)	Stand off Voltage V _{WM} (Volts)	Maximum reverse leakage at V _{WM} I _D (μA)	Maximum Peak Pulse Current I _{ppM} (A)	Maximum Clamping Voltage at I _{ppM} V _C (Volts)
		Min	Max					
AL6TVS130A	A6130A	144	159	1.0	130	1.0	2.9	209
AL6TVS150A	A6150A	167	185	1.0	150	1.0	2.5	243
AL6TVS160A	A6160A	178	197	1.0	160	1.0	2.3	259
AL6TVS170A	A6170A	189	209	1.0	170	1.0	2.2	275
AL6TVS180A	A6180A	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)

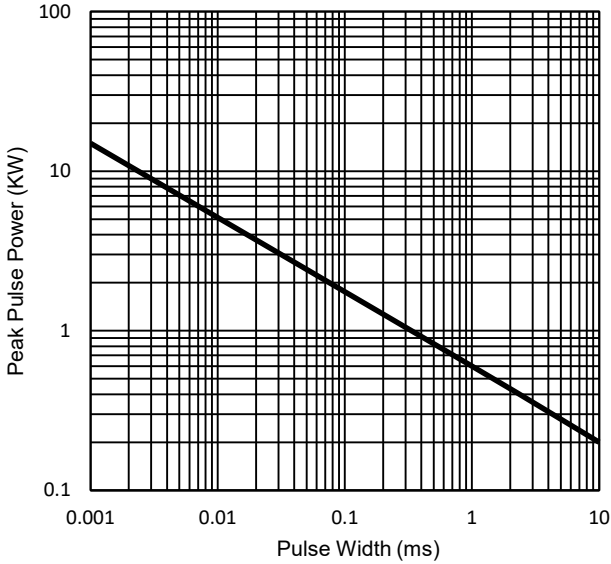


Fig.1 - Peak Pulse Power Derating Curve

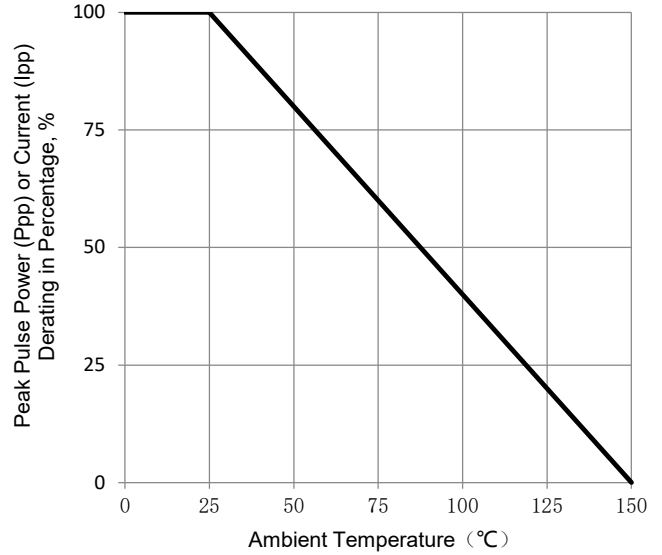


Fig.2 - Pulse Power vs Ambient Temperature

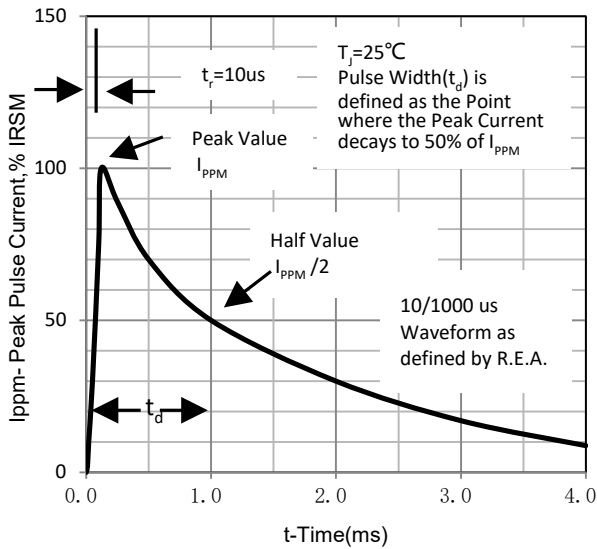


Fig.3 - Pulse Waveform

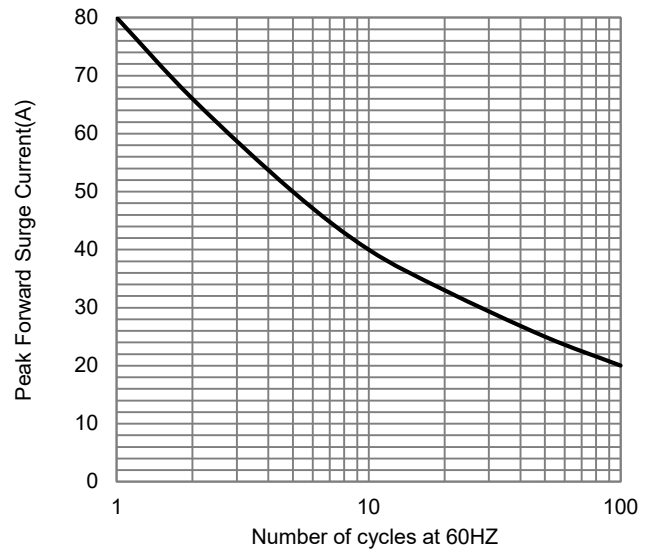
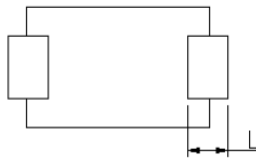
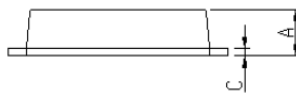
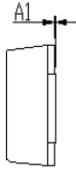
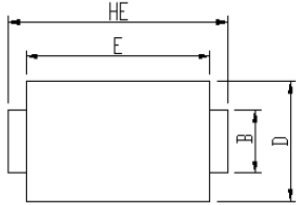


Fig.4 - Maximum Non-Repetitive Surge Current

Package Outline Dimensions

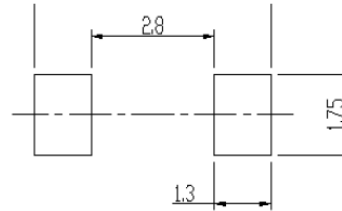
in inches (millimeters)

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	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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