SMF5.0(C)A THRU SMF170(C)A

200W Surface Mount Unidirectional and Bidirectional Transient Voltage Suppressors Diodes- 5.0V- 170V

Features

- For surface mounted applications in order to optimize board space.
- Low profile package.
- Excellent clamping capability.
- IEC61000-4-2 ESD 15kV Air,8kV contact compliance
- Protects one I/O line
- Lead-free parts meet RoHS requirments.
- Meet HF requirments.
- Compliant to Halogen-free

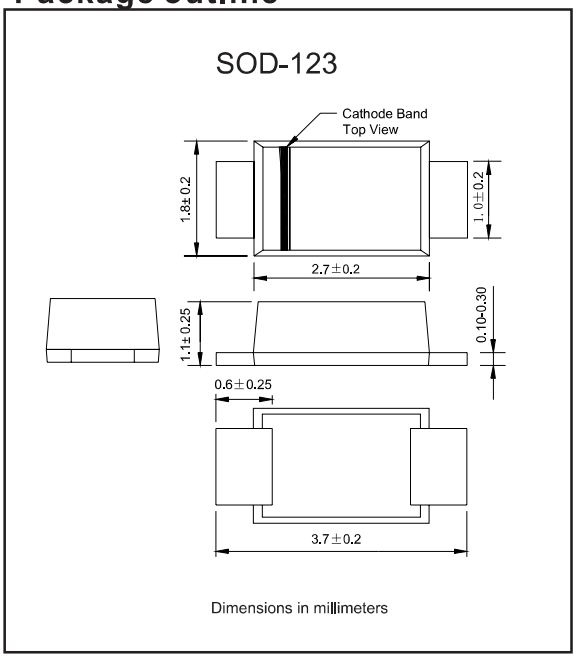
Applications

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

Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : Molded plastic, SOD-123
- Terminals :Plated terminals, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any

Package outline



Maximum ratings and Electrical Characteristics (AT T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	Value	UNIT
Peak Power Dissipation	Peak Pulse Power Dissipation at TA=25°C by 10x1000us (Note 1)	P_{PPM}	200	W
Operating junction temperature range		T_J	-55 to +150	°C
Storage temperature range		T_{STG}	-55 to +150	°C

Note: 1. Non-repetitive current pulse, per Fig. 2 and derated above TA=25°C per Fig. 1

Electrical characteristics (at T =25°C unless otherwise noted)

Part Number Add C For Bi-Directional (Note 4)	Reverse Standoff Voltage	Breakdown Voltage V_{BR} @ I_T (Note 5)		Test Current	Max. Reverse Leakage @ V_{RWM} (Note 6)	Max. Clamping Voltage @ I_{pp}	Max. Peak Pulse Current I_{pp}	Marking Code	
	V_{RWM} (V)	Min (V)	Max (V)	I_T (mA)	I_R (μA)	V_C (V)	(A)	BI-	UNI-
SMF5.0(C)A	5.0	6.40	7.25	10	100	9.2	21.7	TE	KE
SMF6.0(C)A	6.0	6.67	7.37	10	100	10.3	19.4	TG	KG
SMF6.5(C)A	6.5	7.22	7.98	10	30	11.2	17.9	TK	KK
SMF7.0(C)A	7.0	7.78	8.60	10	10	12.0	16.7	TM	KM
SMF7.5(C)A	7.5	8.33	9.21	1.0	5.0	12.9	15.5	TP	KP
SMF8.0(C)A	8.0	8.89	9.83	1.0	2.0	13.6	14.7	TR	KR
SMF8.5(C)A	8.5	9.44	10.4	1.0	2.0	14.4	13.9	TT	KT
SMF9.0(C)A	9.0	10.0	11.1	1.0	2.0	15.4	13.0	TV	KV
SMF10(C)A	10	11.1	12.3	1.0	1.0	17.0	11.8	TX	KX
SMF11(C)A	11	12.2	13.5	1.0	1.0	18.2	11.0	TZ	KZ
SMF12(C)A	12	13.3	14.7	1.0	1.0	19.9	10.1	UE	LE
SMF13(C)A	13	14.4	15.9	1.0	1.0	21.5	9.3	UG	LG
SMF14(C)A	14	15.6	17.2	1.0	1.0	23.2	8.6	UK	LK
SMF15(C)A	15	16.7	18.5	1.0	1.0	24.4	8.2	UM	LM
SMF16(C)A	16	17.8	19.7	1.0	1.0	26.0	7.7	UP	LP
SMF17(C)A	17	18.9	20.9	1.0	1.0	27.6	7.2	UR	LR
SMF18(C)A	18	20.0	22.1	1.0	1.0	29.2	6.8	UT	LT
SMF20(C)A	20	22.2	24.5	1.0	1.0	32.4	6.2	UV	LV
SMF22(C)A	22	24.4	26.9	1.0	1.0	35.5	5.6	UX	LX
SMF24(C)A	24	26.7	29.5	1.0	1.0	38.9	5.1	UZ	LZ
SMF26(C)A	26	28.9	31.9	1.0	1.0	42.1	4.8	VE	ME
SMF28(C)A	28	31.1	34.4	1.0	1.0	45.4	4.4	VG	MG
SMF30(C)A	30	33.3	36.8	1.0	1.0	48.4	4.2	VK	MK
SMF33(C)A	33	36.7	40.6	1.0	1.0	53.3	3.8	VM	MM
SMF36(C)A	36	40.0	44.2	1.0	1.0	58.1	3.5	VP	MP
SMF40(C)A	40	44.4	49.1	1.0	1.0	64.5	3.1	VR	MR
SMF43(C)A	43	47.8	52.8	1.0	1.0	69.4	2.9	VT	MT
SMF45(C)A	45	50.0	55.3	1.0	1.0	72.7	2.8	VV	MV
SMF48(C)A	48	53.3	58.9	1.0	1.0	77.4	2.6	VX	MX
SMF51(C)A	51	56.7	62.7	1.0	1.0	82.4	2.5	VZ	MZ
SMF54(C)A	54	60.0	66.3	1.0	1.0	87.1	2.3	WE	NE
SMF58(C)A	58	64.4	71.2	1.0	1.0	93.6	2.3	WG	NG
SMF60(C)A	60	66.7	73.7	1.0	1.0	96.8	2.1	WK	NK
SMF64(C)A	64	71.1	78.6	1.0	1.0	103	2.0	WM	NM
SMF70(C)A	70	77.8	86.0	1.0	1.0	113	1.8	WP	NP
SMF75(C)A	75	83.3	92.1	1.0	1.0	121	1.7	WR	NR
SMF78(C)A	78	86.7	95.8	1.0	1.0	126	1.6	WT	NT
SMF85(C)A	85	94.4	104	1.0	1.0	137	1.5	WV	NV
SMF90(C)A	90	100	111	1.0	1.0	146	1.4	WX	NX
SMF100(C)A	100	111	123	1.0	1.0	162	1.3	WZ	NZ
SMF110(C)A	110	122	135	1.0	1.0	177	1.2	XE	PE
SMF120(C)A	120	133	147	1.0	1.0	193	1.1	XG	PG
SMF130(C)A	130	144	159	1.0	1.0	209	1.0	XK	PK
SMF150(C)A	150	167	185	1.0	1.0	243	0.8	XM	PM
SMF160(C)A	160	178	197	1.0	1.0	259	0.8	XP	PP
SMF170(C)A	170	189	209	1.0	1.0	275	0.8	XR	PR

Notes:
4. Suffix C denotes Bi-directional device.
5. V_{BR} measured with I_T current pulse = 300μs
6. For Bi-Directional devices having V_{RWM} of 10V and under, the I_R is doubled.

Rating and characteristic curves (SMF SERIES)

FIG.1 - PULSE DERATING CURVE

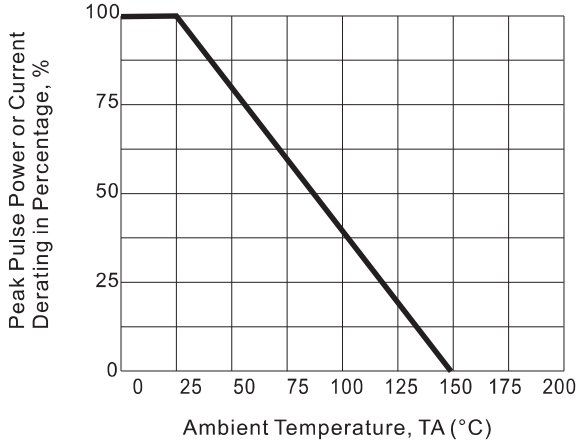


FIG.2 - 10X1000us PULSE WAVEFORM

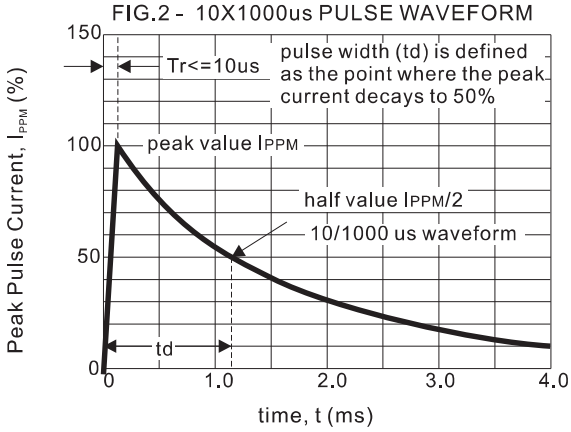


FIG.3 - 8X20us PULSE WAVEFORM

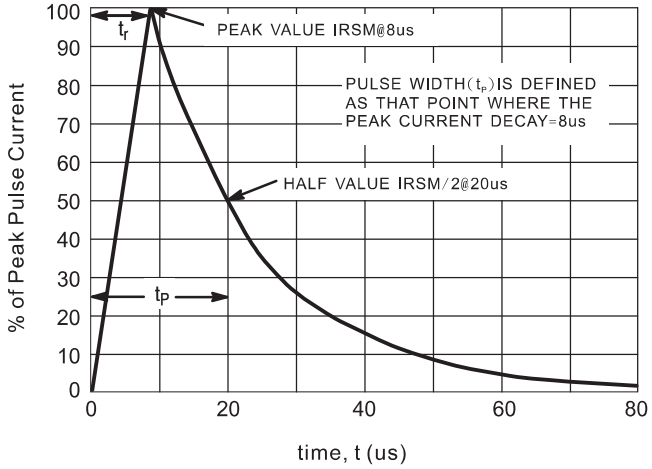


FIG.4 - PEALK PULSE POWER RATING CURVE

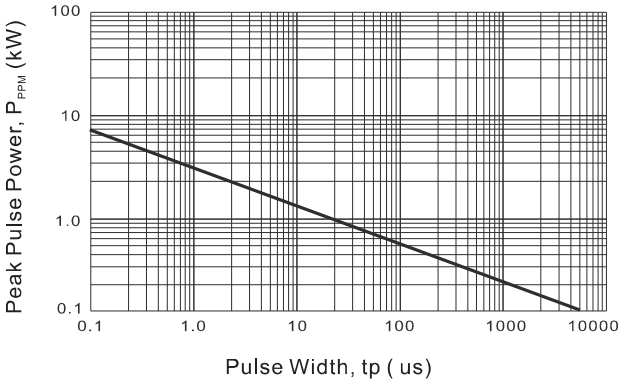
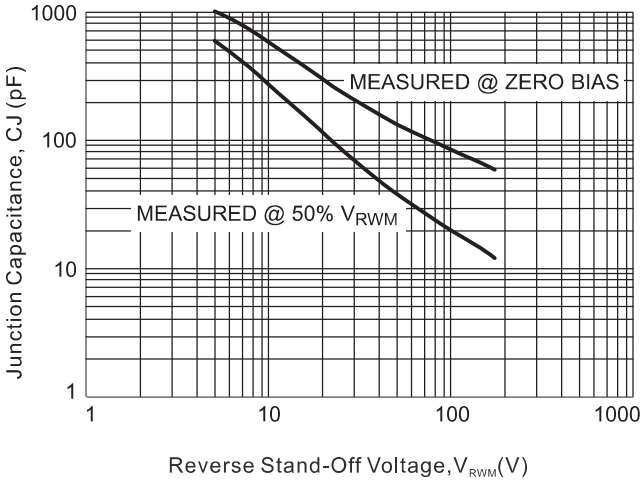
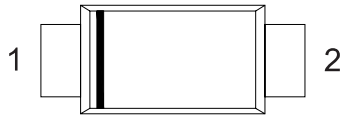


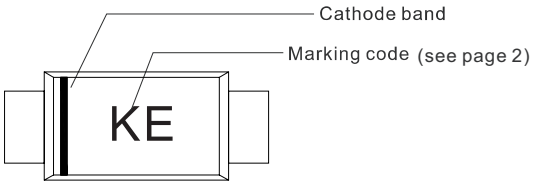
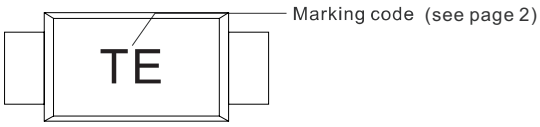
FIG.5 - TYPICAL JUNCTION CAPACITANCE



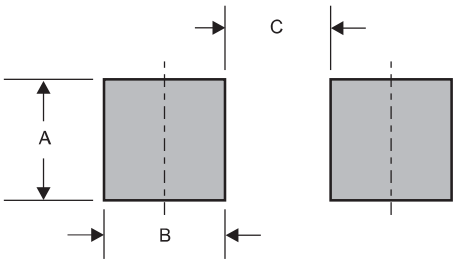
Pinning information

Pin	Simplified outline	Symbol
Uni-Directional Pin1 cathode Pin2 anode		
Bi-Directional		

Marking

Type number	Example
Uni-Directional	
Bi-Directional	

Suggested solder pad layout



Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SOD-123	0.044 (1.10)	0.040 (1.00)	0.079 (2.00)