

SuperTVS –200W Transient Voltage Suppressor

1. Features

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

2. Application

- Personal digital assistants (PDA)
- Portable instrumentation
- Cellular handsets & Accessories
- Handhelds and notebooks
- Portable devices
- 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 _{PP}	200	W
Peak pulse current of at 10/1000us waveform	I _{PPM}	See Table	A
Steady state power dissipation at TA=50°C	P _{M(AV)}	1.0	W
Peak pulse power at 8/20us waveform	P _{PP}	1000	W
ESD voltage (Contact discharge)	V _{ESD}	±30	kV
ESD voltage (Air discharge)		±30	
Storage & operating temperature range	T _{STG} ,T _J	-65 to 150	°C

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 (μ 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

SMF SERIES

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 (μ 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

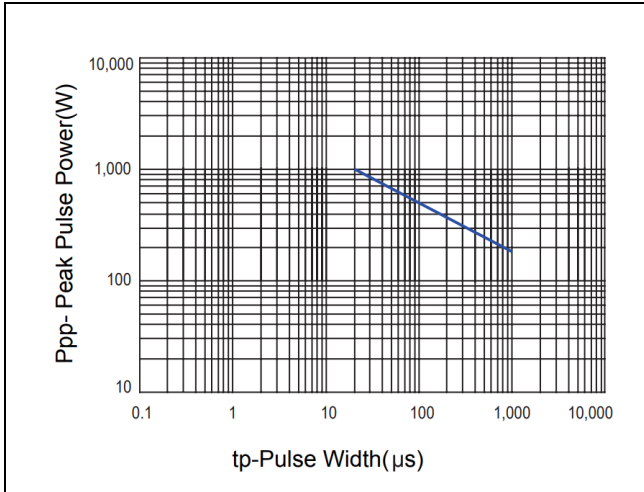


Figure 2. 10/1000 us Pulse Waveform

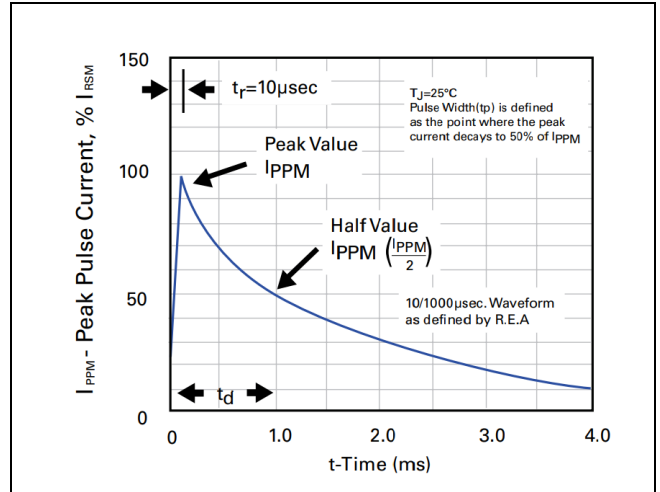


Figure 3. Capacitance vs. Reverse Voltage

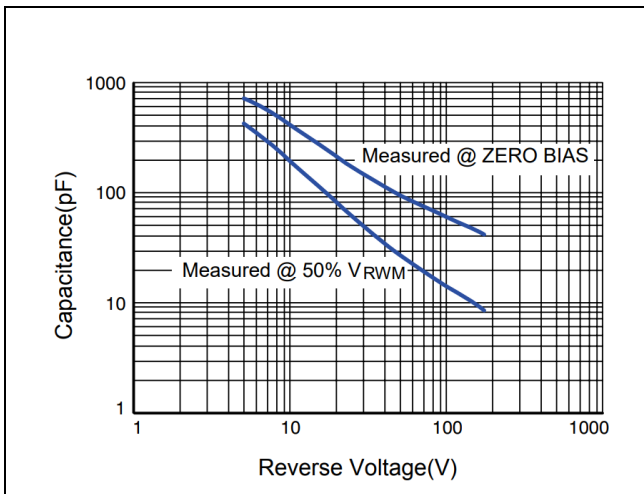
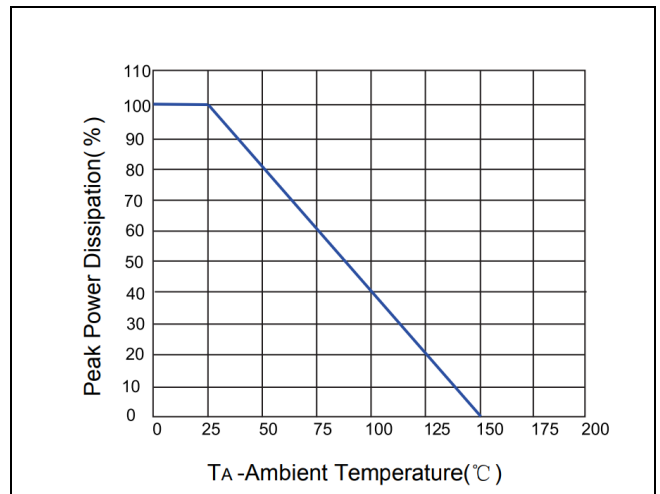
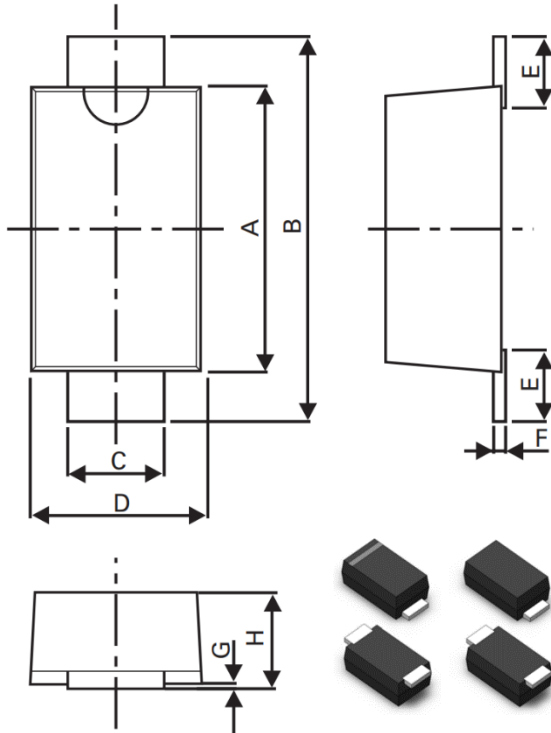


Figure 4. Power Derating curve



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

DISCLAIMER

ELECSUPER SUPERTVS PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, SAFETY INFORMATION, AND OTHER RESOURCES "AS IS" AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with ElecSuper products. You are solely responsible for

- (1) selecting the appropriate ElecSuper products for your application;
- (2) designing, validating and testing your application;
- (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements.

These resources are subject to change without notice. ElecSuper grants you permission to use these resources only for development of an application that uses the ElecSuper products described in the resource. Other reproduction and display of these resources are prohibited. No license is granted to any other ElecSuper intellectual property right or to any third party intellectual property right. ElecSuper disclaims responsibility for, and you will fully indemnify ElecSuper and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources. ElecSuper's products are provided subject to ElecSuper's Terms of Sale or other applicable terms available either on www.elecsuper.com or provided in conjunction with such ElecSuper products. ElecSuper's provision of these resources does not expand or otherwise alter ElecSuper's applicable warranties or warranty disclaimers for ElecSuper products.