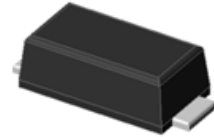


## 200W,10 - 190V Transient Voltage Suppressors

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



eSGA (SOD-123FL)

### 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	$P_{PPM}$	200	W
Peak pulse current with a 10/1000us waveform	$I_{PPM}$	See Next Table	A
Power dissipation, on infinite heat sink at $T_L=75^\circ\text{C}$	$P_D$	3.75	W
Peak forward surge current, 8.3ms single half-sine wave	$I_{FSM}$	30	A
Typical Thermal Resistance , Junction to Ambient	$R_{\theta JA}$	100	$^\circ\text{C/W}$
Typical Thermal Resistance , Junction to Case	$R_{\theta JC}$	20	$^\circ\text{C/W}$
Typical Thermal Resistance , Junction to Lead	$R_{\theta JL}$	20	$^\circ\text{C/W}$
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$



# AF2TVS10A thru AF2TVS190A

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					
AF2TVS10A	A210	11.1	12.3	1.0	10	5.0	11.8	17.0
AF2TVS11A	A211	12.2	13.5	1.0	11	5.0	11.0	18.2
AF2TVS12A	A212	13.3	14.7	1.0	12	5.0	10.1	19.9
AF2TVS13A	A213	14.4	15.9	1.0	13	5.0	9.30	21.5
AF2TVS14A	A214	15.6	17.2	1.0	14	5.0	8.62	23.2
AF2TVS15A	A215	16.7	18.5	1.0	15	5.0	8.20	24.4
AF2TVS16A	A216	17.8	19.7	1.0	16	5.0	7.69	26.0
AF2TVS17A	A217	18.9	20.9	1.0	17	5.0	7.25	27.6
AF2TVS18A	A218	20.0	22.1	1.0	18	5.0	6.85	29.2
AF2TVS20A	A220	22.2	24.5	1.0	20	5.0	6.17	32.4
AF2TVS22A	A222	24.4	26.9	1.0	22	5.0	5.63	35.5
AF2TVS24A	A224	26.7	29.5	1.0	24	5.0	5.14	38.9
AF2TVS26A	A226	28.9	31.9	1.0	26	5.0	4.75	42.1
AF2TVS28A	A228	31.1	34.4	1.0	28	5.0	4.41	45.4
AF2TVS30A	A230	33.3	36.8	1.0	30	5.0	4.13	48.4
AF2TVS33A	A233	36.7	40.6	1.0	33	5.0	3.75	53.3
AF2TVS36A	A236	40.0	44.4	1.0	36	5.0	3.44	58.1
AF2TVS40A	A240	44.4	49.1	1.0	40	5.0	3.10	64.5
AF2TVS43A	A243	47.8	52.8	1.0	43	5.0	2.88	69.4
AF2TVS45A	A245	50.0	55.3	1.0	45	5.0	2.75	72.7
AF2TVS48A	A248	53.3	58.9	1.0	48	5.0	2.58	77.4
AF2TVS51A	A251	56.7	62.7	1.0	51	5.0	2.43	82.4
AF2TVS54A	A254	60.0	66.3	1.0	54	5.0	2.30	87.1
AF2TVS58A	A258	64.4	71.2	1.0	58	5.0	2.14	93.6
AF2TVS60A	A260	66.7	73.7	1.0	60	5.0	2.07	96.8
AF2TVS64A	A264	71.1	78.6	1.0	64	5.0	1.94	103
AF2TVS70A	A270	77.8	86.0	1.0	70	5.0	1.77	113
AF2TVS75A	A275	83.3	92.1	1.0	75	5.0	1.65	121
AF2TVS78A	A278	86.7	95.8	1.0	78	5.0	1.59	126
AF2TVS80A	A280	88.8	97.6	1.0	80	5.0	1.55	129
AF2TVS85A	A285	94.4	104	1.0	85	5.0	1.46	137
AF2TVS90A	A290	100	111	1.0	90	5.0	1.37	146
AF2TVS100A	A100	111	123	1.0	100	5.0	1.23	162
AF2TVS110A	A110	122	135	1.0	110	5.0	1.13	177

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

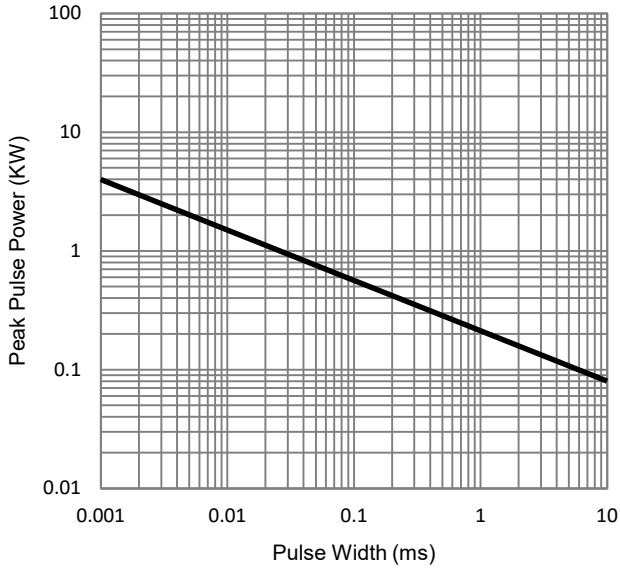
Part Number	Marking	Breakdown Voltage VBR (Volts)		Test Current I <sub>T</sub> (mA)	Stand off Voltage V <sub>WM</sub> (Volts)	Maximum reverse leakage at V <sub>WM</sub> I <sub>D</sub> (μA)	Maximum Peak Pulse Current I <sub>ppM</sub> (A)	Maximum Clamping Voltage at I <sub>ppM</sub> V <sub>C</sub> (Volts)
		Min	Max					
AF2TVS120A	A120	133	147	1.0	120	5.0	1.04	193
AF2TVS130A	A130	144	159	1.0	130	5.0	0.96	209
AF2TVS140A	A140	155	171	1.0	140	5.0	0.89	224
AF2TVS150A	A150	167	185	1.0	150	5.0	0.82	243
AF2TVS160A	A160	178	197	1.0	160	5.0	0.77	259
AF2TVS170A	A170	189	209	1.0	170	5.0	0.73	275
AF2TVS180A	A180	201	222	1.0	180	5.0	0.69	292
AF2TVS190A	A190	211	232	1.0	190	5.0	0.62	324

Note:

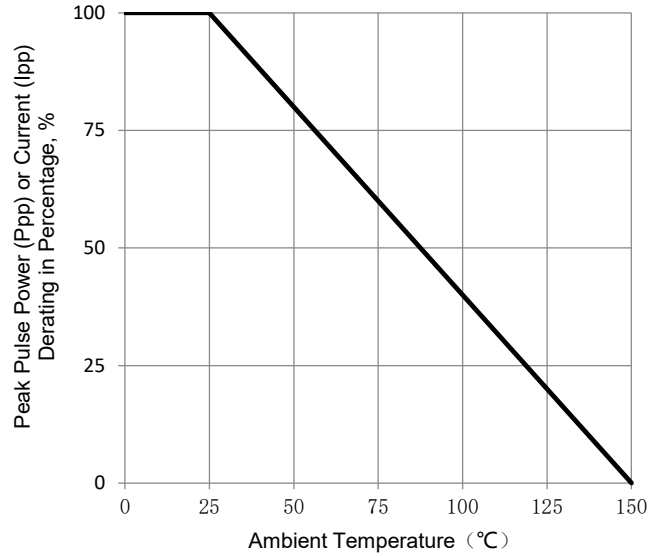
1. The thermal resistance from junction to ambient, case or lead, mounted on P.C.B with 5×5mm copper pads

## Ratings and Characteristics Curves

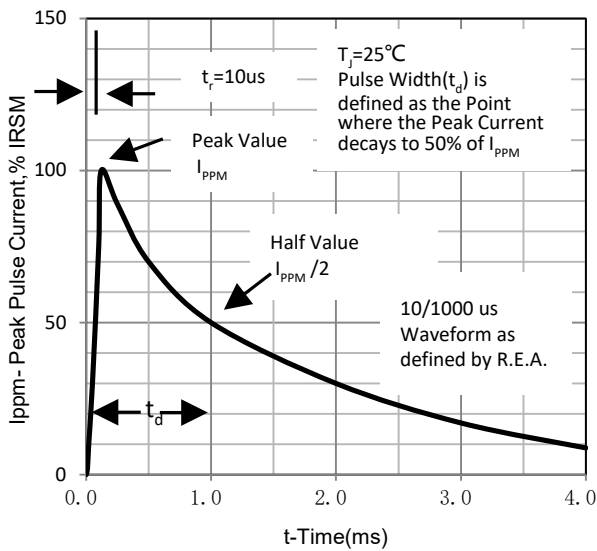
( $T_A = 25^\circ\text{C}$  unless otherwise noted)



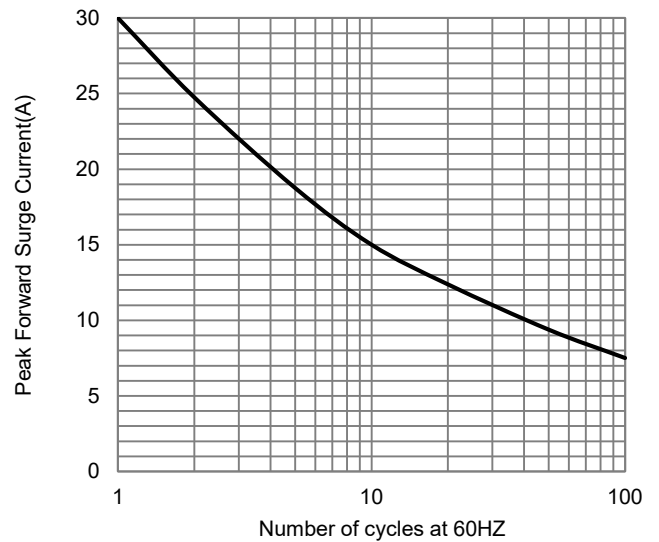
**Fig.1 - Peak Pulse Power Derating Curve**



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



**Fig.3 - Pulse Waveform**

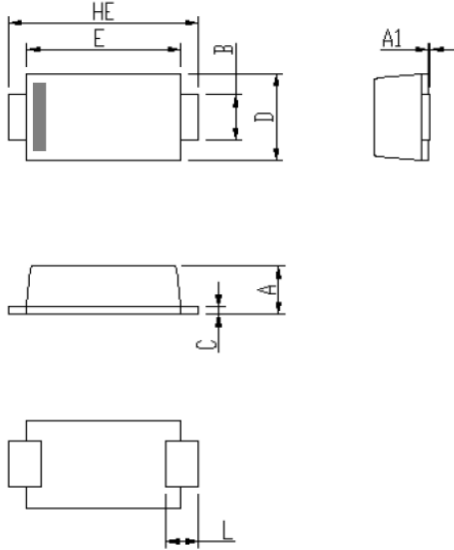


**Fig.4 - Maximum Non-Repetitive Surge Current**

## Package Outline Dimensions

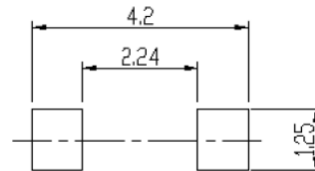
in inches (millimeters)

### eSGA (SOD-123FL)



DIM	Unit: mm		Unit: inch	
	MIN	MAX	MIN	MAX
A	0.9	1.08	0.035	0.043
A1	0	0.1	0.000	0.004
B	0.85	1.05	0.033	0.041
C	0.1	0.25	0.004	0.010
D	1.7	2	0.067	0.079
E	2.9	3.1	0.114	0.122
L	0.43	0.83	0.017	0.033
HE	3.5	3.9	0.138	0.154

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



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