

Features

- For surface mounted applications in order to optimize board space.
- Low profile package.
- Excellent clamping capability.
- IEC61000-4-2 ESD 30kV Air,30kV contact compliance
- Protects one I/O line
- Lead-free parts meet RoHS requirements.
- Meet HF requirements.
- Compliant to Halogen-free
- Suffix "-Q1" for AEC-Q101.

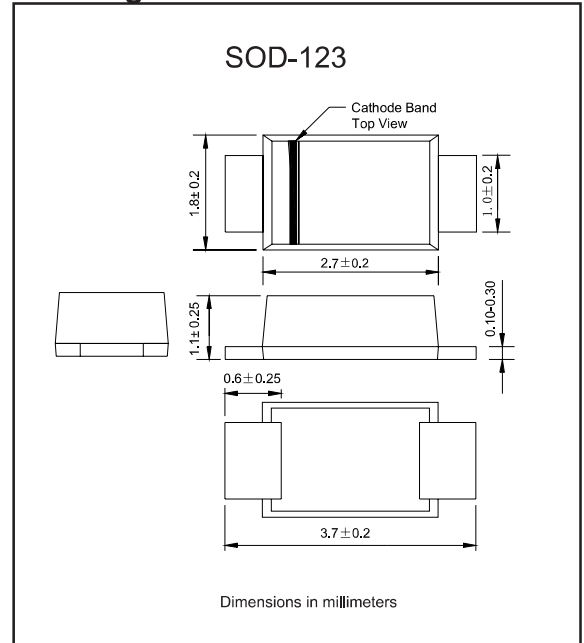
Applications

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

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

Note: 1. Non-repetitive current pulse, per Fig. 2 and derated above $T_A=25^\circ\text{C}$ 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-Q1	5.0	6.40	7.25	10	100	9.2	21.7	TE	KE
SMF6.0(C)A-Q1	6.0	6.67	7.37	10	100	10.3	19.4	TG	KG
SMF6.5(C)A-Q1	6.5	7.22	7.98	10	30	11.2	17.9	TK	KK
SMF7.0(C)A-Q1	7.0	7.78	8.60	10	10	12.0	16.7	TM	KM
SMF7.5(C)A-Q1	7.5	8.33	9.21	1.0	5.0	12.9	15.5	TP	KP
SMF8.0(C)A-Q1	8.0	8.89	9.83	1.0	2.0	13.6	14.7	TR	KR
SMF8.5(C)A-Q1	8.5	9.44	10.4	1.0	2.0	14.4	13.9	TT	KT
SMF9.0(C)A-Q1	9.0	10.0	11.1	1.0	2.0	15.4	13.0	TV	KV
SMF10(C)A-Q1	10	11.1	12.3	1.0	1.0	17.0	11.8	TX	KX
SMF11(C)A-Q1	11	12.2	13.5	1.0	1.0	18.2	11.0	TZ	KZ
SMF12(C)A-Q1	12	13.3	14.7	1.0	1.0	19.9	10.1	UE	LE
SMF13(C)A-Q1	13	14.4	15.9	1.0	1.0	21.5	9.3	UG	LG
SMF14(C)A-Q1	14	15.6	17.2	1.0	1.0	23.2	8.6	UK	LK
SMF15(C)A-Q1	15	16.7	18.5	1.0	1.0	24.4	8.2	UM	LM
SMF16(C)A-Q1	16	17.8	19.7	1.0	1.0	26.0	7.7	UP	LP
SMF17(C)A-Q1	17	18.9	20.9	1.0	1.0	27.6	7.2	UR	LR
SMF18(C)A-Q1	18	20.0	22.1	1.0	1.0	29.2	6.8	UT	LT
SMF20(C)A-Q1	20	22.2	24.5	1.0	1.0	32.4	6.2	UV	LV
SMF22(C)A-Q1	22	24.4	26.9	1.0	1.0	35.5	5.6	UX	LX
SMF24(C)A-Q1	24	26.7	29.5	1.0	1.0	38.9	5.1	UZ	LZ
SMF26(C)A-Q1	26	28.9	31.9	1.0	1.0	42.1	4.8	VE	ME
SMF28(C)A-Q1	28	31.1	34.4	1.0	1.0	45.4	4.4	VG	MG
SMF30(C)A-Q1	30	33.3	36.8	1.0	1.0	48.4	4.2	VK	MK
SMF33(C)A-Q1	33	36.7	40.6	1.0	1.0	53.3	3.8	VM	MM
SMF36(C)A-Q1	36	40.0	44.2	1.0	1.0	58.1	3.5	VP	MP
SMF40(C)A-Q1	40	44.4	49.1	1.0	1.0	64.5	3.1	VR	MR
SMF43(C)A-Q1	43	47.8	52.8	1.0	1.0	69.4	2.9	VT	MT
SMF45(C)A-Q1	45	50.0	55.3	1.0	1.0	72.7	2.8	VV	MV
SMF48(C)A-Q1	48	53.3	58.9	1.0	1.0	77.4	2.6	VX	MX
SMF51(C)A-Q1	51	56.7	62.7	1.0	1.0	82.4	2.5	VZ	MZ
SMF54(C)A-Q1	54	60.0	66.3	1.0	1.0	87.1	2.3	WE	NE
SMF58(C)A-Q1	58	64.4	71.2	1.0	1.0	93.6	2.3	WG	NG
SMF60(C)A-Q1	60	66.7	73.7	1.0	1.0	96.8	2.1	WK	NK
SMF64(C)A-Q1	64	71.1	78.6	1.0	1.0	103	2.0	WM	NM
SMF70(C)A-Q1	70	77.8	86.0	1.0	1.0	113	1.8	WP	NP
SMF75(C)A-Q1	75	83.3	92.1	1.0	1.0	121	1.7	WR	NR
SMF78(C)A-Q1	78	86.7	95.8	1.0	1.0	126	1.6	WT	NT
SMF85(C)A-Q1	85	94.4	104	1.0	1.0	137	1.5	WV	NV
SMF90(C)A-Q1	90	100	111	1.0	1.0	146	1.4	WX	NX
SMF100(C)A-Q1	100	111	123	1.0	1.0	162	1.3	WZ	NZ
SMF110(C)A-Q1	110	122	135	1.0	1.0	177	1.2	XE	PE
SMF120(C)A-Q1	120	133	147	1.0	1.0	193	1.1	XG	PG
SMF130(C)A-Q1	130	144	159	1.0	1.0	209	1.0	XK	PK
SMF150(C)A-Q1	150	167	185	1.0	1.0	243	0.8	XM	PM
SMF160(C)A-Q1	160	178	197	1.0	1.0	259	0.8	XP	PP
SMF170(C)A-Q1	170	189	209	1.0	1.0	275	0.8	XR	PR

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

Rating and characteristic curves

FIG.1 - PULSE DERATING CURVE

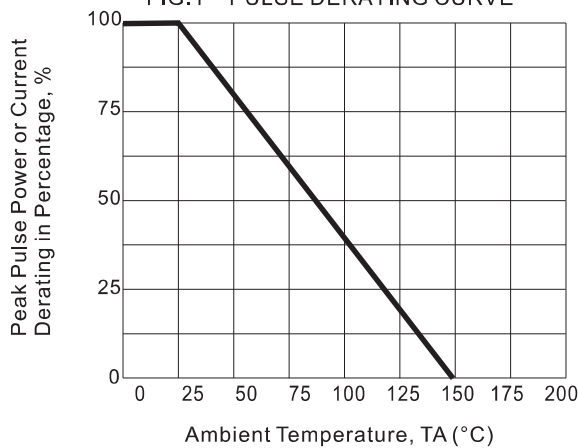


FIG.2 - 10X1000us PULSE WAVEFORM

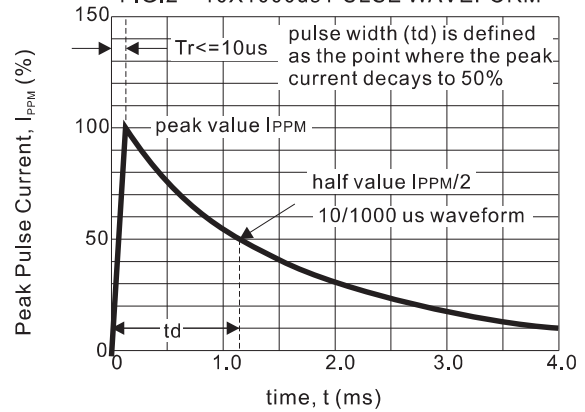


FIG.3 - 8X20us PULSE WAVEFORM

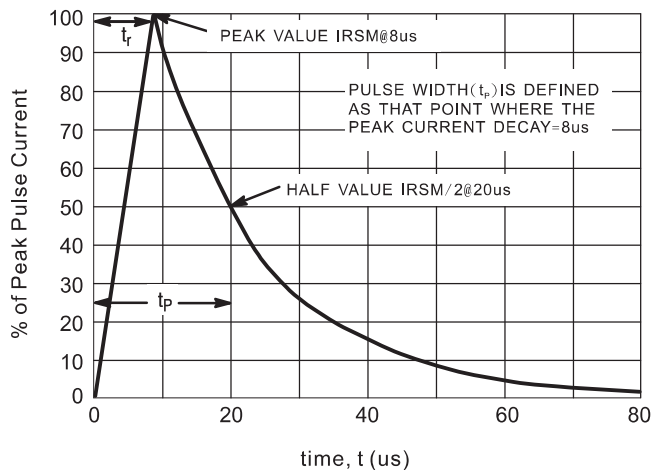


FIG.4 - PEAK PULSE POWER RATING CURVE

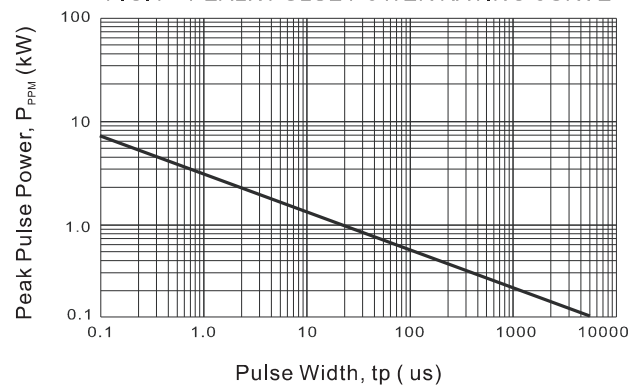
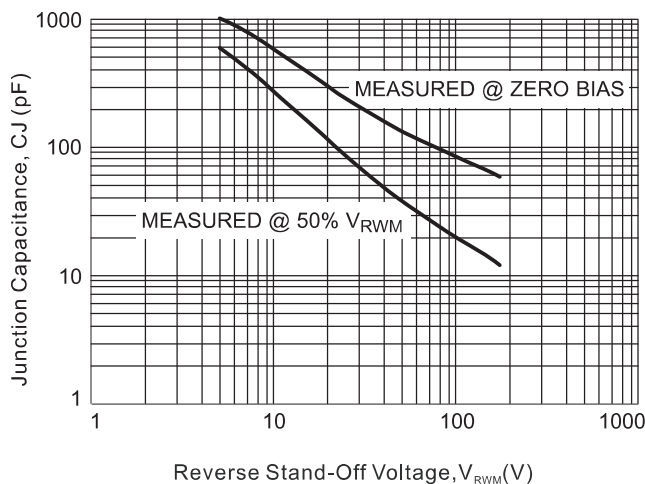


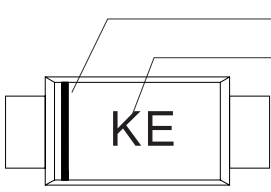
FIG.5 - TYPICAL JUNCTION CAPACITANCE



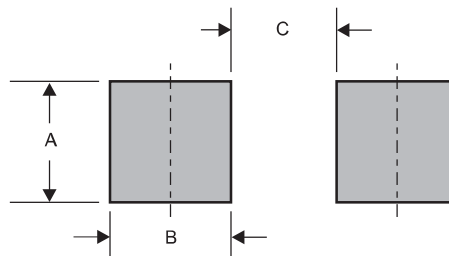
Pinning information

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

Marking

Type number	Example
Uni-Directional	 Cathode band Marking code (see page 2)
Bi-Directional	 Marking code (see page 2)

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)