

### Features

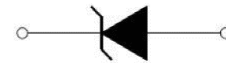
- Peak power dissipation 200W@10 x 1000 us Pulse
- Low incremental surge resistance
- Excellent clamping capability
- Glass passivated junction
- Fast response time
- Low leakage current
- Halogen free and RoHS compliant



SOD-123FL top view



Bi-directional



Uni-direction

### Mechanical Data

- CASE: SOD-123FL Molded Plastic
- Polarity: By cathode band denotes uni-directional device, none cathode band denotes bi-directional device
- Mounting Position: Any



Halogen-Free

### Maximum Ratings ( $T_a=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
$P_{PPM}$	Peak Pulse Power Dissipation	200	W
$P_D$	Steady State Power Dissipation	1	W
$I_{PPM}$	Peak Pulse Current of on 10/1000 us Waveform (Note1, FIG.3)	See Table 1	A
$I_{FSM}$	Peak Forward Surge Current, 8.3ms Single Half Sine-Wave (Note 2.3)	20	A
$V_{FM}$	Maximum Instantaneous Forward Voltage at 10A	3.5	V
$R_{\theta JL}$	Typical Thermal Resistance Junction to Lead	100	$^\circ\text{C/W}$
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	220	$^\circ\text{C/W}$
$T_J, T_{stg}$	Operation Junction and Storage Temperature Range	-55~+150	$^\circ\text{C}$

- Notes: 1. Non-repetitive current pulse, per Fig.3 and derated above  $T_A=25^\circ\text{C}$  per Fig.2.  
 2. Mounted on 5.0x5.0mm<sup>2</sup> (0.03mm thick) Copper Pads to each terminal.  
 3. Measured on 8.3ms single half sine-wave, or equivalent square wave, for Unidirectional device only.

**T<sub>a</sub>=25°C unless otherwise specified**

Tcpt Number		Marking		Reverse Stand-Off Voltage	Breakdown Voltage Min. @I <sub>T</sub>	Breakdown Voltage Max. @ I <sub>T</sub>	Test Current	Maximum Clamping Voltage @I <sub>PP</sub>	Peak Pulse Current	Reverse Leakage @V <sub>RMW</sub>
Uni	Bi	Uni	Bi	V <sub>RMW</sub> (V)	V <sub>BR MIN</sub> (V)	V <sub>BR MAX</sub> (V)	IT (mA)	V <sub>C</sub> (V)	I <sub>PP</sub> (A)	I <sub>R</sub> (uA)
SMF5.0A	SMF5.0CA	5.0A	5.0CA	5.0	6.40	7.00	10	9.2	21.7	400.0
SMF6.0A	SMF6.0CA	6.0A	6.0CA	6.0	6.67	7.37	10	10.3	19.4	400.0
SMF6.5A	SMF6.5CA	6.5A	6.5CA	6.5	7.22	7.98	10	11.2	17.9	250.0
SMF7.0A	SMF7.0CA	7.0A	7.0CA	7.0	7.78	8.60	10	12.0	16.7	100.0
SMF7.5A	SMF7.5CA	7.5A	7.5CA	7.5	8.33	9.21	1	12.9	15.5	50.0
SMF8.0A	SMF8.0CA	8.0A	8.0CA	8.0	8.89	9.83	1	13.6	14.7	25.0
SMF8.5A	SMF8.5CA	8.5A	8.5CA	8.5	9.44	10.40	1	14.4	13.9	10.0
SMF9.0A	SMF9.0CA	9.0A	9.0CA	9.0	10.00	11.10	1	15.4	13.0	5.0
SMF10A	SMF10CA	10A	10CA	10.0	11.10	12.30	1	17.0	11.8	2.5
SMF11A	SMF11CA	11A	11CA	11.0	12.20	13.50	1	18.2	11.0	2.5
SMF12A	SMF12CA	12A	12CA	12.0	13.30	14.70	1	19.9	10.1	2.5
SMF13A	SMF13CA	13A	13CA	13.0	14.40	15.90	1	21.5	9.3	1.0
SMF14A	SMF14CA	14A	14CA	14.0	15.60	17.20	1	23.2	8.6	1.0
SMF15A	SMF15CA	15A	15CA	15.0	16.70	18.50	1	24.4	8.2	1.0
SMF16A	SMF16CA	16A	16CA	16.0	17.80	19.70	1	26.0	7.7	1.0
SMF17A	SMF17CA	17A	17CA	17.0	18.90	20.90	1	27.6	7.2	1.0
SMF18A	SMF18CA	18A	18CA	18.0	20.00	22.10	1	29.2	6.8	1.0
SMF20A	SMF20CA	20A	20CA	20	22.20	24.50	1	32.4	6.2	1.0
SMF22A	SMF22CA	22A	22CA	22	24.40	26.90	1	35.5	5.6	1.0
SMF24A	SMF24CA	24A	24CA	24	26.70	29.50	1	38.9	5.1	1.0
SMF26A	SMF26CA	26A	26CA	26	28.90	31.90	1	42.1	4.8	1.0
SMF28A	SMF28CA	28A	28CA	28	31.10	34.40	1	45.4	4.4	1.0
SMF30A	SMF30CA	30A	30CA	30	33.30	36.80	1	48.4	4.1	1.0
SMF33A	SMF33CA	33A	33CA	33	36.70	40.60	1	53.3	3.8	1.0
SMF36A	SMF36CA	36A	36CA	36	40.00	44.20	1	58.1	3.4	1.0
SMF40A	SMF40CA	40A	40CA	40	44.40	49.10	1	64.5	3.1	1.0
SMF43A	SMF43CA	43A	43CA	43	47.80	52.80	1	69.4	2.9	1.0
SMF45A	SMF45CA	45A	45CA	45	50.00	55.30	1	72.7	2.8	1.0
SMF48A	SMF48CA	48A	48CA	48	53.30	58.90	1	77.4	2.6	1.0
SMF51A	SMF51CA	51A	51CA	51	56.70	62.70	1	82.4	2.4	1.0
SMF54A	SMF54CA	54A	54CA	54	60.00	66.30	1	87.1	2.3	1.0
SMF58A	SMF58CA	58A	58CA	58	64.40	71.20	1	93.6	2.1	1.0
SMF60A	SMF60CA	60A	60CA	60	66.70	73.70	1	96.8	1.8	1.0
SMF64A	SMF64CA	64A	64CA	64	71.10	78.60	1	103.0	1.7	1.0
SMF70A	SMF70CA	70A	70CA	70	77.80	86.00	1	113.0	1.5	1.0
SMF75A	SMF75CA	75A	75CA	75	83.30	92.10	1	121.0	1.4	1.0
SMF78A	SMF78CA	78A	78CA	78	86.70	95.80	1	126.0	1.4	1.0
SMF85A	SMF85CA	85A	85CA	85	94.40	104.00	1	137.0	1.3	1.0
SMF90A	SMF90CA	90A	90CA	90	100.00	111.00	1	146.0	1.2	1.0
SMF100A	SMF100CA	100A	100C	100	111.00	123.00	1	162.0	1.1	1.0
SMF110A	SMF110CA	110A	110C	110	122.00	135.00	1	177.0	1.0	1.0
SMF120A	SMF120CA	120A	120C	120	133.00	147.00	1	193.0	0.9	1.0
SMF130A	SMF130CA	130A	130C	130	144.00	159.00	1	209.0	0.8	1.0
SMF150A	SMF150CA	150A	150C	150	167.00	185.00	1	243.0	0.7	1.0
SMF160A	SMF160CA	160A	160C	160	178.00	197.00	1	259.0	0.7	1.0
SMF170A	SMF170CA	170A	170C	170	189.00	209.00	1	275.0	0.6	1.0

- Notes: 1. For Bi-directional type having VRWM of 10 Volts and less, the IR limit is double.  
2. For parts without A, the VBR is ± 10% and VC is 5% higher than with A parts.

**Typical Characteristics**

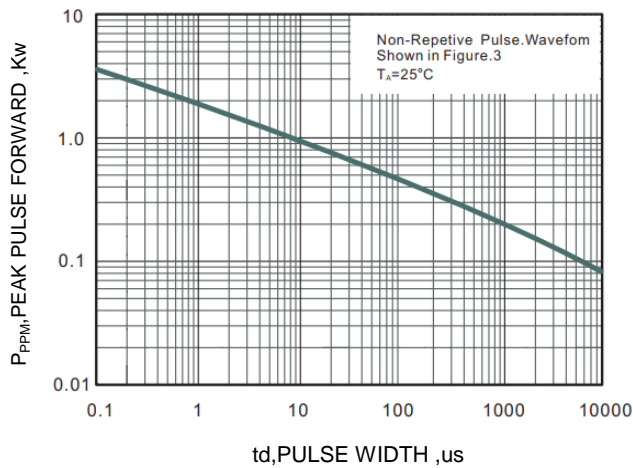


Fig.1 Peak Pulse Power Rating Curve

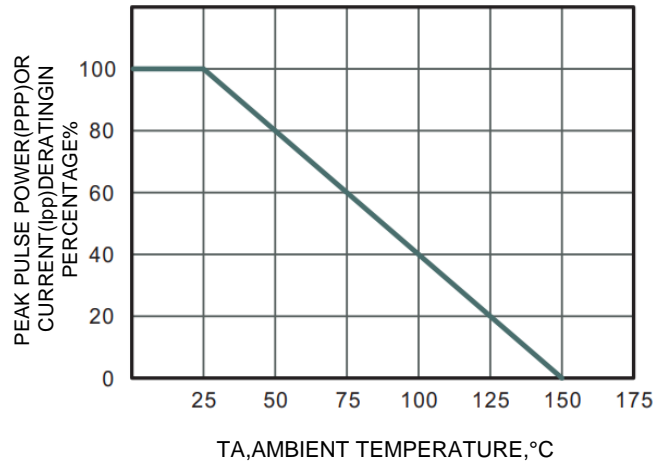


Fig.2 Forward Current Derating Curve

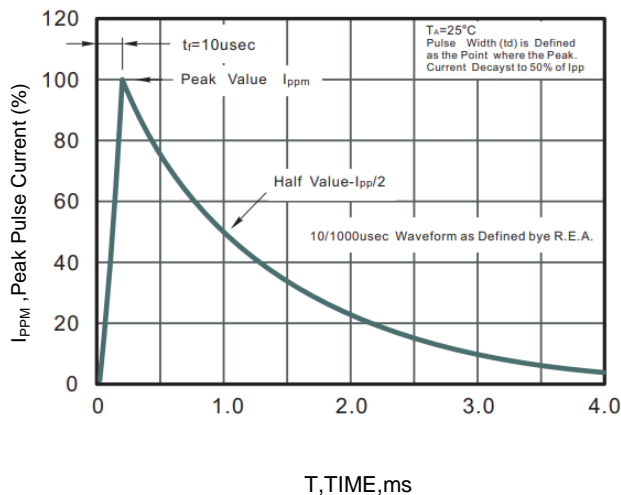


Fig.3 Pulse Waveform

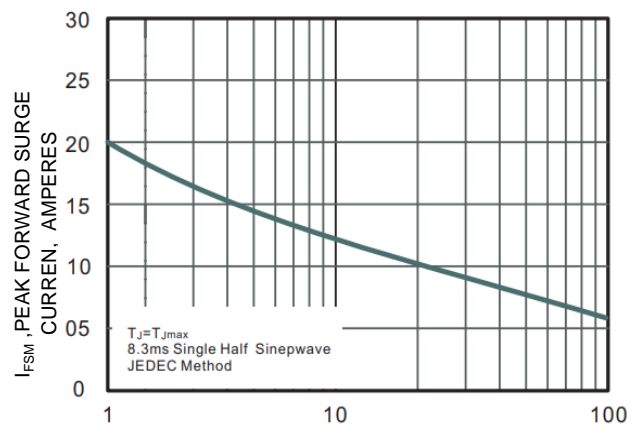
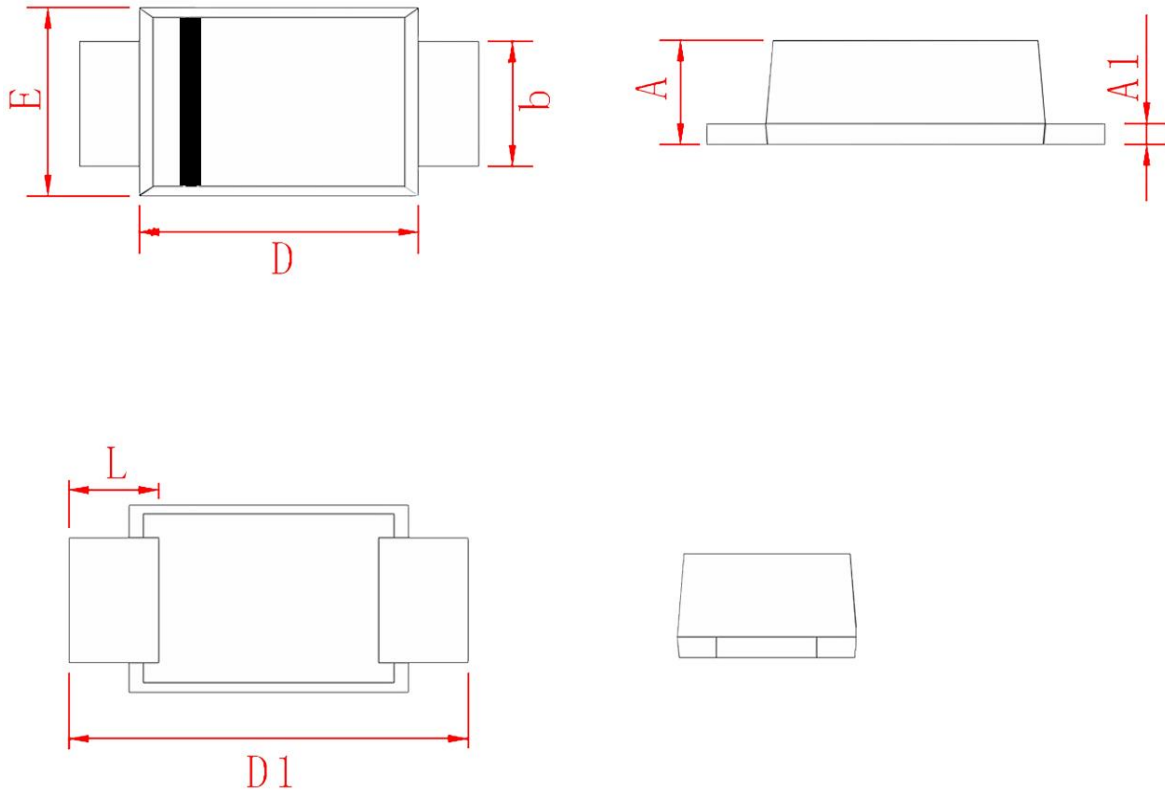


Fig.4 Maximum Non-Repetitive Peak Forward Surge Current

## SOD-123FL Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	1.200	1.400	0.047	0.055
A1	0.120	0.250	0.005	0.010
b	0.850	1.150	0.033	0.045
D	2.650	2.950	0.104	0.116
D1	3.550	3.850	0.140	0.152
E	1.700	1.900	0.067	0.075
L	0.500	0.900	0.020	0.035