

DESCRIPTION:

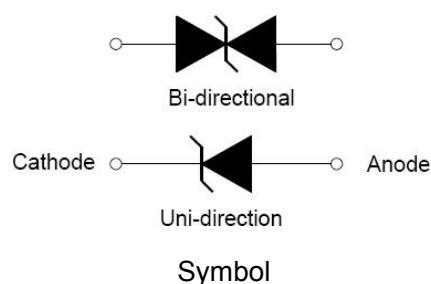
TVS diodes can be used in a wide range of applications which like consumer electronic products, automotive industries, munitions, telecommunications, aerospace industries, and intelligent control systems.



SOD-123F

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.



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 +150	$^\circ C$
Operating junction temperature range	T_j	-55 to +150	$^\circ C$
Steady state power dissipation at $T_L=75^\circ C$	$P_{M(AV)}$	2.0	W
Peak pulse power dissipation on 10/1000 μs waveform	P_{PP}	200	W
Maximum Instantaneous Forward Voltage at 30A for Unidirectional	V_F	5.0	V

ELECTRICAL CHARACTERISTICS (T_A=25°C)

Part Number		V _R	I _R @ V _R	V _{BR} @I _T		I _T	V _C @I _{PP} ①	I _{PP} ①
Uni-Polar	Bi-Polar	V	μA	min(V)	max(V)	mA	max(V) _a	A
CCS5.0A	CCS5.0CA	5.0	150	6.40	7.00	10	9.2	21.7
CCS6.0A	CCS6.0CA	6.0	100	6.67	7.37	10	10.3	19.4
CCS6.5A	CCS6.5CA	6.5	100	7.22	7.98	10	11.2	17.9
CCS7.0A	CCS7.0CA	7.0	50	7.78	8.60	10	12.0	16.7
CCS7.5A	CCS7.5CA	7.5	50	8.33	9.21	1	12.9	15.5
CCS8.0A	CCS8.0CA	8.0	20	8.89	9.83	1	13.6	14.7
CCS9.0A	CCS9.0CA	9.0	5	10.00	11.10	1	15.4	13.0
CCS10A	CCS10CA	10.0	2	11.10	12.30	1	17.0	11.8
CCS11A	CCS11CA	11.0	1	12.20	13.50	1	18.2	11.0
CCS12A	CCS12CA	12.0	1	13.30	14.70	1	19.9	10.1
CCS13A	CCS13CA	13.0	1	14.40	15.90	1	21.5	9.3
CCS14A	CCS14CA	14.0	1	15.60	17.20	1	23.2	8.6
CCS15A	CCS15CA	15.0	1	16.70	18.50	1	24.4	8.2
CCS18A	CCS18CA	18.0	1	20.00	22.10	1	29.2	6.8
CCS20A	CCS20CA	20.0	1	22.20	24.50	1	32.4	6.2
CCS22A	CCS22CA	22.0	1	24.40	26.90	1	35.5	5.6
CCS24A	CCS24CA	24.0	1	26.70	29.50	1	38.9	5.1
CCS26A	CCS26CA	26.0	1	28.90	31.90	1	42.1	4.8
CCS28A	CCS28CA	28.0	1	31.10	34.40	1	45.4	4.4
CCS30A	CCS30CA	30.0	1	33.30	36.80	1	48.4	4.1
CCS33A	CCS33CA	33.0	1	36.70	40.60	1	53.3	3.8
CCS36A	CCS36CA	36.0	1	40.00	44.20	1	58.1	3.4
CCS48A	CCS48CA	48.0	1	53.30	58.90	1	77.4	2.6
CCS51A	CCS51CA	51.0	1	56.70	62.70	1	82.4	2.4
CCS58A	CCS58CA	58.0	1	64.40	71.20	1	93.6	2.1

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

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

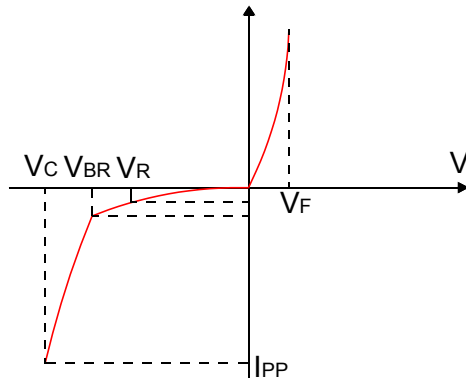


FIG.2: V- I curve characteristics (Bi-directional)

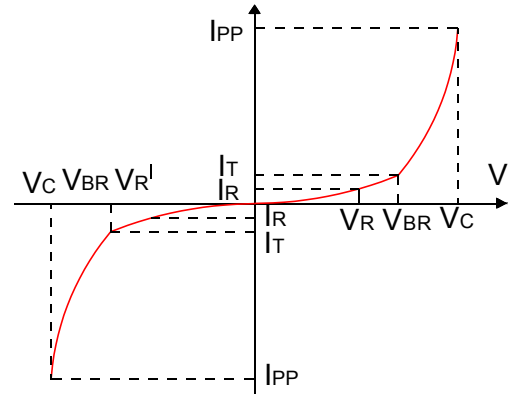


FIG.3: Pulse waveform

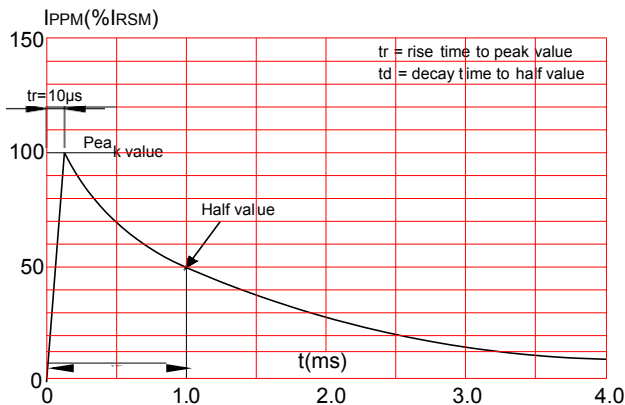
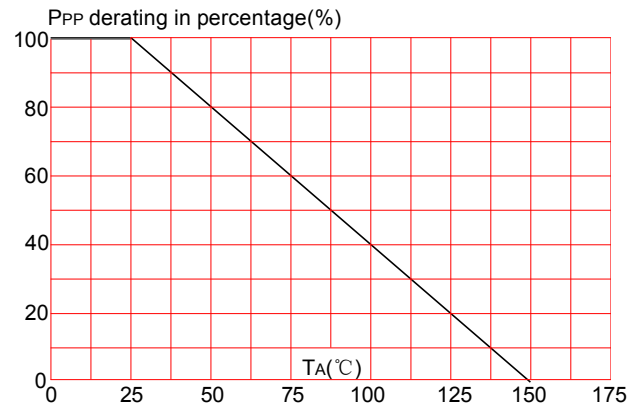
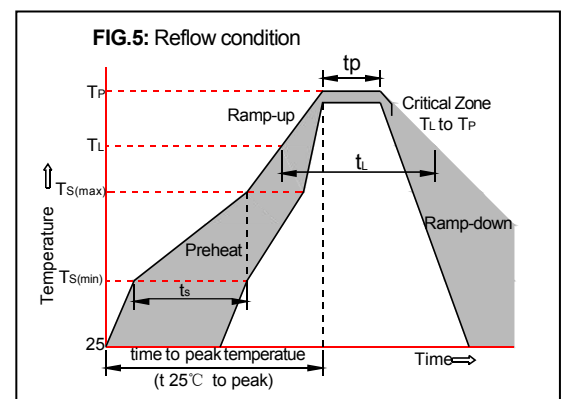


FIG.4: Pulse derating curve

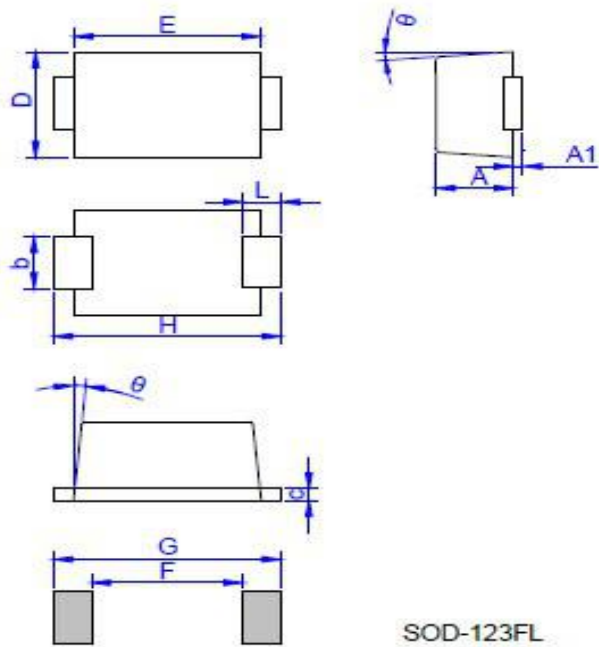


SOLDERING PARAMETERS

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



Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.00	0.035	0.039
A1	0	0.10	0	0.004
b	0.70	1.10	0.028	0.043
c	0.10	0.20	0.004	0.008
D	1.50	1.80	0.059	0.071
E	2.50	2.90	0.098	0.114
F	2.38	-	0.093	-
G	4.19	-	0.165	-
H	3.40	3.80	0.134	0.150
L	0.65	0.95	0.022	0.037
θ	0	8°	0	8°

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