

200W Surface Mount Transient Voltage Suppressor

Features

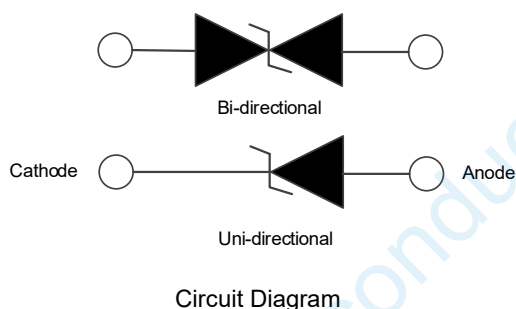
- ✧ 200W Peak Pulse Power (10/1000us Waveform)
- ✧ Typical I_R less than $1\mu A$ above 12V
- ✧ Low incremental surge resistance
- ✧ High temperature soldering: $260^\circ C/10s$ at terminals
- ✧ Fast response time
- ✧ Low profile package
- ✧ Excellent clamping capability

Applications

- ✧ Power lines
- ✧ Automotive and Telecommunication
- ✧ Industrial Electronics
- ✧ Computers & Consumer Electronics

Mechanical Data

- ✧ UL Flame Rating : UL94V-0
- ✧ RoHS/WEEE Compliant



SOD123FL

Absolute Maximum Rating at $T_A = 25^\circ C$, unless otherwise specified

Rating	Symbol	Value	Units
Peak Pulse Power ($t_p = 10/1000\mu s$)	P_{PPM}	200	W
Peak Pulse Current ($t_p = 10/1000\mu s$)	I_{pp}	See next table	A
Power Dissipation on Infinite Heat Sink at $T_L = 50^\circ C$	P_D	1	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave	I_{FSM}	30	A
Operating Temperature	T_J	-55 to + 150	$^\circ C$
Storage Temperature	T_{STG}	-55 to + 150	$^\circ C$

Electrical Characteristics at $T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise specified

Type		Marking		Peak Pulse Power	Stand-off Voltage	Maximum Reverse Current at VR	Breakdown Voltage at IT		Test Current	Maximum Peak Pulse Current	Maximum Clamping Voltage at Ipp
Uni-Polar	Bi-Polar	Uni-Polar	Bi-Polar	PPP (W)	V(R) (V)	IR (uA)	V (BR) (V)		IT (mA)	Ipp (A)	Vc (V)
							Min.	Max.			
SMFJ3.3A	SMFJ3.3CA	AD	HD	200	3.3	400	5.2	6.0	10	23.5	8.5
SMFJ5.0A	SMFJ5.0CA	AE	HE	200	5	400	6.4	7	10	21.7	9.2
SMFJ6.0A	SMFJ6.0CA	AG	HG	200	6	400	6.67	7.37	10	19.4	10.3
SMFJ6.5A	SMFJ6.5CA	AK	HK	200	6.5	250	7.22	7.98	10	17.9	11.2
SMFJ7.0A	SMFJ7.0CA	AM	HM	200	7	100	7.78	8.6	10	16.7	12.0
SMFJ7.5A	SMFJ7.5CA	AP	HP	200	7.5	50	8.33	9.21	1	15.5	12.9
SMFJ8.0A	SMFJ8.0CA	AR	HR	200	8	25	8.89	9.83	1	14.7	13.6
SMFJ8.5A	SMFJ8.5CA	AT	HT	200	8.5	10	9.44	10.4	1	13.9	14.4
SMFJ9.0A	SMFJ9.0CA	AV	HV	200	9	5	10	11.1	1	13.0	15.4
SMFJ10A	SMFJ10CA	AX	HX	200	10	2.5	11.1	12.3	1	11.8	17.0
SMFJ11A	SMFJ11CA	AZ	HZ	200	11	2.5	12.2	13.5	1	11.0	18.2
SMFJ12A	SMFJ12CA	BE	IE	200	12	2.5	13.3	14.7	1	10.1	19.9
SMFJ13A	SMFJ13CA	BG	IG	200	13	1	14.4	15.9	1	9.3	21.5
SMFJ14A	SMFJ14CA	BK	IK	200	14	1	15.6	17.2	1	8.6	23.2
SMFJ15A	SMFJ15CA	BM	IM	200	15	1	16.7	18.5	1	8.2	24.4
SMFJ16A	SMFJ16CA	BP	IP	200	16	1	17.8	19.7	1	7.7	26.0
SMFJ17A	SMFJ17CA	BR	IR	200	17	1	18.9	20.9	1	7.2	27.6
SMFJ18A	SMFJ18CA	BT	IT	200	18	1	20	22.1	1	6.8	29.2
SMFJ20A	SMFJ20CA	BV	IV	200	20	1	22.2	24.5	1	6.2	32.4
SMFJ22A	SMFJ22CA	BX	IX	200	22	1	24.4	26.9	1	5.6	35.5
SMFJ24A	SMFJ24CA	BZ	IZ	200	24	1	26.7	29.5	1	5.1	38.9
SMFJ26A	SMFJ26CA	CE	JE	200	26	1	28.9	31.9	1	4.8	42.1
SMFJ28A	SMFJ28CA	CG	JG	200	28	1	31.1	34.4	1	4.4	45.4
SMFJ30A	SMFJ30CA	CK	JK	200	30	1	33.3	36.8	1	4.1	48.4
SMFJ33A	SMFJ33CA	CM	JM	200	33	1	36.7	40.6	1	3.8	53.3
SMFJ36A	SMFJ36CA	CP	JP	200	36	1	40	44.2	1	3.4	58.1
SMFJ40A	SMFJ40CA	CR	JR	200	40	1	44.4	49.1	1	3.1	64.5
SMFJ43A	SMFJ43CA	CT	JT	200	43	1	47.8	52.8	1	2.9	69.4
SMFJ45A	SMFJ45CA	CV	JV	200	45	1	50	55.3	1	2.8	72.7
SMFJ48A	SMFJ48CA	CX	JX	200	48	1	53.3	58.9	1	2.6	77.4
SMFJ51A	SMFJ51CA	CZ	JZ	200	51	1	56.7	62.7	1	2.4	82.4
SMFJ54A	SMFJ54CA	DE	KE	200	54	1	60	66.3	1	2.3	87.1
SMFJ58A	SMFJ58CA	RG	KG	200	58	1	64.4	71.2	1	2.1	93.6
SMFJ60A	SMFJ60CA	RK	KK	200	60	1	66.7	73.7	1	2.1	96.8
SMFJ64A	SMFJ64CA	RM	KM	200	64	1	71.1	78.6	1	1.9	103
SMFJ70A	SMFJ70CA	RP	KP	200	70	1	77.8	86	1	1.7	113
SMFJ75A	SMFJ75CA	RR	KR	200	75	1	83.3	92.1	1	1.6	121
SMFJ78A	SMFJ78CA	RT	KT	200	78	1	86.7	95.8	1	1.6	126
SMFJ85A	SMFJ85CA	RV	KV	200	85	1	94.4	104	1	1.5	137
SMFJ90A	SMFJ90CA	RW	KX	200	90	1	100	111	1	1.2	146
SMFJ100A	SMFJ100CA	RX	KZ	200	100	1	111	123	1	1.1	162
SMFJ110A	SMFJ110CA	SE	LE	200	110	1	122	135	1	1.1	177
SMFJ120A	SMFJ120CA	SG	LG	200	120	1	133	147	1	1.0	193
SMFJ130A	SMFJ130CA	SK	LK	200	130	1	144	159	1	1.0	209
SMFJ150A	SMFJ150CA	SM	LM	200	150	1	167	185	1	0.8	243
SMFJ160A	SMFJ160CA	SP	LP	200	160	1	178	197	1	0.8	259
SMFJ170A	SMFJ170CA	SR	LR	200	170	1	189	209	1	0.7	275
SMFJ180A	SMFJ180CA	ST	LT	200	180	1	201	222	1	0.7	292
SMFJ188A	SMFJ188CA	SV	LV	200	188	1	209	231	1	0.7	304
SMFJ200A	SMFJ200CA	SX	LX	200	200	1	224	247	1	0.6	324
SMFJ220A	SMFJ220CA	SZ	LZ	200	220	1	246	272	1	0.6	356
SMFJ250A	SMFJ250CA	TE	ME	200	250	1	279	309	1	0.5	405

Typical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

Fig. 1-Peak Pulse Power Rating Curve

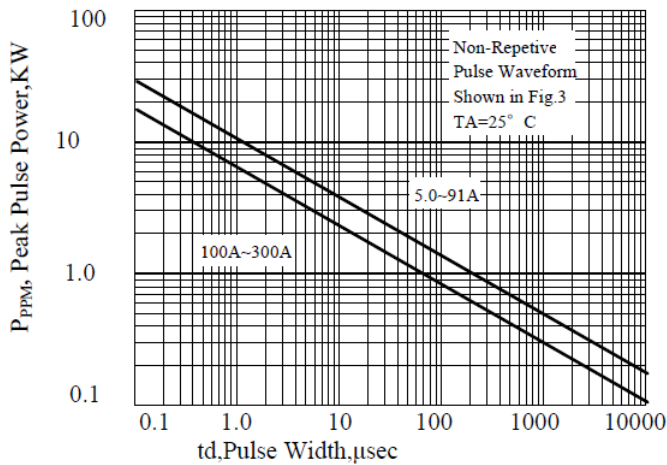


Fig. 2-Power Derating Curve

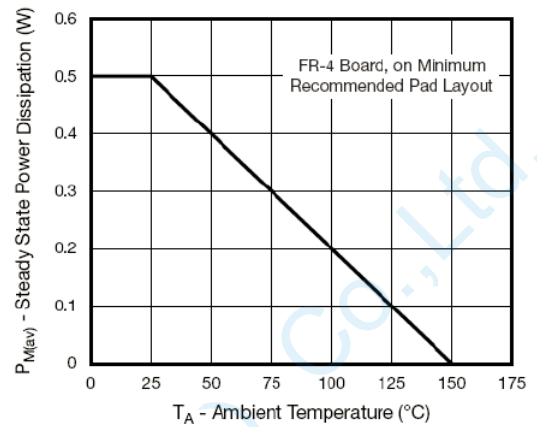


Fig. 3-Pulse Waveform

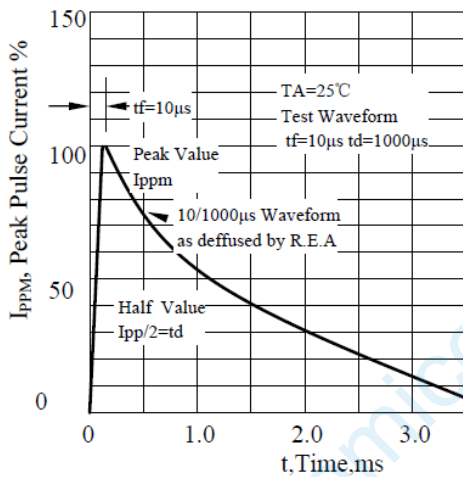


Fig. 4-Typical Junction Capacitance Unidirectional

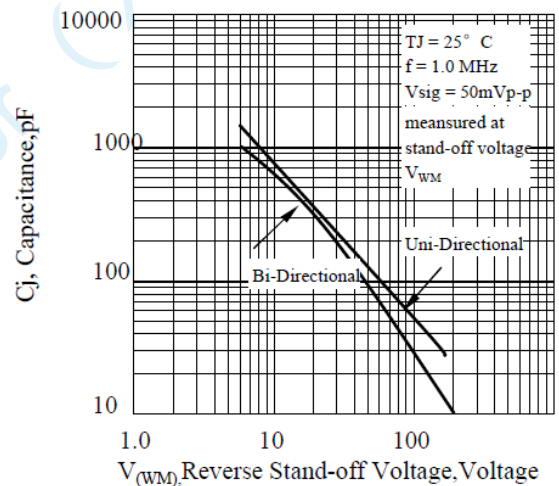


Fig 5. - typical transient thermal impedance

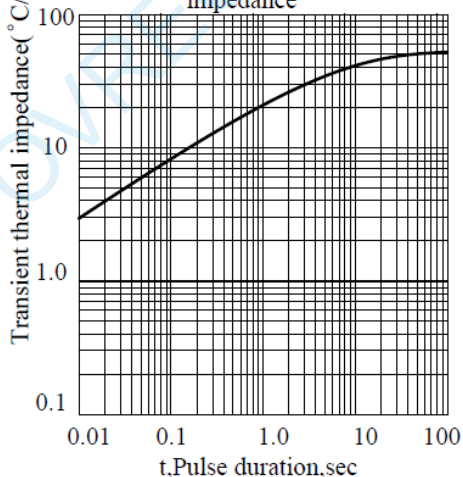
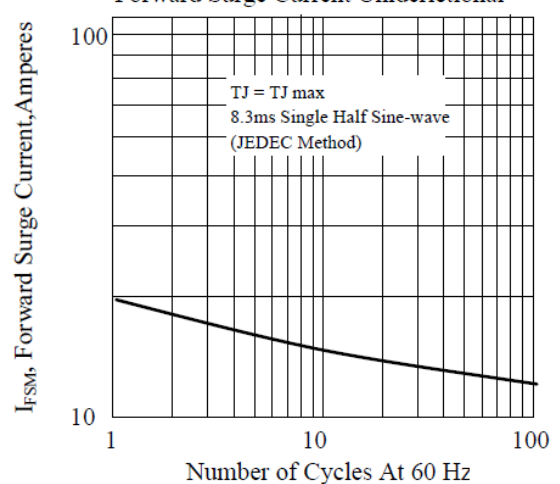
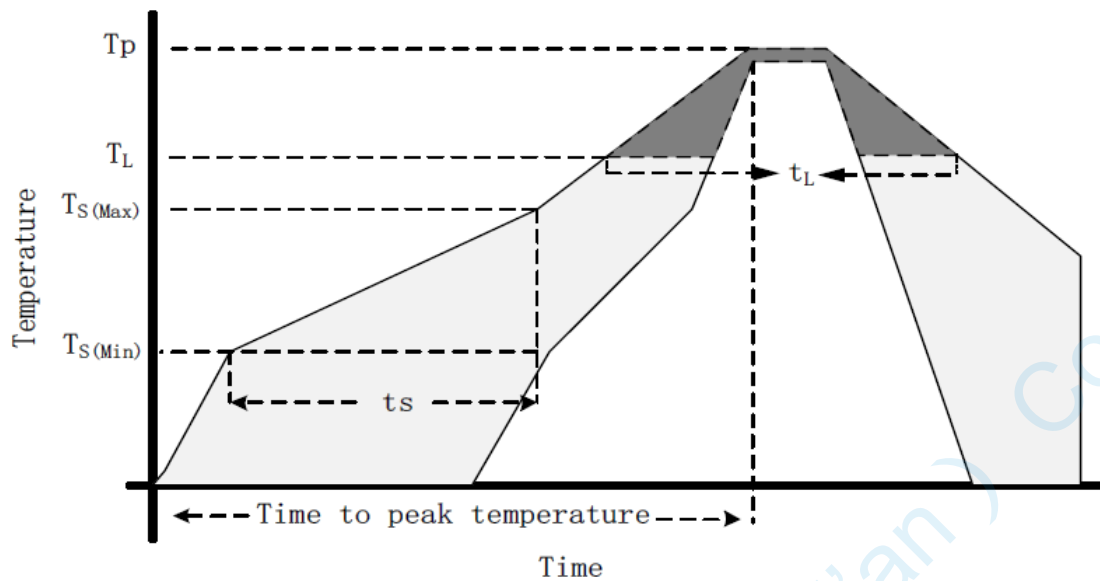


Fig. 6-Maximum Non-Repetitive Peak Forward Surge Current Unidirectional



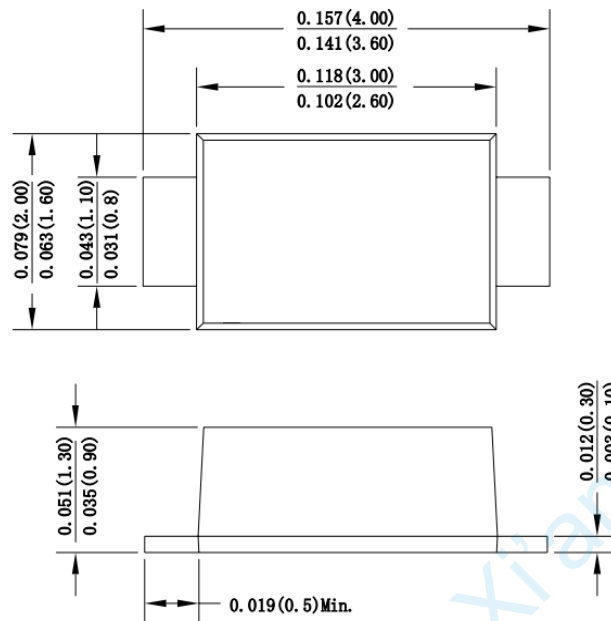
Soldering Parameters



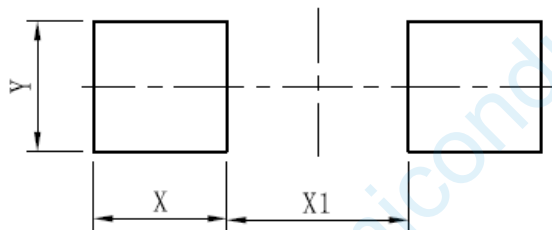
Reflow Condition		Pb – Free assembly
Pre Heat	- Temperature Min ($T_{s(min)}$)	150°C
	- Temperature Max ($T_{s(max)}$)	200°C
	- Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus) Temp(T_L) to peak		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_L) (Liquidus)	220°C
	- Temperature (t_L)	60 – 150 seconds
Peak Temp(T_p)		260 $\pm$ 0.5 °C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes Max.
Do not exceed		260°C

Package Information

SOD123FL



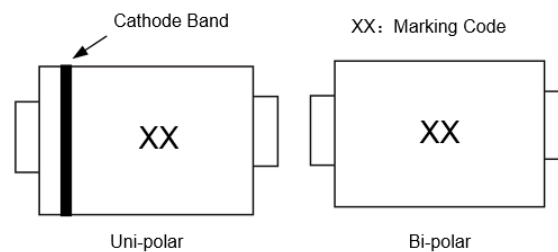
Recommend PCB Layout



DIM	(mm)
X	1.20
Y	1.10
X1	2.00

Notes: This PCB Layout Is For Reference Purposes Only

Marking



Ordering Information

Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (Kpcs)	Box Size (mm)	QTY/Box (Kpcs)	Carton Size (mm)	Q'TY/Carton (Kpcs)
SOD123FL	7'	178	3	180	15	380*200*200	150