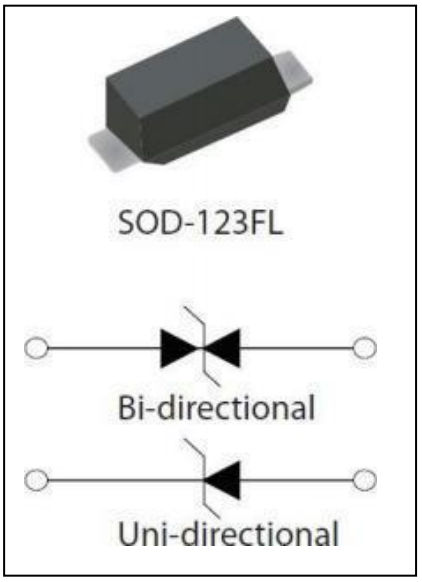
TRANSIENT VOLTAGE SUPPRESSOR
SMF SERIES

Features

- 200Watts peak pulse power (tp=10/ 1000μS)
- Low leakage.
- Quick response to surge voltage
- Excellent clamping capability.
- Uni and Bidirectional unit.
- Polarity: Color band denotes cathode end except bipolar



- Epoxy: UL 94V-0 rate flame retardant.
- Case: SOD- 123FL, molded plastic.
- Terminals: solderable per MIL-STD-750, method 2026.
- Polarity: Color band denotes cathode end except bipolar.
- RoHS Compliant

Maximum Ratings (@TA = 25°C, unless otherwise specified)

Parameter	Symbol	Value	Unit
Operating junction and storage temperature range	T_J/T_{STG}	-55 to +150	℃
Steady state power dissipation at T_L=75℃	$P_{M(AV)}$	0.4	W
Peak pulse power dissipation on 10/ 1000μs waveform	P_{PP}	200	W
Typical thermal resistance junction to lead	$R_{\theta JL}$	100	℃/W
Typical thermal resistance	$R_{\theta JA}$	220	℃/W

Notes： 1.Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum.

Electrical Characteristic (@TA = 25°C, unless otherwise specified)

Part Number		Breakdown Voltage V_{BR}@I_T			Maximum Reverse Leakage I_R[3] @ V_{RWM} (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current I_{PP}[2] (A)	Maximum Clamping Voltage Vc @ I_{PP} (V)
（Uni）	（Bi）	Min(V)	Max (V)	I_T[1](mA)				
SMF5.0A	SMF5.0CA	6.40	7.07	10	800.0	5.0	21.7	9.2
SMF6.0A	SMF6.0CA	6.67	7.37	10	800.0	6.0	19.4	10.3
SMF6.5A	SMF6.5CA	7.22	7.98	10	500.0	6.5	17.9	11.2
SMF7.0A	SMF7.0CA	7.78	8.60	10	200.0	7.0	16.7	12.0
SMF7.5A	SMF7.5CA	8.33	9.21	1	100.0	7.5	15.5	12.9
SMF8.0A	SMF8.0CA	8.89	9.83	1	50.0	8.0	14.7	13.6
SMF8.5A	SMF8.5CA	9.44	10.40	1	20.0	8.5	13.9	14.4
SMF9.0A	SMF9.0CA	10.00	11.10	1	10.0	9.0	13	15.4
SMF10A	SMF10CA	11.10	12.30	1	5	10.0	11.8	17.0
SMF11A	SMF11CA	12.20	13.50	1	1.0	11.0	11	18.2
SMF12A	SMF12CA	13.30	14.70	1	1.0	12.0	10.1	19.9
SMF13A	SMF13CA	14.40	15.90	1	1.0	13.0	9.3	21.5
SMF14A	SMF14CA	15.60	17.20	1	1.0	14.0	8.6	23.2
SMF15A	SMF15CA	16.70	18.50	1	1.0	15.0	8.2	24.4
SMF16A	SMF16CA	17.80	19.70	1	1.0	16.0	7.7	26.0
SMF17A	SMF17CA	18.90	20.90	1	1.0	17.0	7.3	27.6
SMF18A	SMF18CA	20.00	22.10	1	1.0	18.0	6.9	29.2
SMF19A	SMF19CA	21.10	23.30	1	1.0	19.0	6.5	30.6
SMF20A	SMF20CA	22.20	24.50	1	1.0	20.0	6.2	32.4
SMF22A	SMF22CA	24.40	26.90	1	1.0	22.0	5.6	35.5
SMF24A	SMF24CA	26.70	29.50	1	1.0	24.0	5.1	38.9
SMF26A	SMF26CA	28.90	31.90	1	1.0	26.0	4.8	42.1
SMF28A	SMF28CA	31.10	34.40	1	1.0	28.0	4.4	45.4
SMF30A	SMF30CA	33.30	36.80	1	1.0	30.0	4.1	48.4
SMF33A	SMF33CA	36.70	40.60	1	1.0	33.0	3.8	53.3
SMF36A	SMF36CA	40.00	44.20	1	1.0	36.0	3.4	58.1
SMF40A	SMF40CA	44.40	49.10	1	1.0	40.0	3.1	64.5
SMF43A	SMF43CA	47.80	52.80	1	1.0	43.0	2.9	69.4
SMF45A	SMF45CA	50.00	55.30	1	1.0	45.0	2.8	72.7
SMF48A	SMF48CA	53.30	58.90	1	1.0	48.0	2.6	77.4
SMF51A	SMF51CA	56.70	62.70	1	1.0	51.0	2.4	82.4
SMF54A	SMF54CA	60.00	66.30	1	1.0	54.0	2.3	87.1
SMF58A	SMF58CA	64.40	71.20	1	1.0	58.0	2.1	93.6
SMF60A	SMF60CA	66.70	73.70	1	1.0	60.0	1.86	96.8
SMF64A	SMF64CA	71.10	78.60	1	1.0	64.0	1.75	103.0
SMF70A	SMF70CA	77.80	86.00	1	1.0	70.0	1.59	113.0
SMF75A	SMF75CA	83.30	92.10	1	1.0	75.0	1.49	121.0
SMF78A	SMF78CA	86.70	95.80	1	1.0	78.0	1.43	126.0
SMF85A	SMF85CA	94.40	104.00	1	1.0	85.0	1.31	137.0
SMF90A	SMF90CA	100.00	111.00	1	1.0	90.0	1.23	146.0

Part Number		Breakdown Voltage V_{BR}@I_T			Maximum Reverse Leakage I_R[3] @ V_{RWM} (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current I_{PP}[2] (A)	Maximum Clamping Voltage Vc @ I_{PP} (V)
（Uni）	（Bi）	Min(V)	Max (V)	I_T[1](mA)				
SMF100A	SMF100CA	111.00	123.00	1	1.0	100.0	1.11	162.0
SMF110A	SMF110CA	122.00	135.00	1	1.0	110.0	1.02	177.0
SMF120A	SMF120CA	133.00	147.00	1	1.0	120.0	0.93	193.0
SMF130A	SMF130CA	144.00	159.00	1	1.0	130.0	0.86	209.0
SMF150A	SMF150CA	167.00	185.00	1	1.0	150.0	0.74	243.0
SMF160A	SMF160CA	178.00	197.00	1	1.0	160.0	0.69	259.0
SMF170A	SMF170CA	189.00	209.00	1	1.0	170.0	0.65	275.0

Notes:

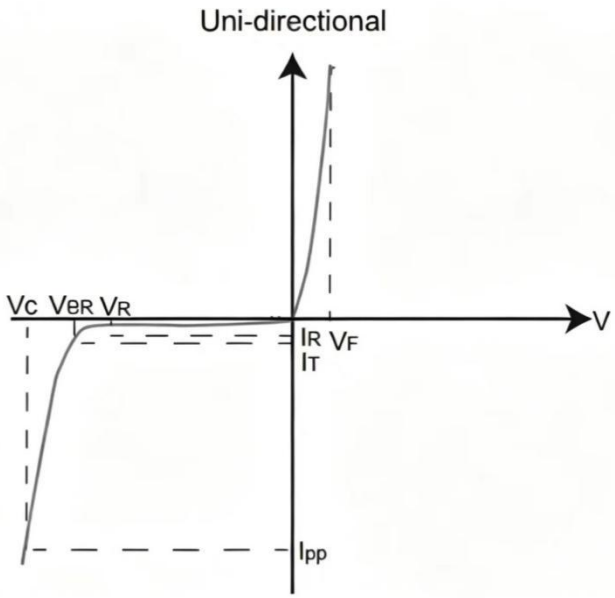
1. VBR measured with IT current pulse = 10 ~ 15ms

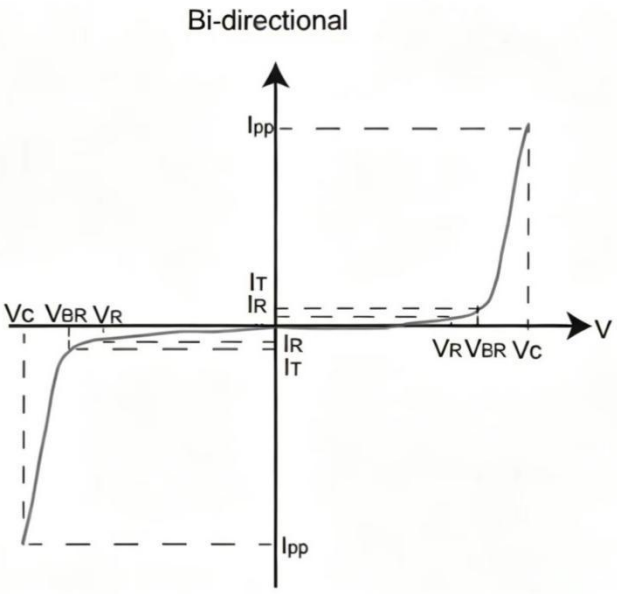
2.Per 10 x 1000μs waveform

3.For bidirectional type having VR of 10 volts and less, the IR limit is double

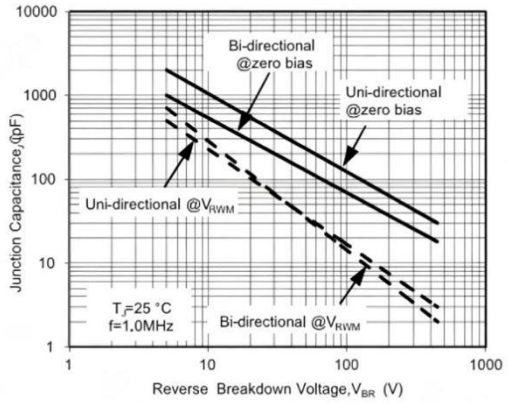
V-I Curve

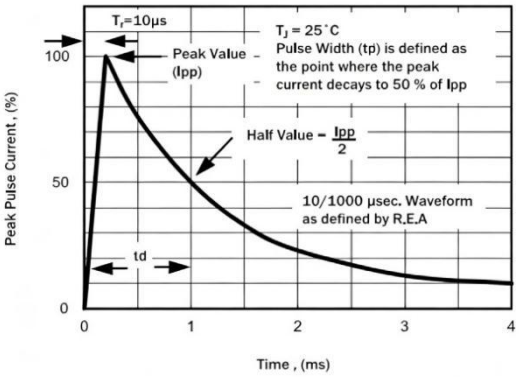
Typical

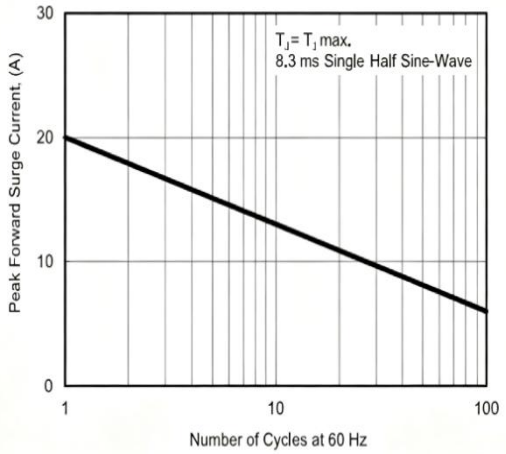


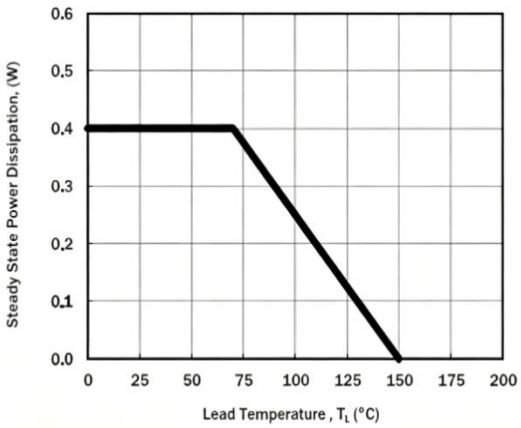


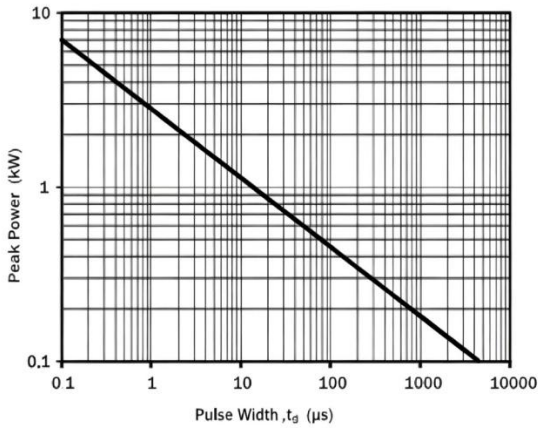
Performance Characteristics （T_A=25°C unless otherwise Specified）

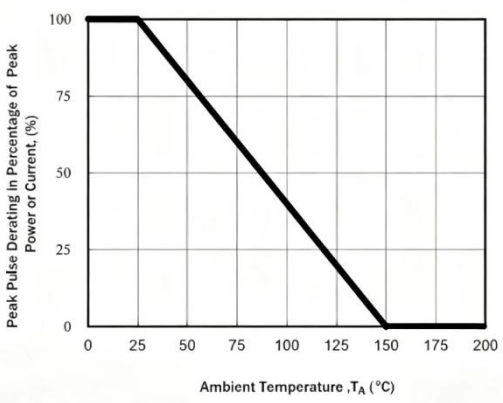




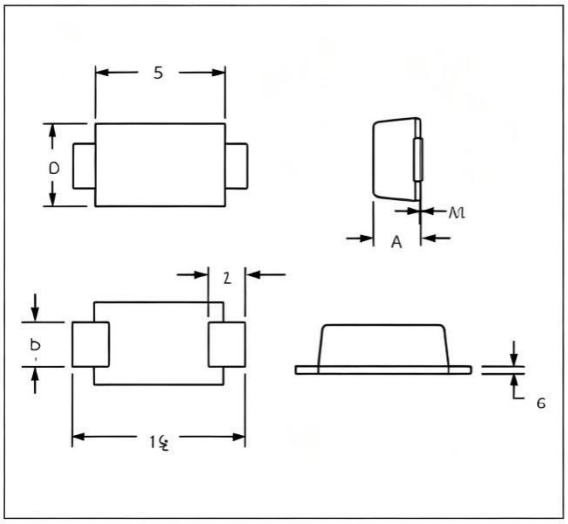




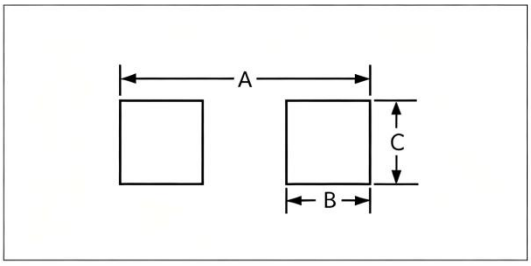




Product Dimensions And Suggested PAD Layout



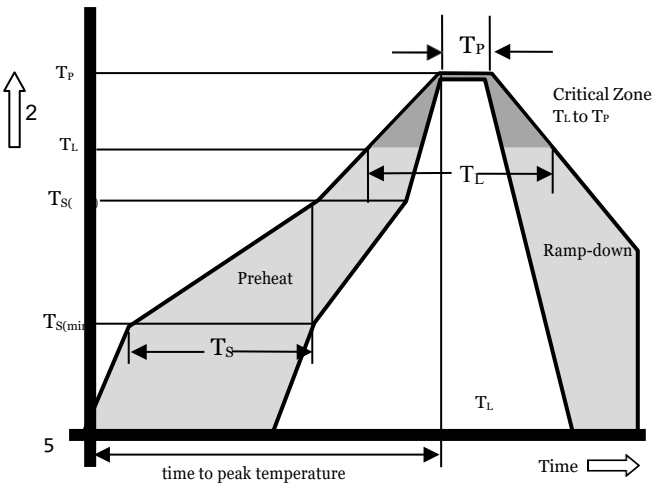
Item	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.95	1.45	0.037	0.057
M	0.00	0.10	0.000	0.004
b	0.70	1.20	0.028	0.047
C	0.05	0.30	0.002	0.012
D	1.50	2.00	0.059	0.079
E	2.50	2.90	0.098	0.114
L	0.35	0.90	0.014	0.035
H_f	3.40	3.90	0.134	0.154



Item	Millimaters	Inches
A	330	0.165
B	240	0.036
C	1.22	0.048

Reflow Profile

Reflow Condition		Pb-Free Assembly
Pre Heat	Temperature Min.	+150°C
	Temperature Max.	+200°C
	Time(Min to Max)	60 – 180 seconds
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)	217°C
	- Temperature (T_L)	60 – 150 seconds
Peak Temp (T_P)		260+0/-5 °C
Time within 5°C of actual Peak Temp (T_P)		8-15 seconds
Ramp-down Rate		6°C/s max
Time 25°C to peak Temp (T_P)		8 min max.
Do not exceed		260°C



Part Number System

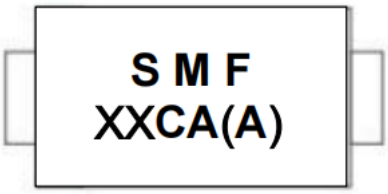
SMF XXX C A(1) (2) (3) (4)

(1) Series Code

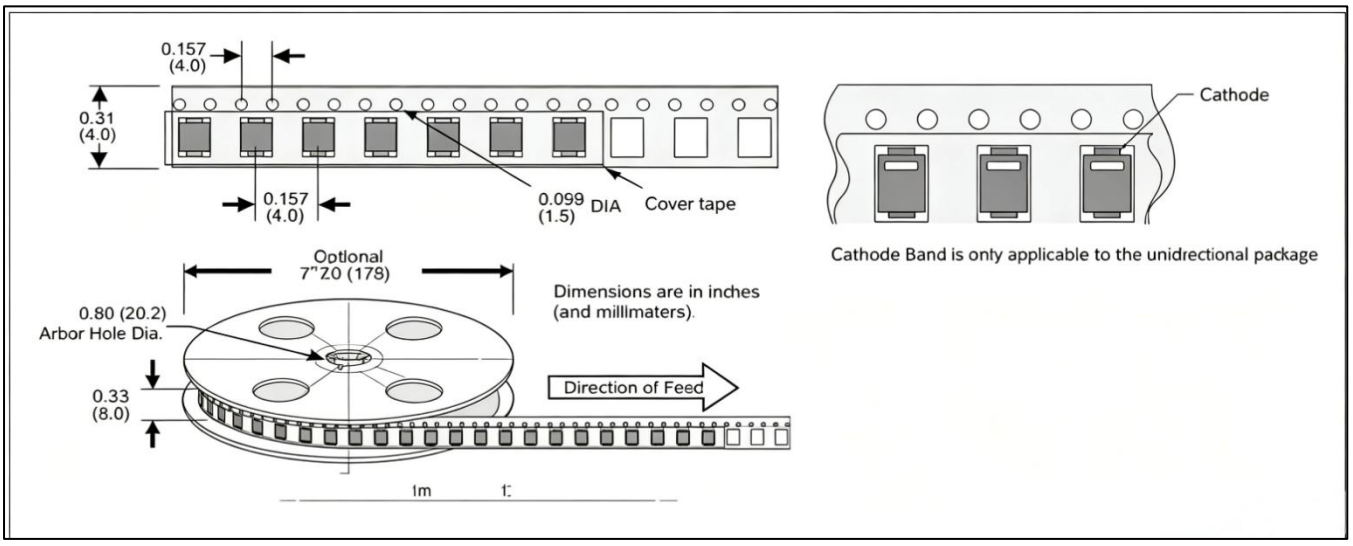
(2) Reverse Stand-Off Voltage (3)BI-directional

(4)Suffix "A" denotes 5% tolerance devices

Marking



Reel Taping Specification



Ordering information

Package	Base qty	Reel Size	Delivery mode
SOD123-FL	3000 PCS	7inch	Tape and reel

NOTICE

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