



Surface Mount Transient Voltage Suppressors (TVS)

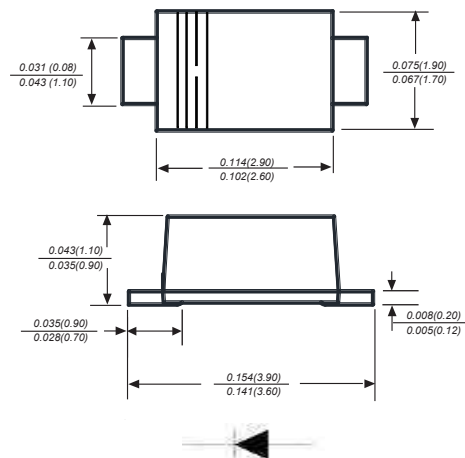
Features

- For surface mounted applications
- Low profile package
- Low incremental surge resistance, excellent clamping capability
- 200W peak pulse power capability with a10/1000 μ s wave from, repetition rate (duty cycle):0.01%
- High temperature soldering guaranteed:
260 °C/10 seconds, at terminals

Mechanical Data

- Case: JEDEC SOD-123FL, molded plastic over passivated chip
- Polarity: Color band denotes positive end (cathode) except for bidirectional
- Mounting position: Any
- Weight: 0.006 ounces, 0.02 gram

SOD-123FL



Dimensions in inches and (millimeters)

Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Maximum P_{PK} Dissipation (PW - 10/1000 μ s)	P_{PK}	200	W
Maximum P_{PK} Dissipation @ $T_A = 25^\circ\text{C}$ (PW - 8/10 μ s) (Note 2)	P_{PK}	1000	W
DC Power Dissipation @ $T_A = 25^\circ\text{C}$ (Note 3)	P_D	385	mW
Derate above 25°C		4.0	mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient (Note 3)	$R_{\theta JA}$	325	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction to Lead (Note 3)	$R_{\theta JL}$	26	$^\circ\text{C}/\text{W}$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

Notes :

- (1) Non-repetitive current pulse at $T_A = 25^\circ\text{C}$, per waveform of Fig. 2.
- (2) Non-repetitive current pulse at $T_A = 25^\circ\text{C}$, per waveform of Fig. 5.
- (3) Mounted with recommended minimum pad size, DC board FR4.

ELECTRICAL CHARACTERISTICS $T_A = 25^\circ\text{C}$, continued

TYPE		Reverse Stand-Off Voltage	Breakdown Voltage Min. @ I_T	Breakdown Voltage Max. @ I_T	Test Current	Reverse Leakage @ V_{RWM}	Maximum Clamping Voltage @ I_{PP}	Peak Pulse Current
(Uni)	(Bi)	$V_{RWM}(V)$	$V_{BR\ MIN}(V)$	$V_{BR\ MAX}(V)$	$I_T\ (mA)$	$I_R(\mu A)$	$V_C(V)$	$I_{PP}(A)$
S2FL5.0A	S2FL5.0CA	5.0	6.40	7.00	10	400	9.2	21.7
S2FL6.0A	S2FL6.0CA	6.0	6.67	7.37	10	400	10.3	19.4
S2FL6.5A	S2FL6.5CA	6.5	7.22	7.98	10	250	11.2	17.9
S2FL7.0A	S2FL7.0CA	7.0	7.78	8.60	10	100	12.0	16.7
S2FL7.5A	S2FL7.5CA	7.5	8.33	9.21	1.0	50	12.9	15.5
S2FL8.0A	S2FL8.0CA	8.0	8.89	9.83	1.0	25	13.6	14.7
S2FL8.5A	S2FL8.5CA	8.5	9.44	10.4	1.0	10	14.4	13.9
S2FL9.0A	S2FL9.0CA	9.0	10.0	11.1	1.0	5.0	15.4	13.0
S2FL10A	S2FL10CA	10	11.1	12.3	1.0	2.5	17.0	11.8
S2FL11A	S2FL11CA	11	12.2	13.5	1.0	2.5	18.2	11.0
S2FL12A	S2FL12CA	12	13.3	14.7	1.0	2.5	19.9	10.1
S2FL13A	S2FL13CA	13	14.4	15.9	1.0	1.0	21.5	9.3
S2FL14A	S2FL14CA	14	15.6	17.2	1.0	1.0	23.2	8.6
S2FL15A	S2FL15CA	15	16.7	18.5	1.0	1.0	24.4	8.2
S2FL16A	S2FL16CA	16	17.8	19.7	1.0	1.0	26.0	7.7
S2FL17A	S2FL17CA	17	18.9	20.9	1.0	1.0	27.6	7.2
S2FL18A	S2FL18CA	18	20.0	22.1	1.0	1.0	29.2	6.8
S2FL20A	S2FL20CA	20	22.2	24.5	1.0	1.0	32.4	6.2
S2FL22A	S2FL22CA	22	24.4	26.9	1.0	1.0	35.5	5.6
S2FL24A	S2FL24CA	24	26.7	29.5	1.0	1.0	38.9	5.1
S2FL26A	S2FL26CA	26	28.9	31.9	1.0	1.0	42.1	4.8
S2FL28A	S2FL28CA	28	31.1	34.4	1.0	1.0	45.4	4.4
S2FL30A	S2FL30CA	30	33.3	36.8	1.0	1.0	48.4	4.1
S2FL33A	S2FL33CA	33	36.7	40.6	1.0	1.0	53.3	3.8
S2FL36A	S2FL36CA	36	40.0	44.2	1.0	1.0	58.1	3.4
S2FL40A	S2FL40CA	40	44.4	49.1	1.0	1.0	64.5	3.1
S2FL43A	S2FL43CA	43	47.8	52.8	1.0	1.0	69.4	2.9
S2FL45A	S2FL45CA	45	50.0	55.3	1.0	1.0	72.7	2.8
S2FL48A	S2FL48CA	48	53.3	58.9	1.0	1.0	77.4	2.6
S2FL51A	S2FL51CA	51	56.7	62.7	1.0	1.0	82.4	2.4
S2FL54A	S2FL54CA	54	60.0	66.3	1.0	1.0	87.1	2.3
S2FL58A	S2FL58CA	58	64.4	71.2	1.0	1.0	93.6	2.1
S2FL60A	S2FL60CA	60	66.7	73.7	1.0	1.0	96.8	1.8
S2FL64A	S2FL64CA	64	71.1	78.6	1.0	1.0	103	1.7
S2FL70A	S2FL70CA	70	77.8	86.0	1.0	1.0	113	1.5
S2FL75A	S2FL75CA	75	83.3	92.1	1.0	1.0	121	1.4
S2FL78A	S2FL78CA	78	86.7	95.8	1.0	1.0	126	1.4
S2FL85A	S2FL85CA	85	94.4	104	1.0	1.0	137	1.3
S2FL90A	S2FL90CA	90	100	111	1.0	1.0	146	1.2
S2FL100A	S2FL100CA	100	111	123	1.0	1.0	162	1.1
S2FL110A	S2FL110CA	110	122	135	1.0	1.0	177	1.0
S2FL120A	S2FL120CA	120	133	147	1.0	1.0	193	0.9
S2FL130A	S2FL130CA	130	144	159	1.0	1.0	209	0.8
S2FL150A	S2FL150CA	150	167	185	1.0	1.0	243	0.7
S2FL160A	S2FL160CA	160	178	197	1.0	1.0	259	0.7
S2FL170A	S2FL170CA	170	189	209	1.0	1.0	275	0.6

Characteristic Curves $T_A = 25^\circ\text{C}$ unless otherwise noted

Fig.1 Peak Pulse Power Rating Curve

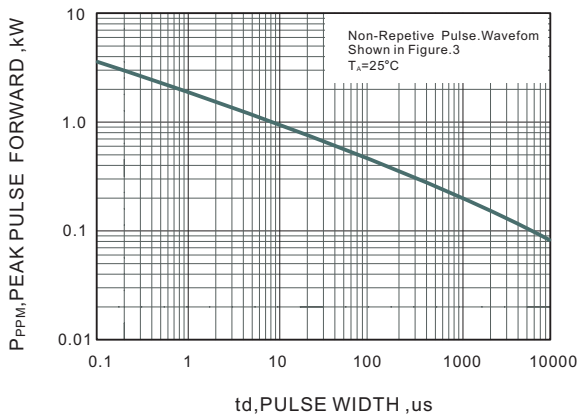


Fig.2 Forward Current Derating Curve

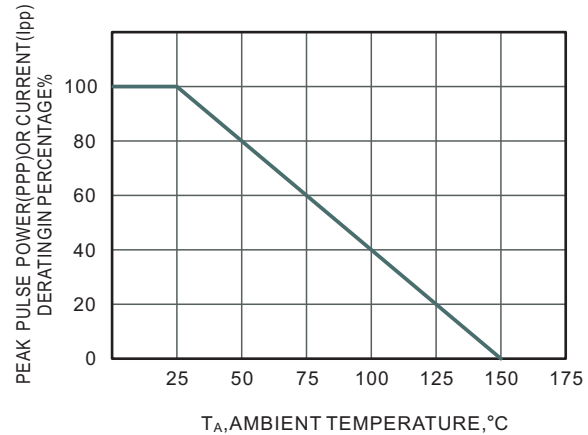


Fig.3 Pulse Waveform

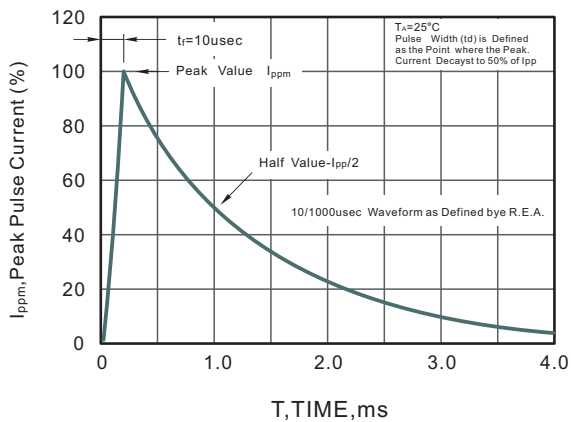
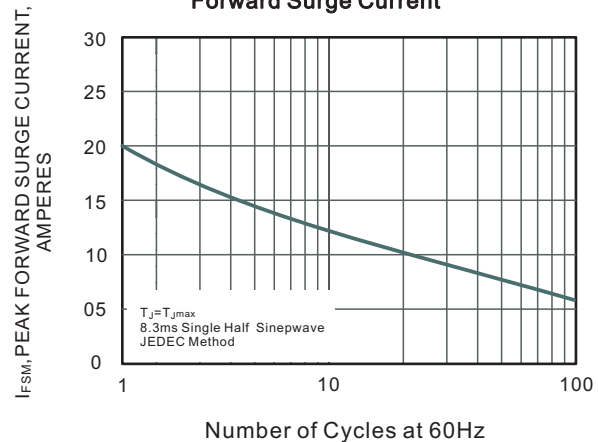


Fig.4 Maximum Non-Repetitive Peak Forward Surge Current



Ordering Information

S2FL	XX	C	A
200W SOD-123FL Series	voltage	C: Bi-directional	5% VBR Voltage tolerance



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