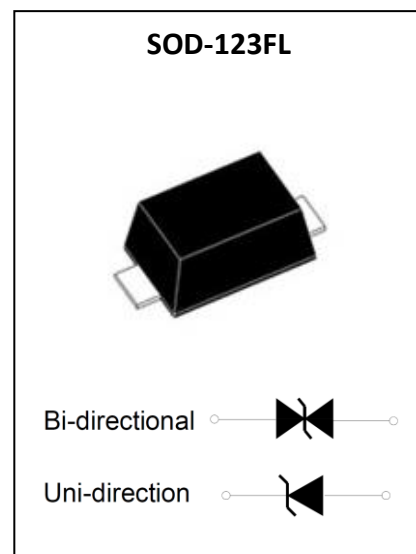


Feature

- Glass passivated chip
- 200W peak pulse power capability with a 10/1000us waveform
- Repetitive rate (duty cycle): 0.01%
- Excellent clamping capability
- Low reverse leakage
- Very fast response time
- Lead and body according with Rohs standard
- Complies with following standards:
 - IEC 61000-4-2(ESD) immunity test level 4
 - Air discharge : $\pm 15\text{kV}$
 - Contact discharge: $\pm 8\text{kV}$



Mechanical Data

- Case: SMF/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

Marking

- SMF
- XXCA/XXA
- XX: From 5.0 to 440

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

Parameter	Symbol	Value	Unit
Peak power dissipation with a 10/1000 us waveform	P_{PP}	200	W
Peak pulse current with a 10/1000 us waveform	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 ¹⁾	I_{FSM}	30	A
Maximum instantaneous forward voltage at 25A for unidirectional only ²⁾	V_F	3.5/6.5	V
Junction Temperature	T_J	-55 ~ +150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^\circ\text{C}$

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

2) $V_F < 3.5\text{V}$ 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 (T_a=25°C unless otherwise specified)

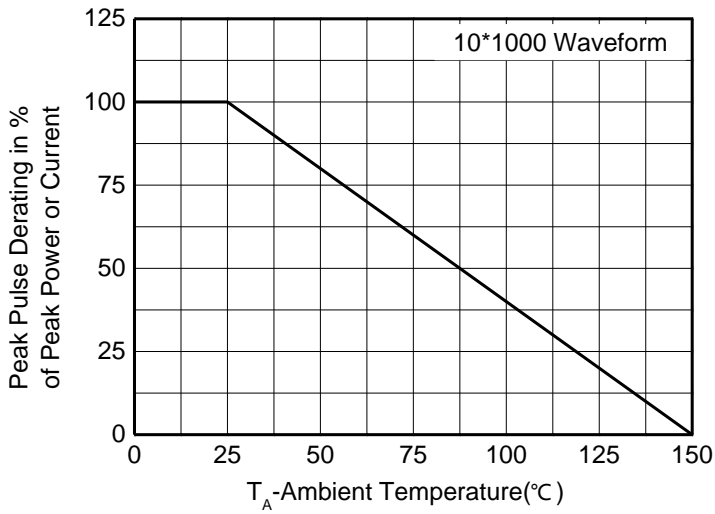
Part Number	Part Number	Reverse Stand-off Voltage VR (V)	Breakdown Voltage VBR (Volts) @ IT		Test Current IT (mA)	Maximum Clamping Voltage VC @ IPP (Volts)	Maximum Peak Pulse Current IPP (A)	Maximum Reverse Leakage IR @ VR (μA)
			MIN	MAX				
SMF5.0A	SMF5.0CA	5	6.4	7	10	9.2	21.7	800
SMF6.0A	SMF6.0CA	6	6.67	7.37	10	10.3	19.4	800
SMF6.5A	SMF6.5CA	6.5	7.22	7.98	10	11.2	17.6	500
SMF7.0A	SMF7.0CA	7	7.78	8.6	10	12	16.6	200
SMF7.5A	SMF7.5CA	7.5	8.33	9.21	1	12.9	15.5	100
SMF8.0A	SMF8.0CA	8	8.89	9.83	1	13.6	14.7	50
SMF8.5A	SMF8.5CA	8.5	9.44	10.4	1	14.4	13.9	20
SMF9.0A	SMF9.0CA	9	10	11.1	1	15.4	13	10
SMF10A	SMF10CA	10	11.1	12.3	1	17	11.7	5
SMF11A	SMF11CA	11	12.2	13.5	1	18.2	11	1
SMF12A	SMF12CA	12	13.3	14.7	1	19.9	10	1
SMF13A	SMF13CA	13	14.4	15.9	1	21.5	9.3	1
SMF14A	SMF14CA	14	15.6	17.2	1	23.2	8.6	1
SMF15A	SMF15CA	15	16.7	18.5	1	24.4	8.2	1
SMF16A	SMF16CA	16	17.8	19.7	1	26	7.7	1
SMF17A	SMF17CA	17	18.9	20.9	1	27.6	7.2	1
SMF18A	SMF18CA	18	20	22.1	1	29.2	6.8	1
SMF20A	SMF20CA	20	22.2	24.5	1	32.4	6.1	1
SMF22A	SMF22CA	22	24.4	26.9	1	35.5	5.6	1
SMF24A	SMF24CA	24	26.7	29.5	1	38.9	5.1	1
SMF26A	SMF26CA	26	28.9	31.9	1	42.1	4.7	1
SMF28A	SMF28CA	28	31.1	34.4	1	45.4	4.4	1
SMF30A	SMF30CA	30	33.3	36.8	1	48.4	4.1	1
SMF33A	SMF33CA	33	36.7	40.6	1	53.3	3.7	1
SMF36A	SMF36CA	36	40	44.2	1	58.1	3.4	1
SMF40A	SMF40CA	39	44.4	49.1	1	64.5	23.1	1
SMF43A	SMF43CA	42	47.8	52.8	1	69.4	2.9	1
SMF45A	SMF45CA	45	50	55.3	1	72.7	2.7	1
SMF48A	SMF48CA	48	53.3	58.9	1	77.4	2.6	1
SMF51A	SMF51CA	51	56.7	62.7	1	82.4	2.4	1
SMF54A	SMF54CA	54	60	66.3	1	87.1	2.3	1
SMF58A	SMF58CA	58	64.4	71.2	1	93.6	2.1	1
SMF60A	SMF60CA	62	66.7	73.7	1	96.8	2	1
SMF64A	SMF64CA	66	71.1	78.6	1	103	1.9	1
SMF70A	SMF70CA	70	77.8	86	1	113	1.7	1
SMF75A	SMF75CA	75	83.3	92.1	1	121	1.8	1
SMF78A	SMF78CA	78	86.7	95.8	1	126	1.5	1
SMF85A	SMF85CA	85	94.4	104	1	137	1.4	1

Electrical Characteristics (T_a=25°C unless otherwise specified)

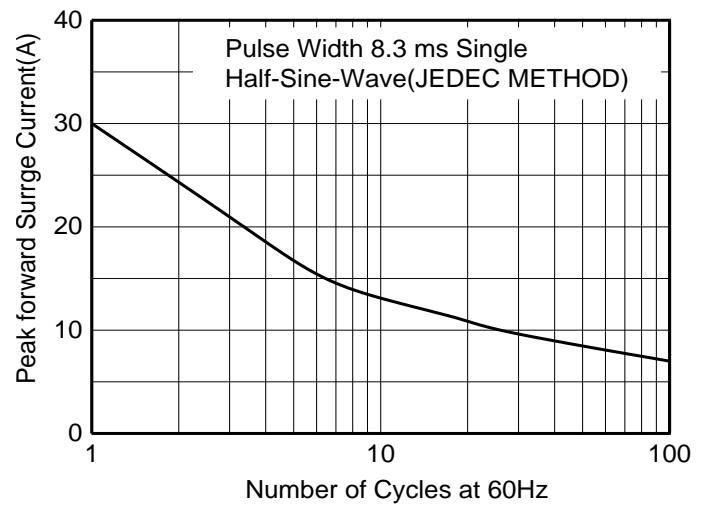
Part Number	Part Number	Reverse Stand-off Voltage VR (V)	Breakdown Voltage VBR (Volts) @ IT		Test Current IT (mA)	Maximum Clamping Voltage VC @ IPP (Volts)	Maximum Peak Pulse Current IPP (A)	Maximum Reverse Leakage IR @ VR (μA)
			MIN	MAX				
SMF90A	SMF90CA	90	100	111	1	146	1.3	1
SMF100A	SMF100CA	100	111	123	1	162	1.2	1
SMF110A	SMF110CA	110	122	135	1	177	1.1	1
SMF120A	SMF120CA	120	133	147	1	193	1	1
SMF130A	SMF130CA	130	144	159	1	209	0.9	1
SMF150A	SMF150CA	150	167	185	1	243	0.8	1
SMF160A	SMF160CA	160	178	197	1	259	0.7	1
SMF170A	SMF170CA	170	189	209	1	275	0.7	1
SMF180A	SMF180CA	180	201	222	1	292	0.7	1
SMF190A	SMF190CA	190	211	233	1	306	0.6	1
SMF200A	SMF200CA	200	224	247	1	324	0.6	1
SMF210A	SMF210CA	210	233	258	1	324	0.6	1
SMF220A	SMF220CA	220	246	272	1	356	0.5	1
SMF250A		250	279	309	1	405	0.5	1
SMF300A		300	335	371	1	486	0.4	1
SMF350A		350	391	432	1	567	0.3	1
SMF400A		400	447	494	1	648	0.3	1
SMF440A		440	492	543	1	713	0.3	1

Typical Characteristics

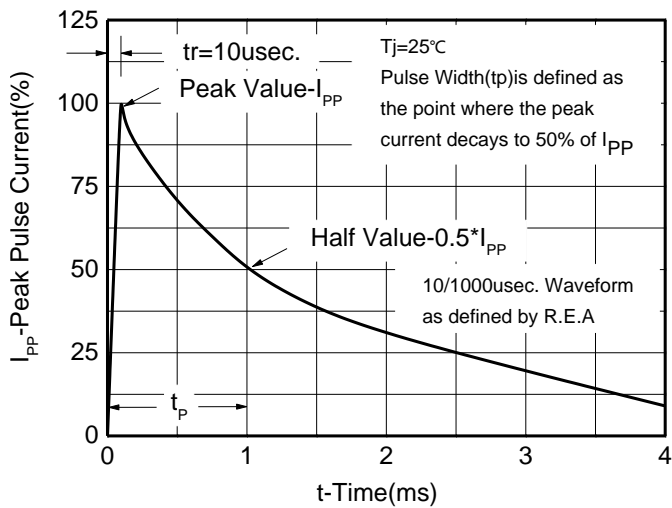
Pluse Derating Curve



Maximum Non-Repetitive Surge Current



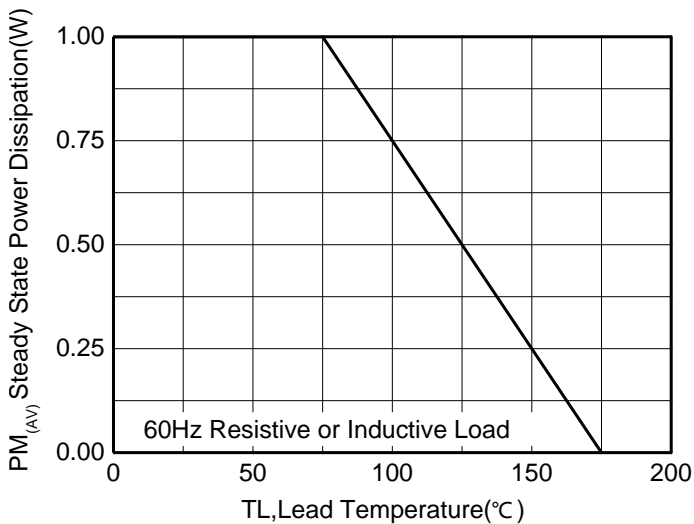
Pulse Waveform



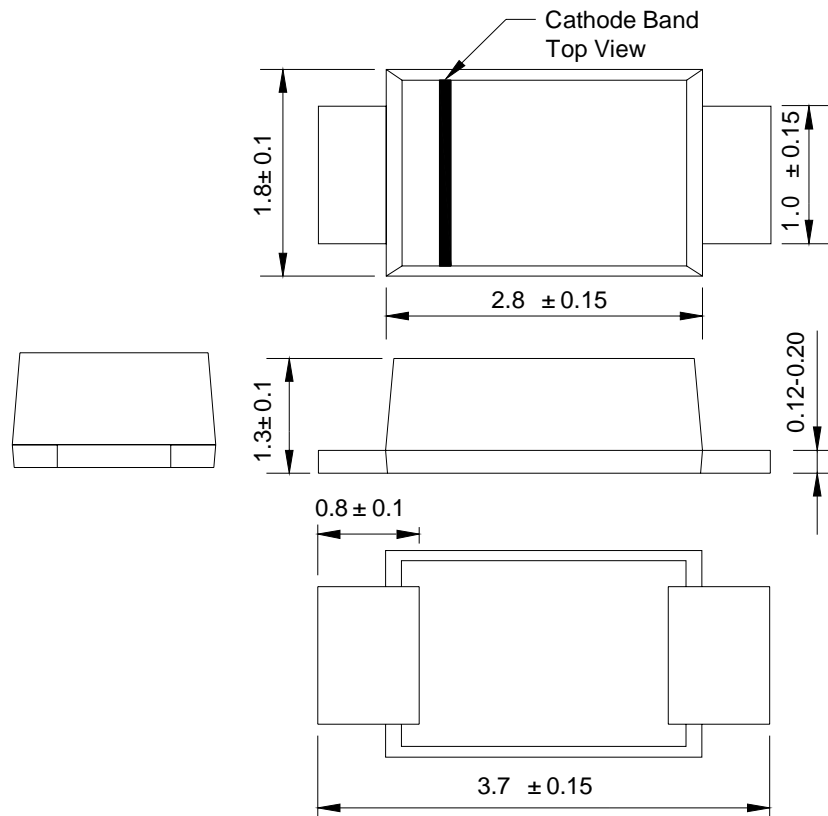
Peak Pulse Power Rating



Steady State Power Dissipation

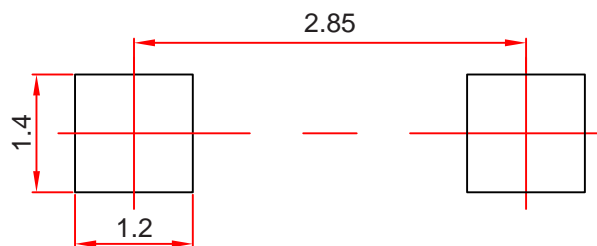


SOD-123FL Package Outline Dimensions



Dimensions in millimeters

SOD-123FL Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.05 mm.
3. The pad layout is for reference purposes only.