

## Features

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



**SMF**  
**SOD-123FL**



## Mechanical Data

- Case: SOD-123FL 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

## Applications

- I/O Interfaces
- Power lines
- Automotive and Telecommunication
- Computers & Consumer Electronics
- Industrial Electronics

Absolute Maximum Rating			
Rating	Symbol	Value	Units
Peak power dissipation with a 10/1000 $\mu$ s waveform <sup>(1)</sup>	$P_{PP}$	200	W
Peak pulse current with a 10/1000 $\mu$ s waveform <sup>(1)</sup>	$I_{PP}$	See Next Table	A
Power dissipation on infinite heatsink at $T_L = 75^\circ\text{C}$	$P_D$	1.0	W
Peak forward surge current, 8.3 ms single half sinewave unidirectional only <sup>(2)</sup>	$I_{FSM}$	30	A
Maximum instantaneous forward voltage at 10 A for unidirectional only <sup>(3)</sup>	$V_F$	3.5/6.5	V
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

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 ;

3) $V_F < 3.5\text{V}$  for devices of  $V_{BR} < 200\text{V}$  and  $V_F < 6.5\text{V}$  for devices of  $V_{BR} > 201\text{V}$ .

## Electrical Characteristics

Part Number		Device Marking Code		Reverse Stand-off Voltage $V_{RWM}(V)$	Breakdown Voltage $V_{BR} @ I_T$		Test Current $I_T(mA)$	Max. Clamping Voltage @ $I_{PP}$ $V_C MAX.(V)$	Max. Peak Pulse Current $I_{PP}(A)$	Max. Reverse Leakage @ $V_{RWM}$ $I_R(\mu A)$
UNI-POLAR	BI-POLAR	UNI	BI		Min.(V)	Max.(V)				
P2SM6.8A	P2SM6.8CA	6V8A	6V8C	5.80	6.45	7.14	10	10.5	19.50	1000
P2SM7.5A	P2SM7.5CA	7V5A	7V5C	6.40	7.13	7.88	10	11.3	18.15	500
P2SM8.2A	P2SM8.2CA	8V2A	8V2C	7.02	7.79	8.61	10	12.1	16.95	200
P2SM9.1A	P2SM9.1CA	9V1A	9V1C	7.78	8.65	9.55	1	13.4	15.30	50
P2SM10A	P2SM10CA	10A	10C	8.55	9.50	10.50	1	14.5	14.15	10
P2SM11A	P2SM11CA	11A	11C	9.40	10.50	11.60	1	15.6	13.15	5
P2SM12A	P2SM12CA	12A	12C	10.20	11.40	12.60	1	16.7	12.30	5
P2SM13A	P2SM13CA	13A	13C	11.10	12.40	13.70	1	18.2	11.25	1
P2SM15A	P2SM15CA	15A	15C	12.80	14.30	15.80	1	21.2	9.65	1
P2SM16A	P2SM16CA	16A	16C	13.60	15.20	16.80	1	22.5	9.10	1
P2SM18A	P2SM18CA	18A	18C	15.30	17.10	18.90	1	25.5	8.05	1
P2SM20A	P2SM20CA	20A	20C	17.10	19.00	21.00	1	27.7	7.40	1
P2SM22A	P2SM22CA	22A	22C	18.80	20.90	23.10	1	30.6	6.70	1
P2SM24A	P2SM24CA	24A	24C	20.50	22.80	25.20	1	33.2	6.15	1
P2SM27A	P2SM27CA	27A	27C	23.10	25.70	28.40	1	37.5	5.45	1
P2SM30A	P2SM30CA	30A	30C	25.60	28.50	31.50	1	41.4	4.95	1
P2SM33A	P2SM33CA	33A	33C	28.20	31.40	34.70	1	45.7	4.50	1
P2SM36A	P2SM36CA	36A	36C	30.80	34.20	37.80	1	49.9	4.10	1
P2SM39A	P2SM39CA	39A	39C	33.30	37.10	41.00	1	53.9	3.80	1
P2SM43A	P2SM43CA	43A	43C	36.80	40.90	45.20	1	59.3	3.45	1
P2SM47A	P2SM47CA	47A	47C	40.20	44.70	49.40	1	64.8	3.15	1
P2SM51A	P2SM51CA	51A	51C	43.60	48.50	53.60	1	70.1	2.90	1
P2SM56A	P2SM56CA	56A	56C	47.80	53.20	58.80	1	77.0	2.65	1
P2SM62A	P2SM62CA	62A	62C	53.00	58.90	65.10	1	85.0	2.40	1
P2SM68A	P2SM68CA	68A	68C	58.10	64.60	71.40	1	92.0	2.25	1
P2SM75A	P2SM75CA	75A	75C	64.10	71.30	78.80	1	103.0	2.00	1
P2SM82A	P2SM82CA	82A	82C	70.10	77.90	86.10	1	113.0	1.80	1
P2SM91A	P2SM91CA	91A	91C	77.80	86.50	95.50	1	125.0	1.65	1
P2SM100A	P2SM100CA	100A	100C	85.50	95.0	105.0	1	137.0	1.50	1
P2SM110A	P2SM110CA	110A	110C	94.00	105.0	116.0	1	152.0	1.35	1
P2SM120A	P2SM120CA	120A	120C	102.0	114.0	126.0	1	165.0	1.25	1
P2SM130A	P2SM130CA	130A	130C	111.0	124.0	137.0	1	179.0	1.15	1
P2SM150A	P2SM150CA	150A	150C	128.0	143.0	158.0	1	207.0	1.00	1
P2SM160A	P2SM160CA	160A	160C	136.0	152.0	168.0	1	219.0	0.95	1
P2SM170A	P2SM170CA	170A	170C	145.0	162.0	179.0	1	234.0	0.90	1
P2SM180A	P2SM180CA	180A	180C	154.0	171.0	189.0	1	246.0	0.85	1
P2SM200A	P2SM200CA	200A	200C	171.0	190.0	210.0	1	274.0	0.75	1
P2SM220A	P2SM220CA	220A	220C	185.00	209.0	231.0	1	328.0	0.65	1
P2SM250A	P2SM250CA	250A	250C	214.00	237.0	263.0	1	344.0	0.60	1
P2SM300A		300A		256.00	285.0	315.0	1	414.0	0.50	1
P2SM350A		350A		300.00	332.0	368.0	1	482.0	0.45	1
P2SM400A		400A		342.00	380.0	420.0	1	548.0	0.40	1
P2SM440A		440A		376.00	418.0	462.0	1	602.0	0.35	1
P2SM480A		480A		408.00	456.0	504.0	1	658.0	0.30	1
P2SM510A		510A		434.00	485.0	535.0	1	698.0	0.30	1
P2SM530A		530A		450.00	503.0	556.0	1	725.0	0.30	1

Ratings and Characteristics Curves (TA=25°C unless otherwise noted)

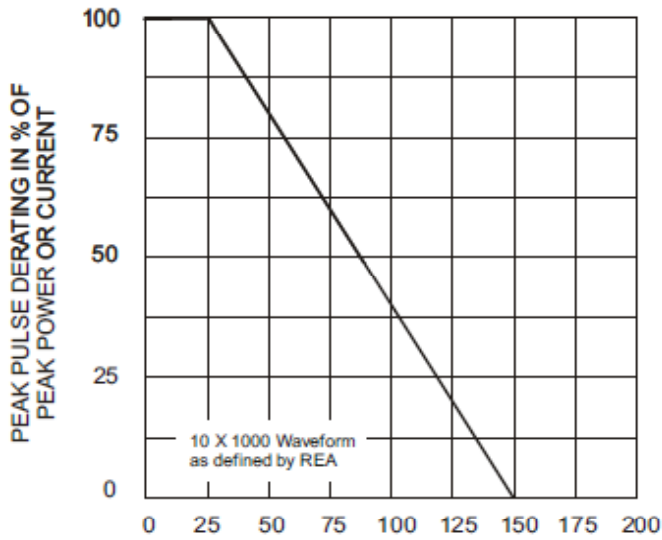


Fig. 1 - Pulse Derating Curve

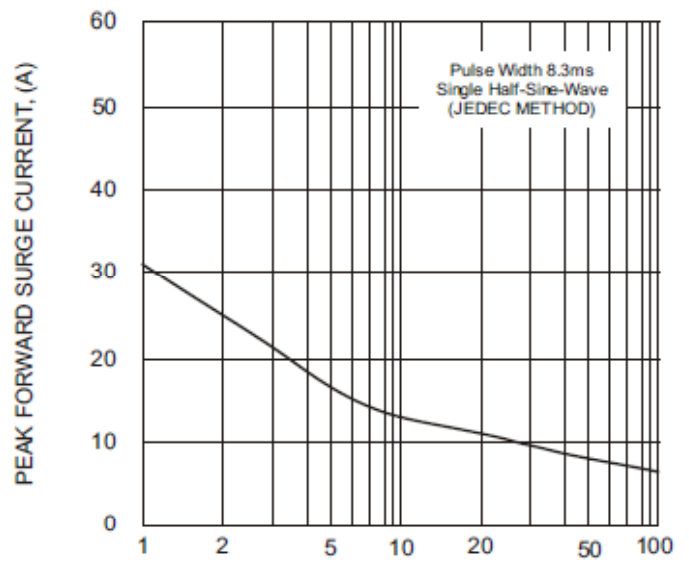


Fig. 2 - Maximum Non-Repetitive Surge Current

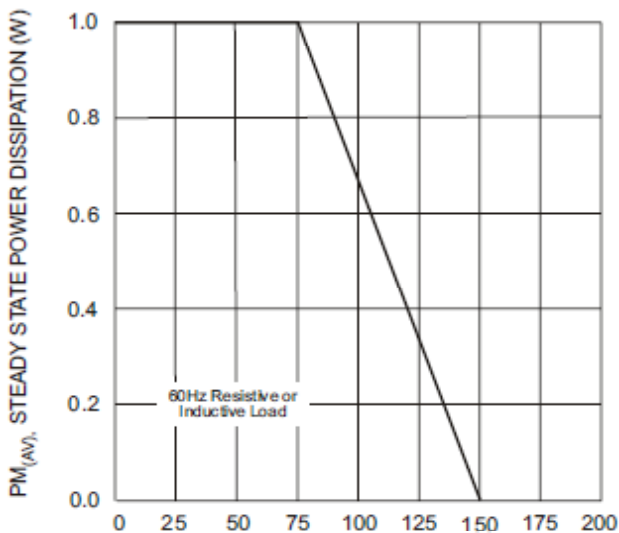


Fig. 3 - Steady State Power Derating Curve

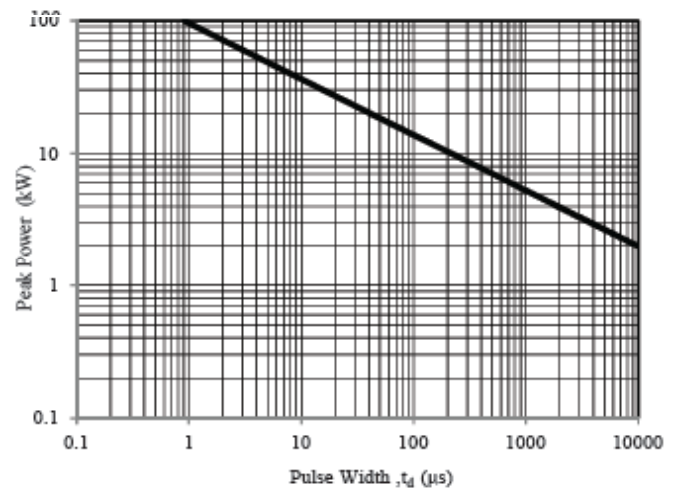


Fig. 4 - Peak Pulse Power Rating Curve

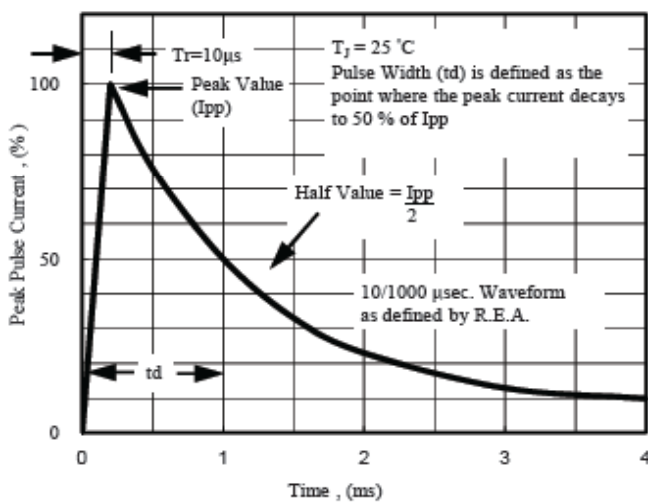


Fig. 5 - Pulse Waveform

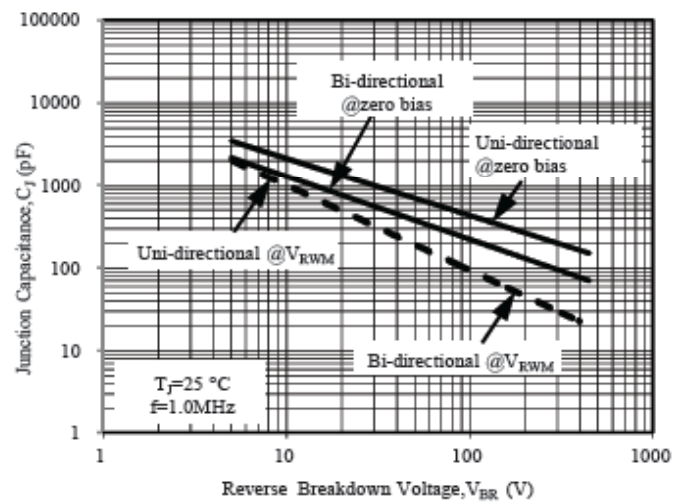
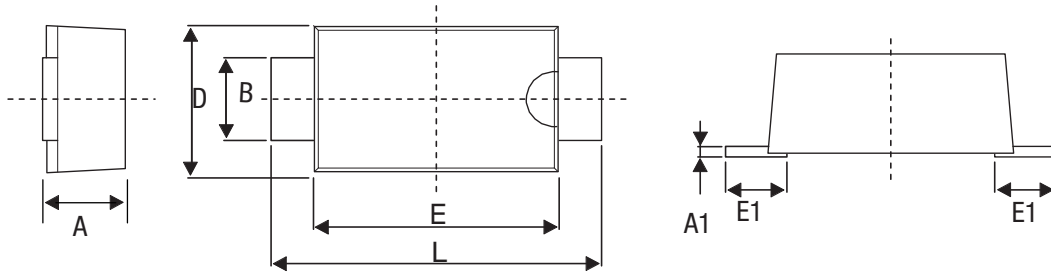


Fig. 6 - Typical Junction Capacitance

**Dimension** (Unit: mm)



A		A1		B		E		E1		D		L	
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1.200	1.400	0.150	0.250	0.800	1.100	2.700	0.900	0.350	0.850	1.750	1.950	3.500	3.900

**Packaging: 3,000/Tape & Reel**

**Part Marking System**

