

Features

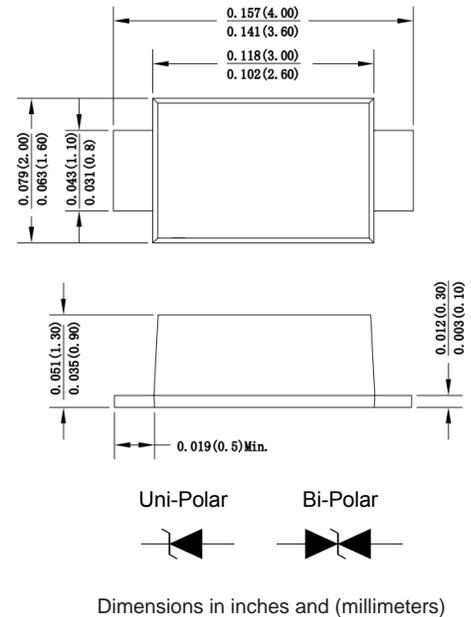
- Glass passivated junction chip
- 200 W peak pulse power capability with a 10/1000 us waveform, repetitive rate (duty cycle):0.01 %
- Excellent clamping capability
- Low reverse leakage
- Very fast response time
- Lead and body according with RoHS standard

SOD123FL



Mechanical Data

- Case: SOD123FL Molded plastic
- Lead: Solderable per MIL-STD-750, method 2026
- Epoxy: UL 94V-0 rate flame retardant
- Polarity: Color band denotes cathode end except Bipolar
- Mounting position: Any



Maximum Ratings And Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbols	Value	Unit
Peak power dissipation with a 10/1000 us waveform ⁽¹⁾	P_{PP}	200	W
Peak pulse current with a 10/1000 us waveform ⁽¹⁾	I_{PP}	See Next Table	A
Power dissipation on infinite heatsink at $T_L = 75^\circ\text{C}$	P_D	0.4	W
Peak forward surge current, 8.3 ms single half sinewave unidirectional only ⁽²⁾	I_{FSM}	30	A
Maximum instantaneous forward voltage at 10 A for unidirectional only ⁽³⁾	V_F	3.5	V
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	°C

Note:

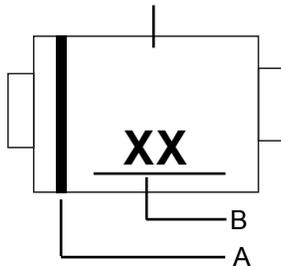
1) Non-repetitive current pulse per Fig.5 and derated above $T_A = 25^\circ\text{C}$ per Fig.1 ;

2) Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum ;

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	V(R)	IR	V (BR) (V)		IT	Ipp	Vc
				(W)	(V)	(uA)	Min.	Max.			
SMF5.0A	SMF5.0CA	AE	HE	200	5	400	6.4	7	10	21.7	9.2
SMF6.0A	SMF6.0CA	AG	HG	200	6	400	6.67	7.37	10	19.4	10.3
SMF6.5A	SMF6.5CA	AK	HK	200	6.5	250	7.22	7.98	10	17.9	11.2
SMF7.0A	SMF7.0CA	AM	HM	200	7	100	7.78	8.6	10	16.7	12.0
SMF7.5A	SMF7.5CA	AP	HP	200	7.5	50	8.33	9.21	1	15.5	12.9
SMF8.0A	SMF8.0CA	AR	HR	200	8	25	8.89	9.83	1	14.7	13.6
SMF8.5A	SMF8.5CA	AT	HT	200	8.5	10	9.44	10.4	1	13.9	14.4
SMF9.0A	SMF9.0CA	AV	HV	200	9	5	10	11.1	1	13.0	15.4
SMF10A	SMF10CA	AX	HX	200	10	2.5	11.1	12.3	1	11.8	17.0
SMF11A	SMF11CA	AZ	HZ	200	11	2.5	12.2	13.5	1	11.0	18.2
SMF12A	SMF12CA	BE	IE	200	12	2.5	13.3	14.7	1	10.1	19.9
SMF13A	SMF13CA	BG	IG	200	13	1	14.4	15.9	1	9.3	21.5
SMF14A	SMF14CA	BK	IK	200	14	1	15.6	17.2	1	8.6	23.2
SMF15A	SMF15CA	BM	IM	200	15	1	16.7	18.5	1	8.2	24.4
SMF16A	SMF16CA	BP	IP	200	16	1	17.8	19.7	1	7.7	26.0
SMF17A	SMF17CA	BR	IR	200	17	1	18.9	20.9	1	7.2	27.6
SMF18A	SMF18CA	BT	IT	200	18	1	20	22.1	1	6.8	29.2
SMF20A	SMF20CA	BV	IV	200	20	1	22.2	24.5	1	6.2	32.4
SMF22A	SMF22CA	BX	IX	200	22	1	24.4	26.9	1	5.6	35.5
SMF24A	SMF24CA	BZ	IZ	200	24	1	26.7	29.5	1	5.1	38.9
SMF26A	SMF26CA	CE	JE	200	26	1	28.9	31.9	1	4.8	42.1
SMF28A	SMF28CA	CG	JG	200	28	1	31.1	34.4	1	4.4	45.4
SMF30A	SMF30CA	CK	JK	200	30	1	33.3	36.8	1	4.1	48.4
SMF33A	SMF33CA	CM	JM	200	33	1	36.7	40.6	1	3.8	53.3
SMF36A	SMF36CA	CP	JP	200	36	1	40	44.2	1	3.4	58.1
SMF40A	SMF40CA	CR	JR	200	40	1	44.4	49.1	1	3.1	64.5
SMF43A	SMF43CA	CT	JT	200	43	1	47.8	52.8	1	2.9	69.4
SMF45A	SMF45CA	CV	JV	200	45	1	50	55.3	1	2.8	72.7
SMF48A	SMF48CA	CX	JX	200	48	1	53.3	58.9	1	2.6	77.4
SMF51A	SMF51CA	CZ	JZ	200	51	1	56.7	62.7	1	2.4	82.4
SMF54A	SMF54CA	DE	KE	200	54	1	60	66.3	1	2.3	87.1
SMF58A	SMF58CA	RG	KG	200	58	1	64.4	71.2	1	2.1	93.6
SMF60A	SMF60CA	RK	KK	200	60	1	66.7	73.7	1	2.1	96.8
SMF64A	SMF64CA	RM	KM	200	64	1	71.1	78.6	1	1.9	103
SMF70A	SMF70CA	RP	KP	200	70	1	77.8	86	1	1.7	113
SMF75A	SMF75CA	RR	KR	200	75	1	83.3	92.1	1	1.6	121
SMF78A	SMF78CA	RT	KT	200	78	1	86.7	95.8	1	1.6	126
SMF85A	SMF85CA	RV	KV	200	85	1	94.4	104	1	1.5	137
SMF90A	SMF90CA	RW	KX	200	90	1	100	111	1	1.2	146
SMF100A	SMF100CA	RX	KZ	200	100	1	111	123	1	1.1	162

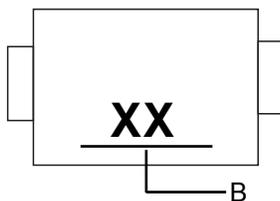
Type		Marking		Peak Pulse Power	Stand-off Voltage	Maximum Reverse Current at VR	Breakdown Voltage at IT		Test Current	Maximum Peak Pulse Current	Maximum Clamping Voltage at Ipp
Uni-Polar	Bi-Polar	Uni-Polar	Bi-Polar	PPP	V(R)	IR	V (BR) (V)		IT	Ipp	Vc
				(W)	(V)	(uA)	Min.	Max.			
SMF110A	SMF110CA	SE	LE	200	110	1	122	135	1	1.1	177
SMF120A	SMF120CA	SG	LG	200	120	1	133	147	1	1.0	193
SMF130A	SMF130CA	SK	LK	200	130	1	144	159	1	1.0	209
SMF150A	SMF150CA	SM	LM	200	150	1	167	185	1	0.8	243
SMF160A	SMF160CA	SP	LP	200	160	1	178	197	1	0.8	259
SMF170A	SMF170CA	SR	LR	200	170	1	189	209	1	0.7	275
SMF180A	SMF180CA	ST	LT	200	180	1	201	222	1	0.7	292
SMF188A	SMF188CA	SV	LV	200	188	1	209	231	1	0.7	304
SMF200A	SMF200CA	SX	LX	200	200	1	224	247	1	0.6	324
SMF220A	SMF220CA	SZ	LZ	200	220	1	246	272	1	0.6	356
SMF250A	SMF250CA	TE	ME	200	250	1	279	309	1	0.5	405

Marking For Uni-Polar



Symbol	Explanation
A	Color Band Denotes Cathode
B	Marking Code, as above sheet

Marking For Bi-Polar



Symbol	Explanation
B	Marking Code, as above sheet

Ratings And Characteristic Curves

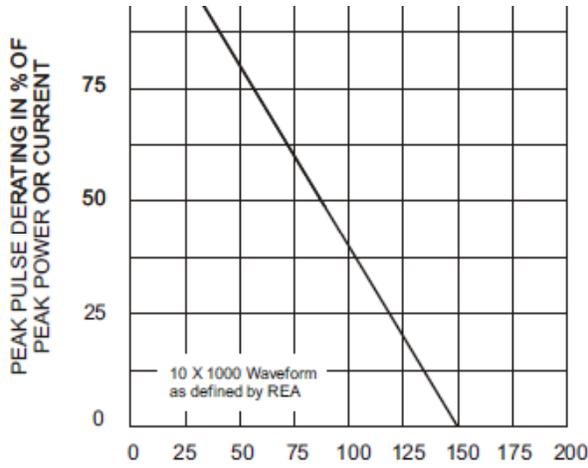


Fig. 1 - Pulse Derating Curve

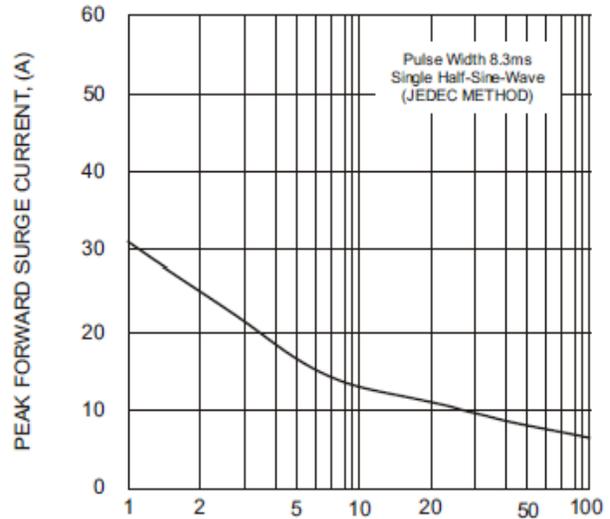


Fig. 2 - Maximum Non-Repetitive Surge Current

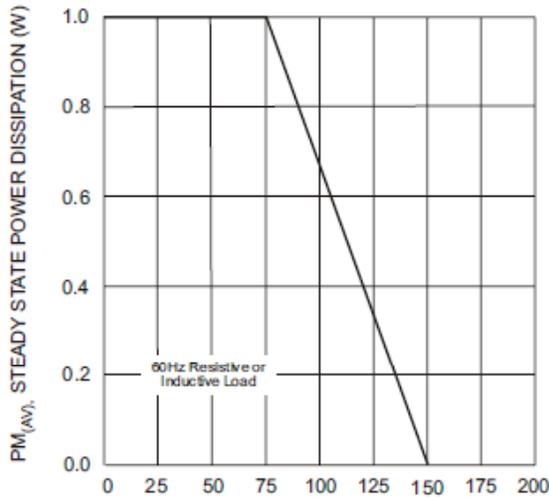


Fig. 3 - Steady State Power Derating Curve

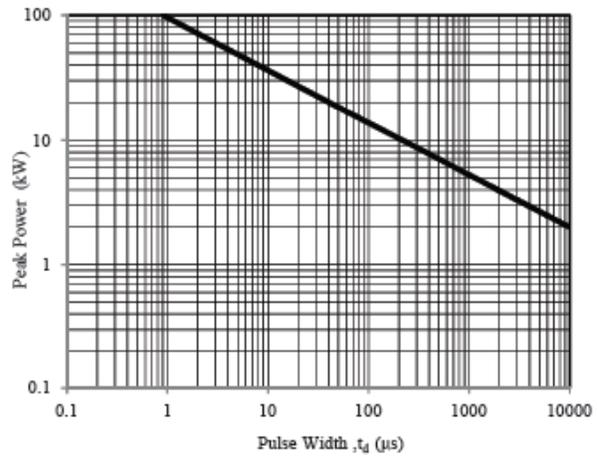


Fig. 4 - Peak Pulse Power Rating Curve

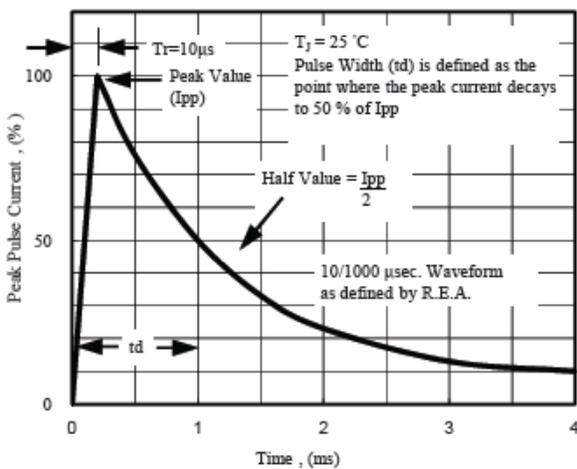


Fig. 5 - Pulse Waveform

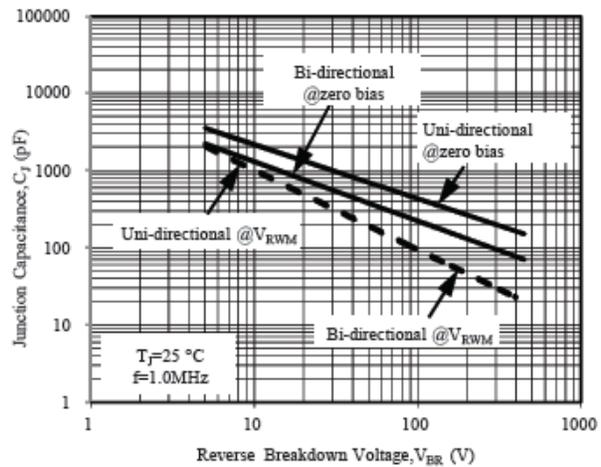
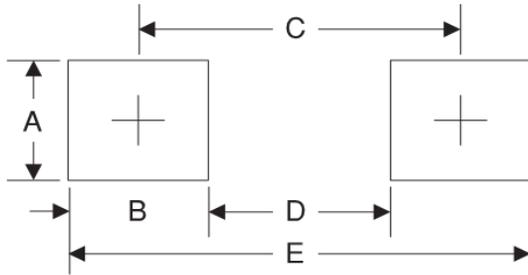


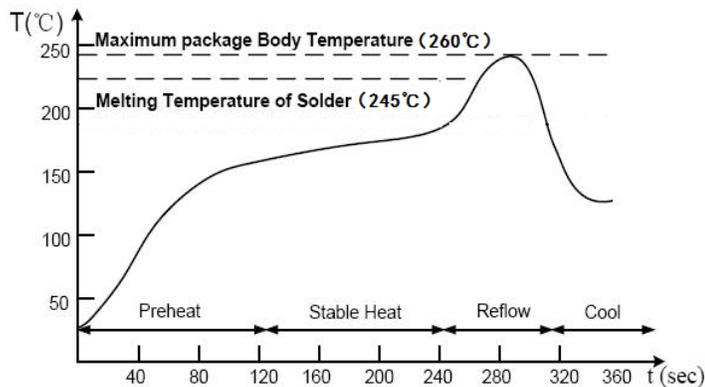
Fig. 6 - Typical Junction Capacitance

Suggested Pad Layout



Symbol	Unit (mm)	Unit (inch)
A	1.2	0.048
B	1.15	0.045
C	3.10	0.122
D	1.95	0.077
E	4.25	0.167

Suggested Soldering Temperature Profile

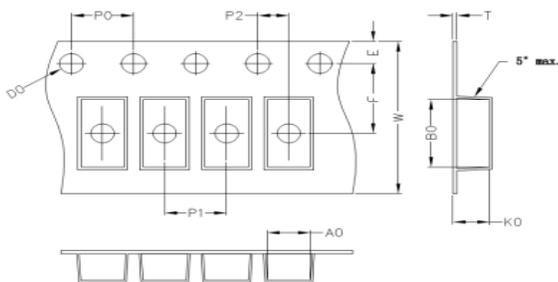


Note

- Recommended reflow methods: IR, vapor phase oven, hot air oven, wave solder.
- The device can be exposed to a maximum temperature of 260°C for 10 seconds.
- Devices can be cleaned using standard industry methods and solvents.
- If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

Package Information

Carrier Dimension(mm)



A0	B0	K0	D0	E	F
2.15	3.95	1.35	1.55	1.75	3.50
P0	P1	P2	T	W	Tolerance
4.0	4.0	2.0	0.25	8	0.1

Package Specifications

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