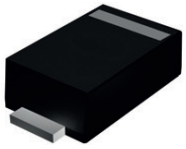
GOOD-ARK
SEMICONDUCTOR

F2TVS10A thru F2TVS190A

Surface Mount Transient Voltage Suppressors
Peak Pulse Power 200W Stand-off Voltage 10V to 190V

Features

- Glass passivated junction
- Excellent clamping capability and fast response time
- 200W peak pulse power capability with a 10/1000us waveform
- Moisture sensitivity: level 1, per J-STD-020
- Solder dip 260°C, 10s
- Low profile, typical thickness 1.0mm



SOD-123FL

Applications

For use in sensitive electronics protection against voltage transients induced by lightning or inductive load switching. Applications include protection of I/O interfaces, industrial, LED lighting, DC power buses and other vulnerable circuits.

RoHS COMPLIANT

Maximum Ratings and Thermal Characteristics

(T_A=25 °C unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Power Dissipation with a 10/1000us Waveform	P_{PPM}	200 Min	W
Peak Pulse Current with a 10/1000us Waveform	I_{PPM}	See Next Table	A
Steady State Power Dissipation on Infinite Heatsink at T_L=50°C	P_D	1	W
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave	I_{FSM}	30.0	A
Maximum Instantaneous Forward Voltage at 25A	V_F	3.5	V
Thermal Resistance Junction to Ambient Air[1]	$R_{\theta JA}$	100	°C/W
Thermal Resistance Junction to Lead	$R_{\theta JL}$	20	°C/W
Operating Junction Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Note:
1. Thermal resistance from junction to ambient, mounted on P.C.B with 5×5mm copper pads, 2 OZ, FR4 PCB

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Part Number	Reverse Stand-Off Voltage	Breakdown Voltage		Test Current	Reverse Leakage	Max. Clamp Voltage	Peak Pulse Current
	V_{RWM}	V_{BR} @ I_T		I_T	I_R @ V_{RWM}	V_C @ I_{PP}	I_{PP}
		Min	Max				
	V	V	V	mA	μA	V	A
F2TVS10A	10	11.1	12.3	1	5	17	11.8
F2TVS11A	11	12.2	13.5	1	5	18.2	11
F2TVS12A	12	13.3	14.7	1	5	19.9	10.1
F2TVS13A	13	14.4	15.9	1	5	21.5	9.3
F2TVS14A	14	15.6	17.2	1	5	23.2	8.62
F2TVS15A	15	16.7	18.5	1	5	24.4	8.2
F2TVS16A	16	17.8	19.7	1	5	26	7.69
F2TVS17A	17	18.9	20.9	1	5	27.6	7.25
F2TVS18A	18	20	22.1	1	5	29.2	6.85
F2TVS19A	19	21.1	23.3	1	5	30.6	6.54
F2TVS20A	20	22.2	24.5	1	5	32.4	6.17
F2TVS22A	22	24.4	26.9	1	5	35.5	5.63
F2TVS24A	24	26.7	29.5	1	5	38.9	5.14
F2TVS26A	26	28.9	31.9	1	5	42.1	4.75
F2TVS28A	28	31.1	34.4	1	5	45.4	4.41
F2TVS30A	30	33.3	36.8	1	5	48.4	4.13
F2TVS33A	33	36.7	40.6	1	5	53.3	3.75
F2TVS36A	36	40	44.2	1	5	58.1	3.44
F2TVS40A	40	44.4	49.1	1	5	64.5	3.1
F2TVS43A	43	47.8	52.8	1	5	69.4	2.88
F2TVS45A	45	50	55.3	1	5	72.7	2.75
F2TVS48A	48	53.3	58.9	1	5	77.4	2.58
F2TVS51A	51	56.7	62.7	1	5	82.4	2.43
F2TVS54A	54	60	66.3	1	5	87.1	2.3
F2TVS58A	58	64.4	71.2	1	5	93.6	2.14
F2TVS60A	60	66.7	73.7	1	5	96.8	2.07
F2TVS64A	64	71.1	78.6	1	5	103	1.94
F2TVS70A	70	77.8	86	1	5	113	1.77
F2TVS75A	75	83.3	92.1	1	5	121	1.65

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Part Number	Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage	Max. Clamp Voltage	Peak Pulse Current
	V_{RWM}	V_{BR} @ I_T		I_T	I_R @ V_{RWM}	V_C @ I_{PP}	I_{PP}
		Min	Max				
	V	V	V	mA	μA	V	A
F2TVS78A	78	86.7	95.8	1	5	126	1.59
F2TVS80A	80	88.8	97.6	1	5	129	1.55
F2TVS85A	85	94.4	104	1	5	137	1.46
F2TVS90A	90	100	111	1	5	146	1.37
F2TVS100A	100	111	123	1	5	162	1.23
F2TVS110A	110	122	135	1	5	177	1.13
F2TVS120A	120	133	147	1	5	193	1.04
F2TVS130A	130	144	159	1	5	209	0.96
F2TVS140A	140	155	171	1	5	224	0.89
F2TVS150A	150	167	185	1	5	243	0.82
F2TVS160A	160	178	197	1	5	259	0.77
F2TVS170A	170	189	209	1	5	275	0.73
F2TVS180A	180	201	222	1	5	292	0.69
F2TVS190A	190	211	232	1	5	324	0.62

Ratings and Characteristics Curves (T_A=25 °C unless otherwise noted)

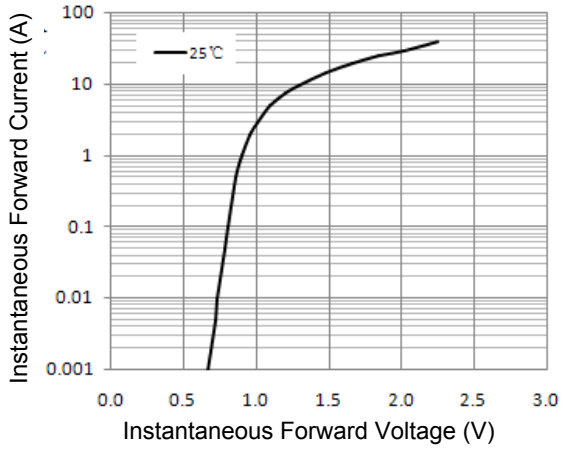

Figure 1. Typical Instantaneous Forward Characteristics

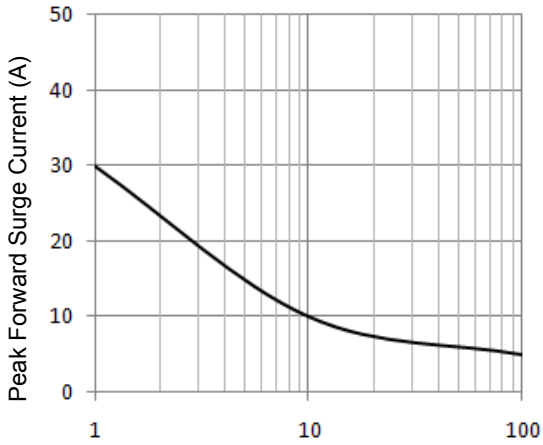

Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

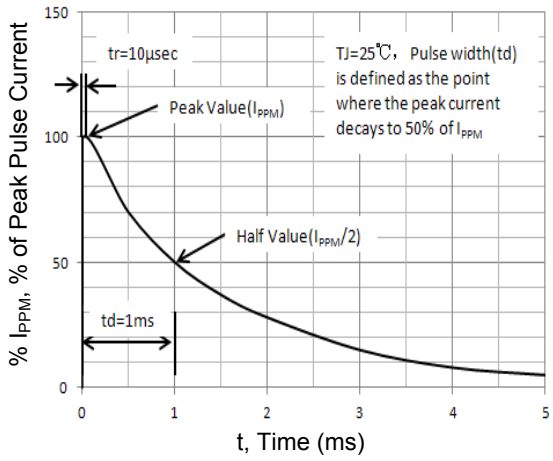

Figure 3. Pulse Waveform

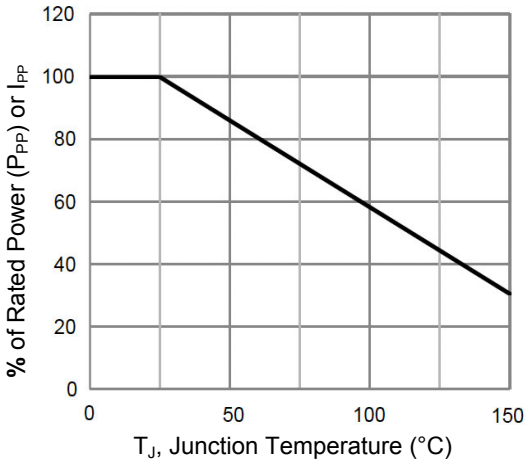

Figure 4. Pulse Power or Current vs. Initial Junction Temperature

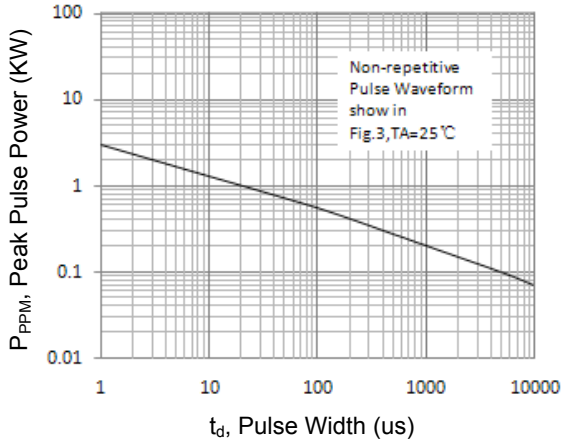

Figure 5. Peak Pulse Power Vs. Pulse Width

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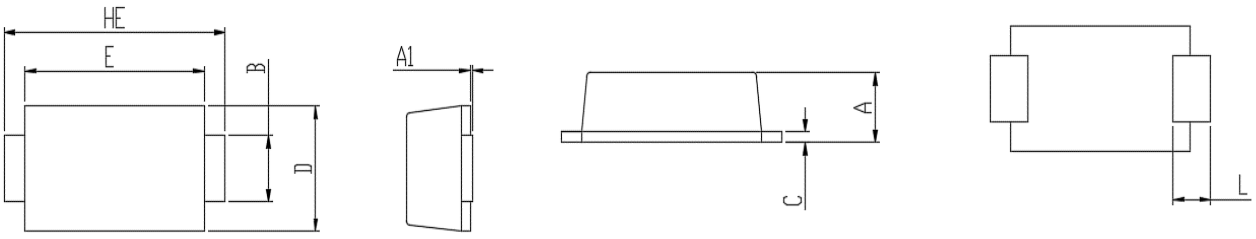
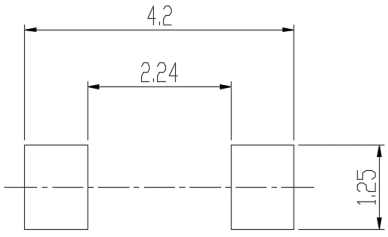
Package Outline Dimensions (SOD-123)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.080	0.035	0.043
A1	0.000	0.100	0.000	0.004
B	0.850	1.050	0.033	0.041
C	0.100	0.250	0.004	0.010
D	1.700	2.000	0.067	0.079
E	2.900	3.100	0.114	0.122
L	0.430	0.830	0.017	0.033
HE	3.500	3.900	0.138	0.154

Recommended Pad Layout



unit: mm