

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 requirements.
- Compliant to Halogen-free
- Suffix "-Q1" for AEC-Q101.

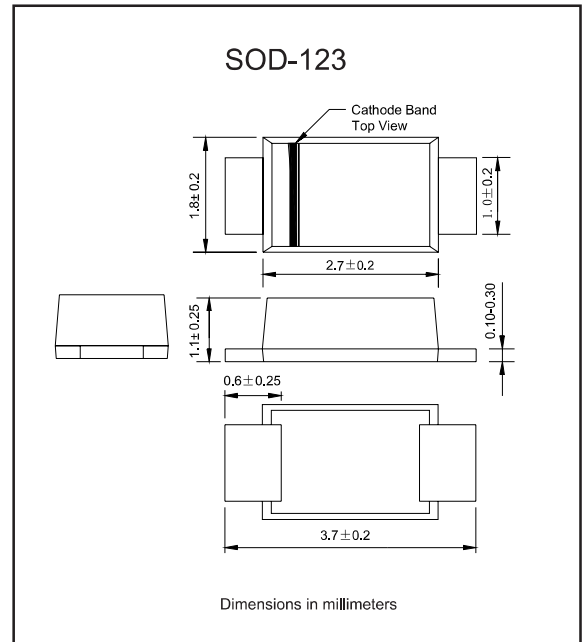
Applications

- 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 $10 \times 1000\mu\text{s}$ (Note 1)	P_{PPM}	400	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

400W Surface Mount Unidirectional Bidirectional Transient Voltage Suppressors Diodes- 5.0V- 170V

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-
S4MF5.0(C)A-Q1	5.0	6.40	7.25	10	40	9.2	43.5	4TE	4KE
S4MF6.0(C)A-Q1	6.0	6.67	7.37	10	40	10.3	38.0	4TG	4KG
S4MF6.5(C)A-Q1	6.5	7.22	7.98	10	30	11.2	35.7	4TK	4KK
S4MF7.0(C)A-Q1	7.0	7.78	8.60	10	30	12.0	33.3	4TM	4KM
S4MF7.5(C)A-Q1	7.5	8.33	9.21	1.0	30	12.9	31.0	4TP	4KP
S4MF8.0(C)A-Q1	8.0	8.89	9.83	1.0	20	13.6	29.4	4TR	4KR
S4MF8.5(C)A-Q1	8.5	9.44	10.4	1.0	10	14.4	27.7	4TT	4KT
S4MF9.0(C)A-Q1	9.0	10.0	11.1	1.0	5.0	15.4	26.0	4TV	4KV
S4MF10(C)A-Q1	10	11.1	12.3	1.0	2.0	17.0	23.5	4TX	4KX
S4MF11(C)A-Q1	11	12.2	13.5	1.0	1.0	18.2	22.0	4TZ	4KZ
S4MF12(C)A-Q1	12	13.3	14.7	1.0	1.0	19.9	20.1	4UE	4LE
S4MF13(C)A-Q1	13	14.4	15.9	1.0	1.0	21.5	18.6	4UG	4LG
S4MF14(C)A-Q1	14	15.6	17.2	1.0	1.0	23.2	17.2	4UK	4LK
S4MF15(C)A-Q1	15	16.7	18.5	1.0	1.0	24.4	16.4	4UM	4LM
S4MF16(C)A-Q1	16	17.8	19.7	1.0	1.0	26.0	15.4	4UP	4LP
S4MF17(C)A-Q1	17	18.9	20.9	1.0	1.0	27.6	14.5	4UR	4LR
S4MF18(C)A-Q1	18	20.0	22.1	1.0	1.0	29.2	13.7	4UT	4LT
S4MF20(C)A-Q1	20	22.2	24.5	1.0	1.0	32.4	12.3	4UV	4LV
S4MF22(C)A-Q1	22	24.4	26.9	1.0	1.0	35.5	11.2	4UX	4LX
S4MF24(C)A-Q1	24	26.7	29.5	1.0	1.0	38.9	10.3	4UZ	4LZ
S4MF26(C)A-Q1	26	28.9	31.9	1.0	1.0	42.1	9.5	4VE	4ME
S4MF28(C)A-Q1	28	31.1	34.4	1.0	1.0	45.4	8.8	4VG	4MG
S4MF30(C)A-Q1	30	33.3	36.8	1.0	1.0	48.4	8.3	4VK	4MK
S4MF33(C)A-Q1	33	36.7	40.6	1.0	1.0	53.3	7.5	4VM	4MM
S4MF36(C)A-Q1	36	40.0	44.2	1.0	1.0	58.1	6.9	4VP	4MP
S4MF40(C)A-Q1	40	44.4	49.1	1.0	1.0	64.5	6.2	4VR	4MR
S4MF43(C)A-Q1	43	47.8	52.8	1.0	1.0	69.4	5.8	4VT	4MT
S4MF45(C)A-Q1	45	50.0	55.3	1.0	1.0	72.7	5.5	4VV	4MV
S4MF48(C)A-Q1	48	53.3	58.9	1.0	1.0	77.4	5.2	4VX	4MX
S4MF51(C)A-Q1	51	56.7	62.7	1.0	1.0	82.4	4.9	4VZ	4MZ
S4MF54(C)A-Q1	54	60.0	66.3	1.0	1.0	87.1	4.6	4WE	4NE
S4MF58(C)A-Q1	58	64.4	71.2	1.0	1.0	93.6	4.3	4WG	4NG
S4MF60(C)A-Q1	60	66.7	73.7	1.0	1.0	96.8	4.1	4WK	4NK
S4MF64(C)A-Q1	64	71.1	78.6	1.0	1.0	103	3.9	4WM	4NM
S4MF70(C)A-Q1	70	77.8	86.0	1.0	1.0	113	3.5	4WP	4NP
S4MF75(C)A-Q1	75	83.3	92.1	1.0	1.0	121	3.3	4WR	4NR
S4MF78(C)A-Q1	78	86.7	95.8	1.0	1.0	126	3.2	4WT	4NT
S4MF85(C)A-Q1	85	94.4	104	1.0	1.0	137	2.9	4WV	4NV
S4MF90(C)A-Q1	90	100	111	1.0	1.0	146	2.7	4WX	4NX
S4MF100(C)A-Q1	100	111	123	1.0	1.0	162	2.5	4WZ	4NZ
S4MF110(C)A-Q1	110	122	135	1.0	1.0	177	2.3	4XE	4PE
S4MF120(C)A-Q1	120	133	147	1.0	1.0	193	2.1	4XG	4PG
S4MF130(C)A-Q1	130	144	159	1.0	1.0	209	1.9	4XK	4PK
S4MF150(C)A-Q1	150	167	185	1.0	1.0	243	1.6	4XM	4PM
S4MF160(C)A-Q1	160	178	197	1.0	1.0	259	1.5	4XP	4PP
S4MF170(C)A-Q1	170	189	209	1.0	1.0	275	1.5	4XR	4PR

- 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

FIG.1 - PULSE DERATING CURVE

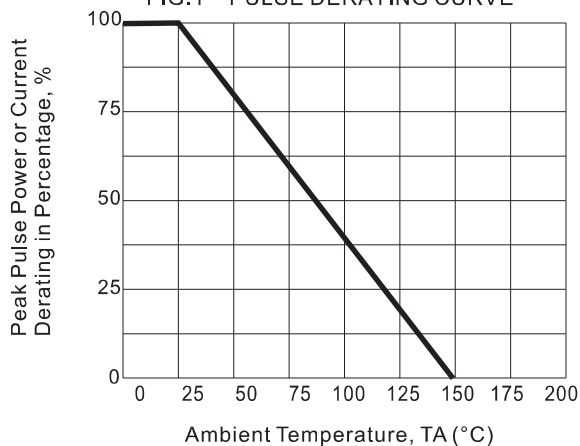


FIG.2 - 10X1000us PULSE WAVEFORM

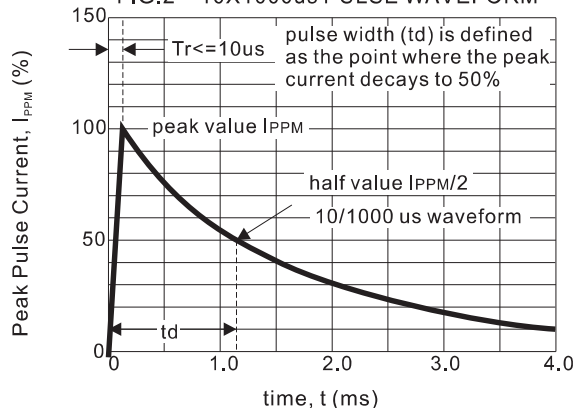


FIG.3 - 8X20us PULSE WAVEFORM

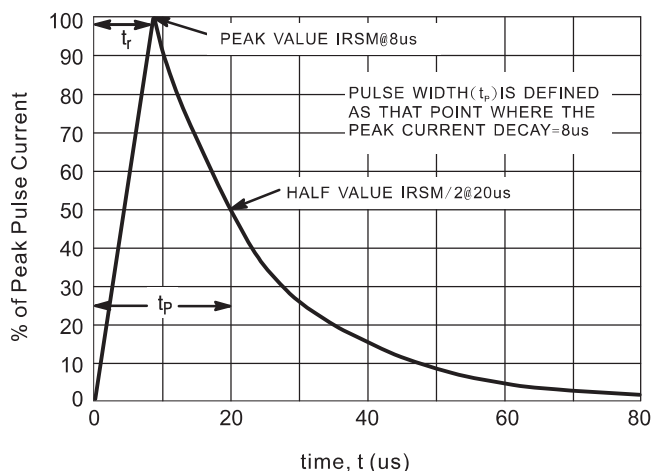


FIG.4 - PEAK PULSE POWER RATING CURVE

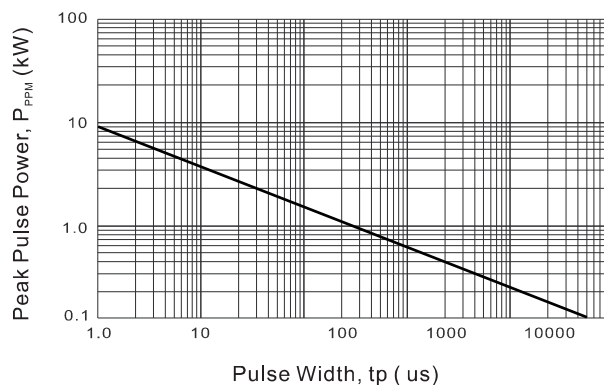
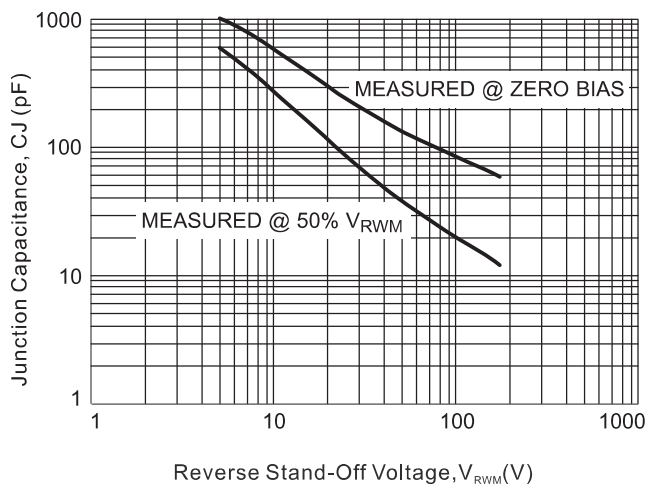


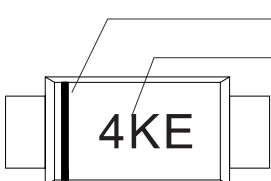
FIG.5 - TYPICAL JUNCTION CAPACITANCE



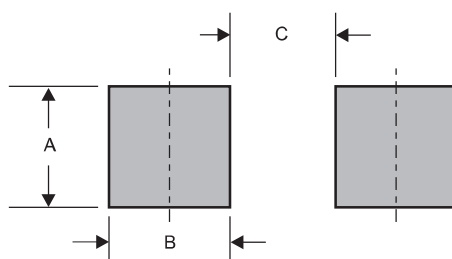
Pinning information

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)