

DESCRIPTION:

TVS diodes can be used in a wide range of applications which like consumer electronic products, automotive industries, munitions, telecommunications, aerospace industries, and intelligent control systems.



SOD-123FL



Bi-directional



Uni-direction

FEATURES:

- ✧ Glass passivated or planar junction
- ✧ Excellent clamping capability
- ✧ Repetition rate (duty cycle): 0.01%
- ✧ Typical I_R less than $1\mu A$ above 10V.
- ✧ Low profile package and low inductance
- ✧ 200W Peak Pulse power capability at $10 \times 1000\mu s$ waveform.
- ✧ Fast response time: typically less than 1.0ps from 0V to V_{BR} min.
- ✧ High temperature soldering: $260^\circ C/10s$ at terminals.
- ✧ Plastic package has Underwriters Laboratory Flammability 94V-0.
- ✧ For surface mounted applications in order to optimize board space

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ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ C$, RH=45%-75%, unless otherwise noted)

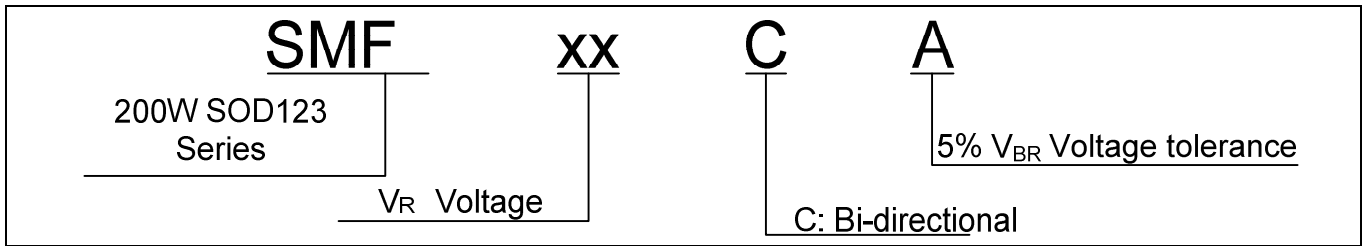
Parameter	Symbol	Value	Unit
Storage temperature range	T_{stg}	-55 to +125	$^\circ C$
Operating junction temperature range	T_j	-55 to +125	$^\circ C$
Steady state power dissipation at $T_L=75^\circ C$	$P_{M(AV)}$	2.8	W
Peak pulse power dissipation on 10/1000 μs waveform	P_{PP}	200	W
Maximum Instantaneous Forward Voltage at 20A for Unidirectional	V_F	5.0	V



ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$)

Part Number		V_R	$I_R@V_R$	$V_{BR}@I_T$		I_T	$V_C@I_{PP}$	$I_{PP}^{\textcircled{1}}$
Uni-Polar	Bi-Polar	V	μA	min(V)	max(V)	mA	max(V)	A
SMF5.0A	SMF5.0CA	5.0	150	6.40	7.00	10	9.2	21.7
SMF6.0A	SMF6.0CA	6.0	100	6.67	7.37	10	10.3	19.4
SMF6.5A	SMF6.5CA	6.5	100	7.22	7.98	10	11.2	17.9
SMF7.0A	SMF7.0CA	7.0	50	7.78	8.60	10	12.0	16.7
SMF7.5A	SMF7.5CA	7.5	50	8.33	9.21	1	12.9	15.5
SMF8.0A	SMF8.0CA	8.0	20	8.89	9.83	1	13.6	14.7
SMF9.0A	SMF9.0CA	9.0	5	10.00	11.10	1	15.4	13.0
SMF10A	SMF10CA	10.0	2	11.10	12.30	1	17.0	11.8
SMF11A	SMF11CA	11.0	1	12.20	13.50	1	18.2	11.0
SMF12A	SMF12CA	12.0	1	13.30	14.70	1	19.9	10.1
SMF13A	SMF13CA	13.0	1	14.40	15.90	1	21.5	9.3
SMF14A	SMF14CA	14.0	1	15.60	17.20	1	23.2	8.6
SMF15A	SMF15CA	15.0	1	16.70	18.50	1	24.4	8.2
SMF18A	SMF18CA	18.0	1	20.00	22.10	1	29.2	6.8
SMF20A	SMF20CA	20.0	1	22.20	24.50	1	32.4	6.2
SMF22A	SMF22CA	22.0	1	24.40	26.90	1	35.5	5.6
SMF24A	SMF24CA	24.0	1	26.70	29.50	1	38.9	5.1
SMF26A	SMF26CA	26.0	1	28.90	31.90	1	42.1	4.8
SMF28A	SMF28CA	28.0	1	31.10	34.40	1	45.4	4.4
SMF30A	SMF30CA	30.0	1	33.30	36.80	1	48.4	4.1
SMF33A	SMF33CA	33.0	1	36.70	40.60	1	53.3	3.8
SMF36A	SMF36CA	36.0	1	40.00	44.20	1	58.1	3.4
SMF40A	SMF40CA	40.0	1	44.40	49.10	1	64.5	3.1
SMF43A	SMF43CA	43.0	1	47.80	52.80	1	69.4	2.88
SMF45A	SMF45CA	45.0	1	50.00	55.30	1	72.7	2.75
A 07 B +	A 07 B = +	7 B & ' ; G G & ; B 6 & ' >> 7 , 3						
A 0; '+	A 0; '= +	; ' & ' ; 3 > & 3, > & ' B, 7 , 7						
A 0; B +	A 0; B = +	; B & ' 3 7 7 & > ' , & ' 6 G 3 , ' >> 7 , 3						

ORDERING INFORMATION



RATINGS AND V-I CHARACTERISTICS CURVES ($T_A=25^\circ\text{C}$, unless otherwise noted)

FIG.1: V- I curve characteristics (Uni-directional)

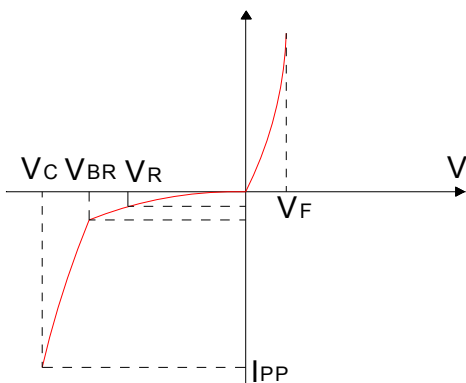


FIG.2: V- I curve characteristics (Bi-directional)

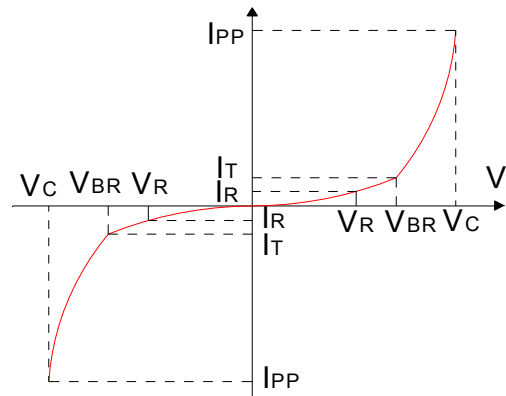


FIG.3: Pulse waveform

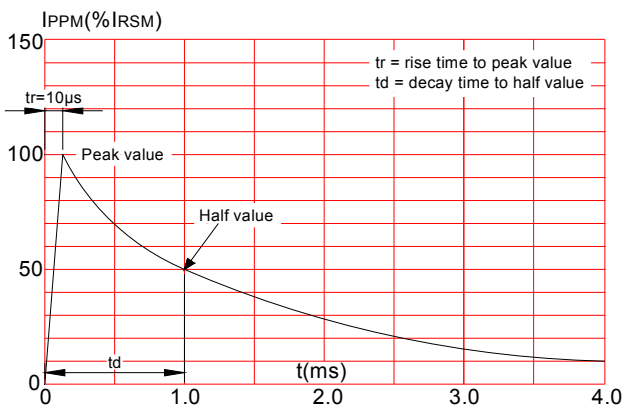
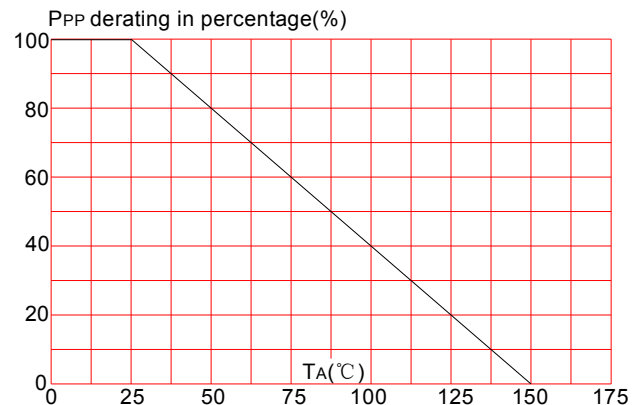
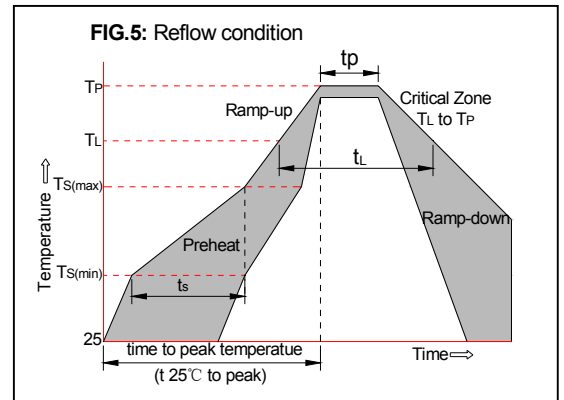


FIG.4: Pulse derating curve

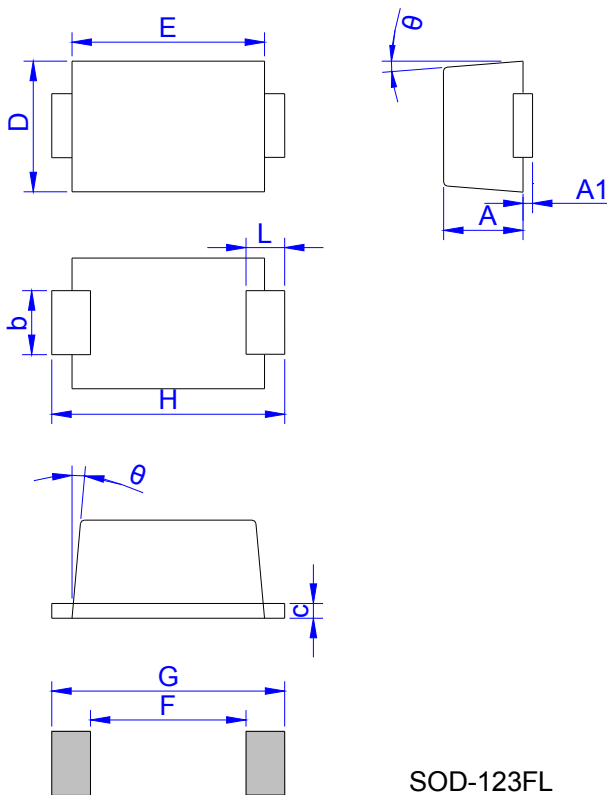


SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see FIG.5)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260°C



PACKAGE MECHANICAL DATA



SOD-123FL

Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.40	0.035	0.055
A1	0	0.10	0	0.004
b	0.70	1.10	0.028	0.043
c	0.10	0.25	0.004	0.010
D	1.50	1.95	0.059	0.077
E	2.50	2.90	0.098	0.114
F	2.36	-	0.093	-
G	4.19	-	0.165	-
H	3.40	3.90	0.134	0.154
L	0.35	0.95	0.014	0.037
θ	0	8°	0	8°

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PACKAGE INFORMATION

OUTLINE	PACKAGE TYPE	QUANTITY	DESCRIPTION
TAPING	SOD123-FL	3,000	7 inch Reel Pack
TAPING	SOD123-FL	10,000	13 inch Reel Pack