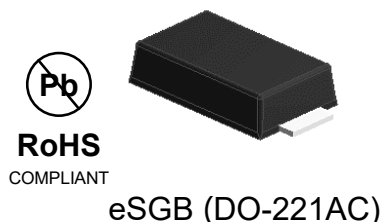


400W,5 - 90V Transient Voltage Suppressors

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 μ s waveform
- AEC-Q101 qualified



Applications

- SMPS
- Adapters
- Monitor

Absolute Maximum Ratings (T_A=25°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°C	P _D	4	W
Peak forward surge current, 8.3ms single half-sine wave	I _{FSM}	40	A
Operating junction and storage temperature range	T _J , T _{STG}	-55 to +150	°C

Thermal-Mechanical Specifications (T_A=25°C unless otherwise noted)

Parameter	Symbol	Typ	Unit
Thermal Resistance, Junction to Ambient	R _{thJA}	85	°C /W
Thermal Resistance, Junction to Case	R _{thJC}	15	°C /W
Thermal Resistance, Junction to Lead	R _{thJL}	18	°C /W

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

Part Number		Marking		Breakdown Voltage VBR (V)		Test Current IT (mA)	Stand off Voltage VWM (V)	Maximum reverse leakage at VWM ID (μA)	Maximum Peak Pulse Current IPPM (A)	Maximum Clamping Voltage at IPPM VC(V)
				Min	Max					
AL4TVS5.0AS	AL4TVS5.0CAS	AAES	AWES	6.40	7.07	10.0	5.0	800	43.5	9.2
AL4TVS6.0AS	AL4TVS6.0CAS	AAGS	AWGS	6.67	7.37	10.0	6.0	800	38.8	10.3
AL4TVS6.5AS	AL4TVS6.5CAS	AAKS	AWKS	7.22	7.98	10.0	6.5	500	35.7	11.2
AL4TVS7.0AS	AL4TVS7.0CAS	AAMS	AWMS	7.78	8.60	10.0	7.0	200	33.3	12.0
AL4TVS7.5AS	AL4TVS7.5CAS	AAPS	AWPS	8.33	9.21	1.0	7.5	100	31.0	12.9
AL4TVS8.0AS	AL4TVS8.0CAS	AARS	AWRS	8.89	9.83	1.0	8.0	50	29.4	13.6
AL4TVS8.5AS	AL4TVS8.5CAS	AATS	AWTS	9.44	10.4	1.0	8.5	10	27.8	14.4
AL4TVS9.0AS	AL4TVS9.0CAS	AAVS	AWVS	10.0	11.1	1.0	9.0	5.0	26.0	15.4
AL4TVS10AS	AL4TVS10CAS	AAXS	AWXS	11.1	12.3	1.0	10	2.5	23.5	17.0
AL4TVS11AS	AL4TVS11CAS	AAZS	AWZS	12.2	13.5	1.0	11	2.5	22.0	18.2
AL4TVS12AS	AL4TVS12CAS	ABES	AXES	13.3	14.7	1.0	12	2.5	20.1	19.9
AL4TVS13AS	AL4TVS13CAS	ABGS	AXGS	14.4	15.9	1.0	13	1.0	18.6	21.5
AL4TVS14AS	AL4TVS14CAS	ABKS	AXKS	15.6	17.2	1.0	14	1.0	17.2	23.2
AL4TVS15AS	AL4TVS15CAS	ABMS	AXMS	16.7	18.5	1.0	15	1.0	16.4	24.4
AL4TVS16AS	AL4TVS16CAS	ABPS	AXPS	17.8	19.7	1.0	16	1.0	15.4	26.0
AL4TVS17AS	AL4TVS17CAS	ABRS	AXRS	18.9	20.9	1.0	17	1.0	14.5	27.6
AL4TVS18AS	AL4TVS18CAS	ABTS	AXTS	20.0	22.1	1.0	18	1.0	13.7	29.2
AL4TVS20AS	AL4TVS20CAS	ABVS	AXVS	22.2	24.5	1.0	20	1.0	12.3	32.4
AL4TVS22AS	AL4TVS22CAS	ABXS	AXXS	24.4	26.9	1.0	22	1.0	11.3	35.5
AL4TVS24AS	AL4TVS24CAS	ABZS	AXZS	26.7	29.5	1.0	24	1.0	10.3	38.9
AL4TVS26AS	AL4TVS26CAS	ACES	AYES	28.9	31.9	1.0	26	1.0	9.5	42.1
AL4TVS28AS	AL4TVS28CAS	ACGS	AYGS	31.1	34.4	1.0	28	1.0	8.8	45.4
AL4TVS30AS	AL4TVS30CAS	ACKS	AYKS	33.3	36.8	1.0	30	1.0	8.3	48.4
AL4TVS33AS	AL4TVS33CAS	ACMS	AYMS	36.7	40.6	1.0	33	1.0	7.5	53.3
AL4TVS36AS	AL4TVS36CAS	ACPS	AYPS	40.0	44.4	1.0	36	1.0	6.9	58.1
AL4TVS40AS	AL4TVS40CAS	ACRS	AYRS	44.4	49.1	1.0	40	1.0	6.2	64.5
AL4TVS43AS	AL4TVS43CAS	ACTS	AYTS	47.8	52.8	1.0	43	1.0	5.8	69.4
AL4TVS45AS	AL4TVS45CAS	ACVS	AYVS	50.0	55.3	1.0	45	1.0	5.5	72.7
AL4TVS48AS	AL4TVS48CAS	ACXS	AYXS	53.3	58.9	1.0	48	1.0	5.2	77.4
AL4TVS51AS	AL4TVS51CAS	ACZS	AYZS	56.7	62.7	1.0	51	1.0	4.9	82.4
AL4TVS54AS	AL4TVS54CAS	ARES	AZES	60.0	66.3	1.0	54	1.0	4.6	87.1
AL4TVS58AS	AL4TVS58CAS	ARGS	AZGS	64.4	71.2	1.0	58	1.0	4.3	93.6
AL4TVS60AS	AL4TVS60CAS	ARKS	AZKS	66.7	73.7	1.0	60	1.0	4.1	96.8
AL4TVS64AS	AL4TVS64CAS	ARMS	AZMS	71.1	78.6	1.0	64	1.0	3.9	103

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

Part Number		Marking		Breakdown Voltage VBR (V)		Test Current I _T (mA)	Stand off Voltage V _{WM} (V)	Maximum reverse leakage at V _{WM} I _D (μA)	Maximum Peak Pulse Current I _{ppM} (A)	Maximum Clamping Voltage at I _{ppM} V _C (V)
				Min	Max					
AL4TVS70AS	AL4TVS70CAS	ARPS	AZPS	77.8	86.0	1.0	70	1.0	3.5	113
AL4TVS75AS	AL4TVS75CAS	ARRS	AZRS	83.3	92.1	1.0	75	1.0	3.3	121
AL4TVS78AS	AL4TVS78CAS	ARTS	AZTS	86.7	95.8	1.0	78	1.0	3.2	126
AL4TVS80AS	AL4TVS80CAS	ARVS	AZVS	88.8	97.6	1.0	80	1.0	3.1	129
AL4TVS85AS	AL4TVS85CAS	ARXS	AZXS	94.4	104	1.0	85	1.0	2.9	137
AL4TVS90AS	AL4TVS90CAS	ARZS	AZZS	100	111	1.0	90	1.0	2.7	146

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°C unless otherwise noted)

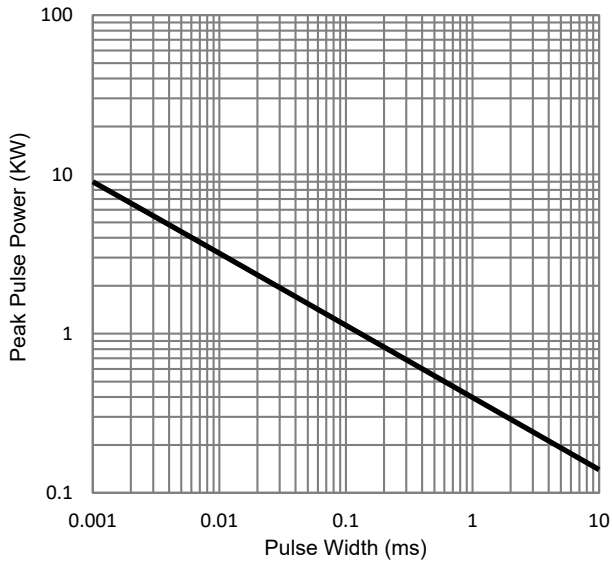


Fig.1 – Peak Pulse Power Derating Curve

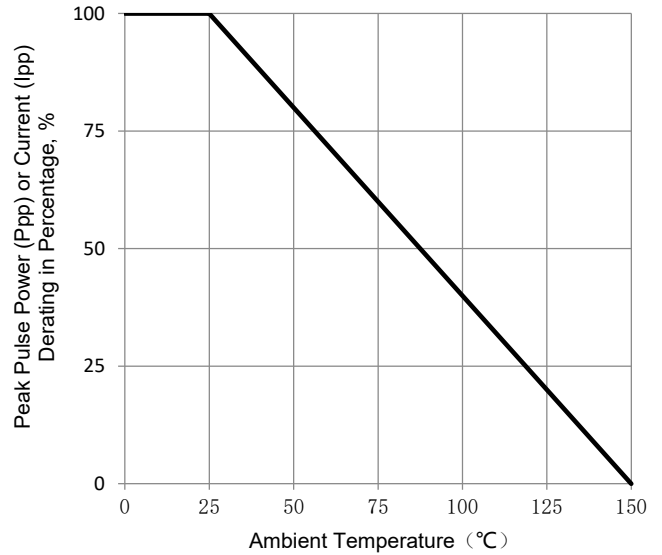


Fig.2 – Pulse Power vs Ambient Temperature

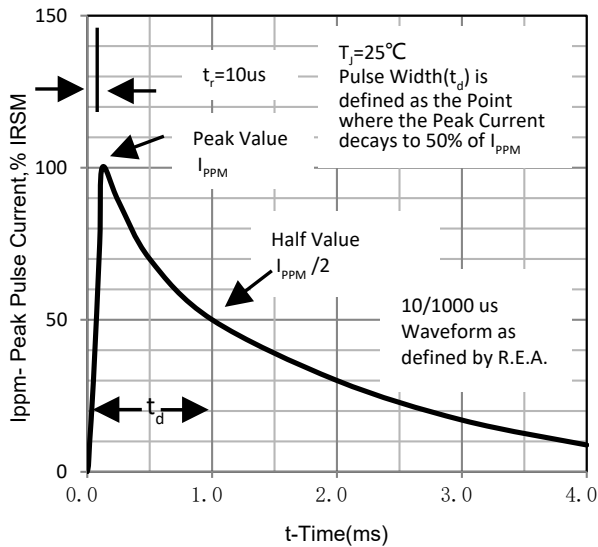


Fig.3 – Pulse Waveform

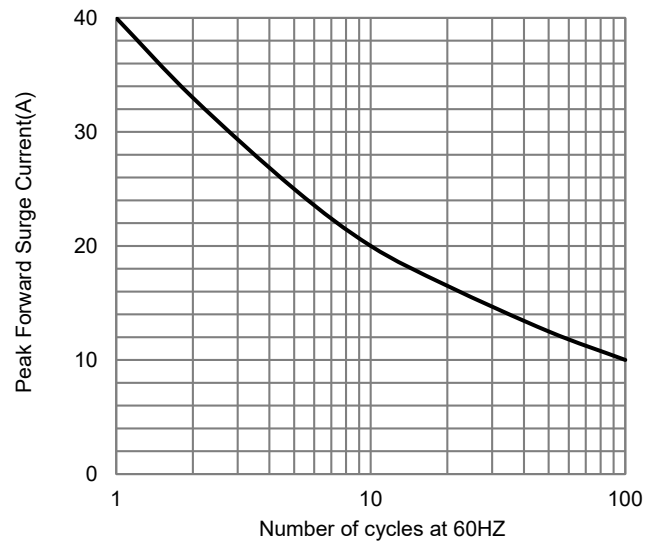
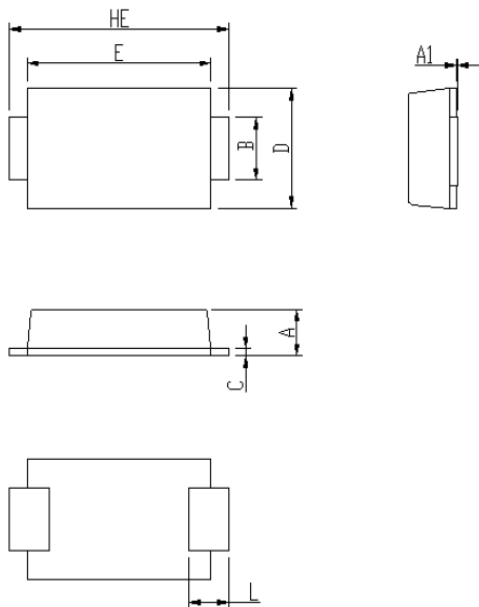


Fig.4 – Maximum Non-Repetitive Surge Current

Package Outline Dimensions

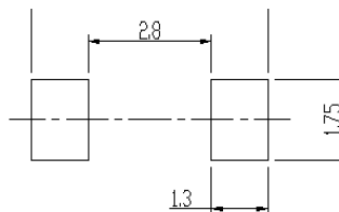
in inches (millimeters)

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



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