

## SuperTVS –200W Transient Voltage Suppressor

### 1. Features

- IEC61000-4-2 ESD 30KV Air,30KV contact compliance
- SOD-123F surface mount package
- Protects one I/O line
- Peak power dissipation of 1000W under 8/20 waveform
- Low leakage current
- Working voltage: 5V~220V
- Solid-state silicon avalanche technology
- Lead Free/RoHS compliant.
- Solder reflow temperature: Pure Tin-Sn,260-270°C

### 2. Application

- Personal digital assistants (PDA)
- Cellular handsets & Accessories
- Portable devices
- Portable instrumentation
- Handhelds and notebooks
- Digital cameras

### 3. Maximum Ratings

Ratings at 25° ambient temperature unless otherwise specified

Rating	Symbol	Value	Units
Peak pulse power dissipation at 10/1000us waveform	P <sub>PP</sub>	200	W
Peak pulse current of at 10/1000us waveform	I <sub>PPM</sub>	See Table	A
Steady state power dissipation at TA=50°C	P <sub>M(AV)</sub>	1.0	W
Peak pulse power at 8/20us waveform	P <sub>PP</sub>	1000	W
ESD voltage (Contact discharge)	V <sub>ESD</sub>	±30	kV
ESD voltage (Air discharge)		±30	
Storage & operating temperature range	T <sub>STG</sub> ,T <sub>J</sub>	-65 to 150	°C

**SMF SERIES**

Rev-1.1

**4. Electrical Characteristics (TA=25°C)**

Part Number	Part Number	Marking		Reverse Stand off Voltage $V_R$ (Volts)	Breakdown Voltage $V_{BR}$ (Volts) @ $I_T$		Test Current $I_T$ (mA)	Maximum Clamping Voltage $V_C$ @ $I_{PP}$ (V)	Maximum Peak Pulse Current $I_{PP}$ (A)	Maximum Reverse Leakage $I_R$ @ $V_R$ ( $\mu$ A)	ROHS2.0
					MIN	MAX					
SMF5.0A	SMF5.0CA	AE	WE	5	6.4	7	10	9.2	21.7	200	y
SMF6.0A	SMF6.0CA	AG	WG	6	6.67	7.37	10	10.3	19.4	200	y
SMF6.5A	SMF6.5CA	AK	WK	6.5	7.22	7.98	10	11.2	17.9	150	y
SMF7.0A	SMF7.0CA	AM	WM	7	7.78	8.6	10	12	16.7	75	y
SMF7.5A	SMF7.5CA	AP	WP	7.5	8.33	9.21	1	12.9	15.5	50	y
SMF8.0A	SMF8.0CA	AR	WR	8	8.89	9.83	1	13.6	14.7	25	y
SMF8.5A	SMF8.5CA	AT	WT	8.5	9.44	10.4	1	14.4	13.9	20	y
SMF9.0A	SMF9.0CA	AV	WV	9	10	11.1	1	15.4	13	10	y
SMF10A	SMF10CA	AX	WX	10	11.1	12.3	1	17	11.8	5	y
SMF11A	SMF11CA	AZ	WZ	11	12.2	13.5	1	18.2	11	1	y
SMF12A	SMF12CA	BE	XE	12	13.3	14.7	1	19.9	10.1	1	y
SMF13A	SMF13CA	BG	XG	13	14.4	15.9	1	21.5	9.3	1	y
SMF14A	SMF14CA	BK	XK	14	15.6	17.2	1	23.2	8.62	1	y
SMF15A	SMF15CA	BM	XM	15	16.7	18.5	1	24.4	8.2	1	y
SMF16A	SMF16CA	BP	XP	16	17.8	19.7	1	26	7.69	1	y
SMF17A	SMF17CA	BR	XR	17	18.9	20.9	1	27.6	7.25	1	y
SMF18A	SMF18CA	BT	XT	18	20	22.1	1	29.2	6.85	1	y
SMF20A	SMF20CA	BV	XV	20	22.2	24.5	1	32.4	6.17	1	y
SMF22A	SMF22CA	BX	XX	22	24.4	26.9	1	35.5	5.63	1	y
SMF24A	SMF24CA	BZ	XZ	24	26.7	29.5	1	38.9	5.14	1	y
SMF26A	SMF26CA	CE	YE	26	28.9	31.9	1	42.1	4.75	1	y
SMF28A	SMF28CA	CG	YG	28	31.1	34.4	1	45.4	4.41	1	y
SMF30A	SMF30CA	CK	YK	30	33.3	36.8	1	48.4	4.13	1	y
SMF33A	SMF33CA	CM	YM	33	36.7	40.6	1	53.3	3.75	1	y
SMF36A	SMF36CA	CP	YP	36	40	44.2	1	58.1	3.44	1	y
SMF40A	SMF40CA	CR	YR	40	44.4	49.1	1	64.5	3.1	1	y
SMF43A	SMF43CA	CT	YT	43	47.8	52.8	1	69.4	2.88	1	y
SMF45A	SMF45CA	CV	YV	45	50	55.3	1	72.7	2.75	1	y
SMF48A	SMF48CA	CX	YX	48	53.3	58.9	1	77.4	2.58	1	y
SMF51A	SMF51CA	CZ	YZ	51	56.7	62.7	1	82.4	2.43	1	y

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Rev-1.1

Part Number	Part Number	Marking		Reverse Stand off Voltage $V_R$ (Volts)	Breakdown Voltage $V_{BR}$ (Volts) @ $I_R$		Test Current $I_R$ (mA)	Maximum Clamping Voltage $V_C$ @ $I_{PP}$ (V)	Maximum Peak Pulse Current $I_{PP}$ (A)	Maximum Reverse Leakage $I_R$ @ $V_R$ ( $\mu$ A)	ROHS2.0
					MIN	MAX					
Uni	Bi	Uni	Bi								
SMF54A	SMF54CA	RE	ZE	54	60	66.3	1	87.1	2.3	1	y
SMF58A	SMF58CA	RG	ZG	58	64.4	71.2	1	93.6	2.14	1	y
SMF60A	SMF60CA	RK	ZK	60	66.7	73.7	1	96.8	2.07	1	y
SMF64A	SMF64CA	RM	ZM	64	71.1	78.6	1	103	1.94	1	y
SMF70A	SMF70CA	RP	ZP	70	77.8	86	1	113	1.77	1	y
SMF75A	SMF75CA	RR	ZR	75	83.3	92.1	1	121	1.65	1	y
SMF78A	SMF78CA	RT	ZT	78	86.7	95.8	1	126	1.59	1	y
SMF85A	SMF85CA	RV	ZV	85	94.4	104	1	137	1.46	1	y
SMF90A	SMF90CA	RX	ZX	90	100	111	1	146	1.37	1	y
SMF100A	SMF100CA	RZ	ZZ	100	111	123	1	162	1.23	1	y
SMF110A	SMF110CA	SE	VE	110	122	135	1	177	1.13	1	y
SMF120A	SMF120CA	SG	VG	120	133	147	1	193	1.04	1	y
SMF130A	SMF130CA	SK	VK	130	144	159	1	209	0.96	1	y
SMF150A	SMF150CA	SM	VM	150	167	185	1	243	0.82	1	y
SMF160A	SMF160CA	SP	VP	160	178	197	1	259	0.77	1	y
SMF170A	SMF170CA	SR	VR	170	189	209	1	275	0.73	1	y

Notes: For bi-directional type having  $V_R$  of 10 volts and less, the  $I_R$  limit is double.

5. Ratings and Characteristic Curves (TA =25°C unless otherwise noted)

Figure 1. Peak Pulse Power Rating Curve

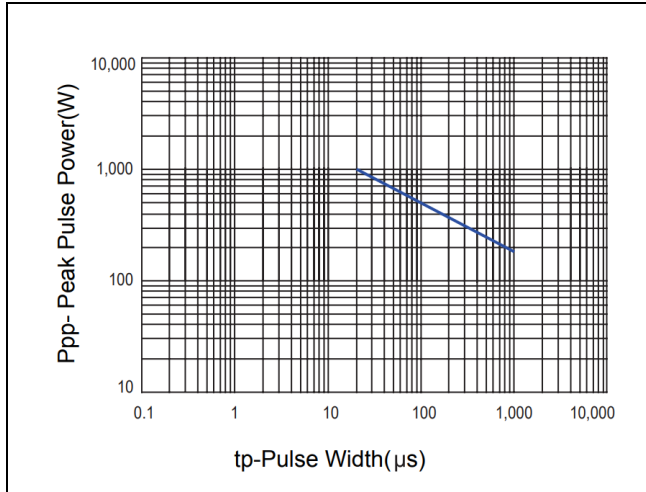


Figure 2. 10/1000 us Pulse Waveform

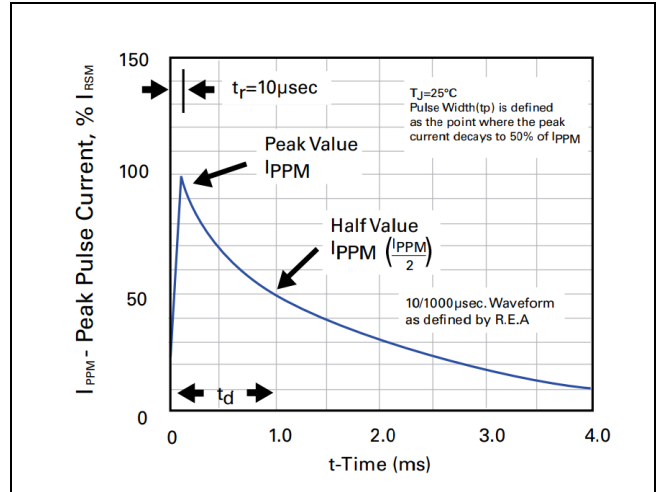


Figure 3. Capacitance vs. Reverse Voltage

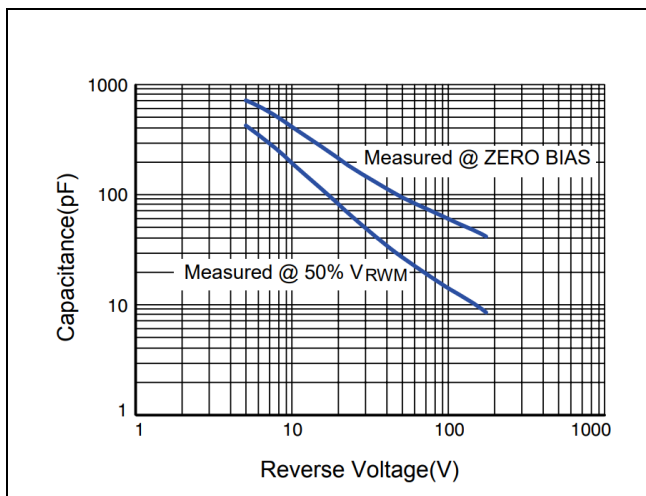
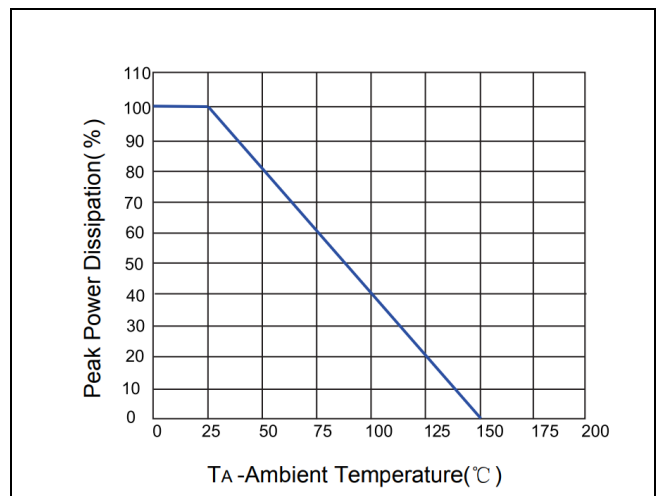
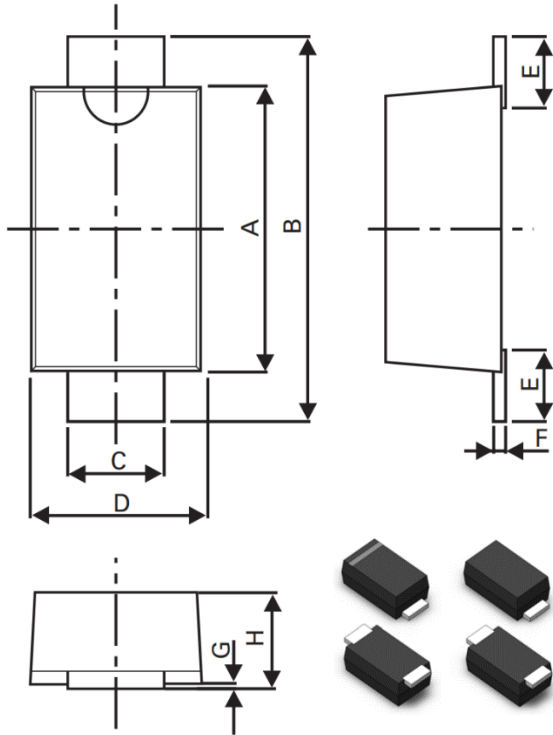


Figure 4. Power Derating curve



6. Dimension (SOD-123F)



Dimensions	Millimeters		Inches	
	Min	Max	Min	Max
A	2.5	3.05	0.0984	0.1201
B	3.35	4.05	0.1319	0.1594
C	0.7	1.2	0.0275	0.0472
D	1.5	2	0.0591	0.0787
E	0.35	0.95	0.0138	0.0374
F	0.05	0.26	0.002	0.0102
G	0	0.2	0	0.0079
H	0.70	1.35	0.0276	0.0531

7. Packaging

Part number	Component Package	Quantity	Packaging Option	Packaging Specification
SMFXXX	SOD-123F	3000	Tape & Reel – 8mm tape/7" reel	EIA RS-481

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