

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.

Features

- For surface mounted applications
- Excellent clamping capability
- 4500 W peak pulse power capability with a 8/20 μ s Waveform.
- Low profile package and low inductance
- Typical I_R less than 1uA above 10V
- Fast response time: typically less than 1.0ps from 0V to V_{BR} min.

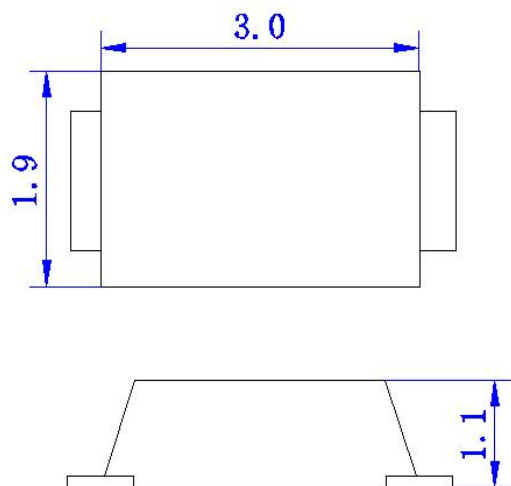
Applications

- computer system
- domestic appliance
- video input

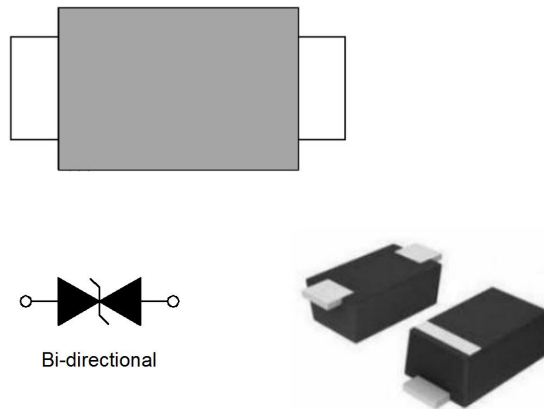
Mechanical Characteristics

- Package: SOD123FL
 - Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
 - Moisture Sensitivity: Meet MSL 1
 - Terminal: Solder plated, solderable per MIL-STD-750, Method 2026
 - Polarity: Color band denotes cathode except bi-directional models
- Weight: 0.07g(Approximate)

Dimensions & Symbol (Unit: mm Max)



Marking Information



Electrical Characteristics (T=25°C)

V_R	$I_R@V_R$	$V_{BR}@I_T$		I_T	$V_C@I_{PP}$	$I_{PP}^{①}$	$Co^{②}$
V	μ A	min(V)	max(V)	mA	max(V)	A	Max(pF)
7	50	7.7	8.6	10	17	220	1000

Notes:

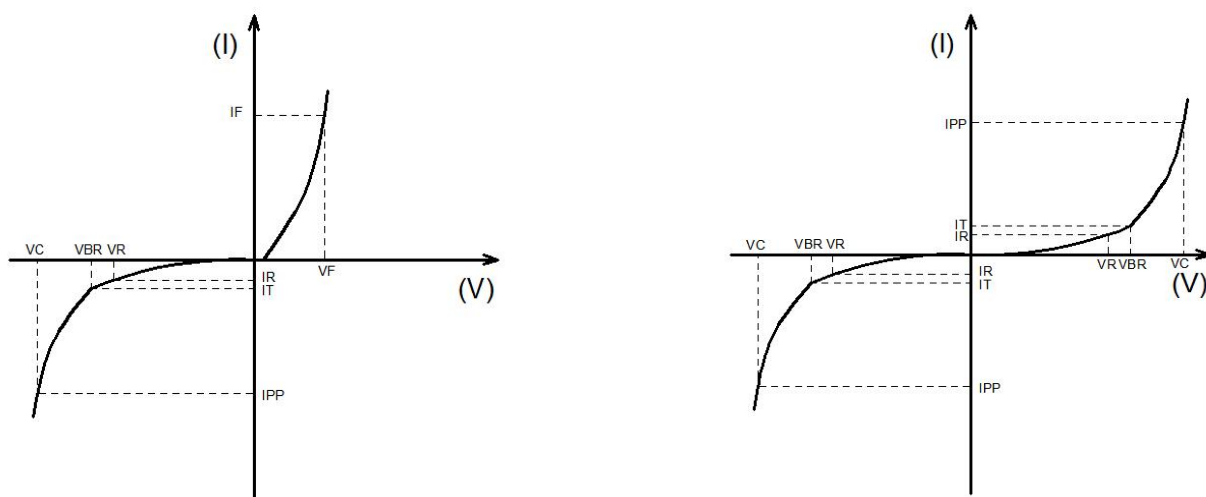
- ① Surge waveform: 8/20 μ s
 - ② Off-state capacitance (Co) is measured at 1 MHz with a 0 V bias and is typical value
- V_R : Stand-off Voltage -- Maximum voltage that can be applied
- V_{BR} : Breakdown Voltage
- V_C : Clamping Voltage -- Peak voltage measured across the suppressor at a specified I_{pp}
- I_R : Reverse Leakage Current

Absolute Maximum Ratings($T=25^{\circ}\text{C}$, $\text{RH}=45\%-75\%$, unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 8/20 μs waveform	P_{PP}	4500	W
Steady state power dissipation at $T_L=75^{\circ}\text{C}$	$P_{M(AV)}$	1.0	W
Operating junction temperature range	T_j	-55 to +125	$^{\circ}\text{C}$
Storage temperature range	T_{stg}	-55 to +150	$^{\circ}\text{C}$

Ratings And V-I Characteristics Curves ($T=25^{\circ}\text{C}$, unless otherwise noted)

FIG1: V-I cure characteristics



Symbol	Parameter
I_F	Mean Forward Current
V_F	Maximum Forward Voltage @ I_F
V_R	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_R
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}

Typical Characteristics

FIG2: Pulse Derating Curve

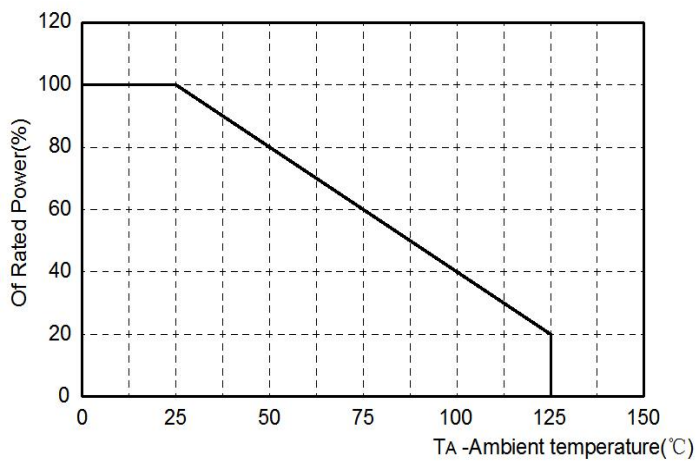


FIG3: Pulse Waveform

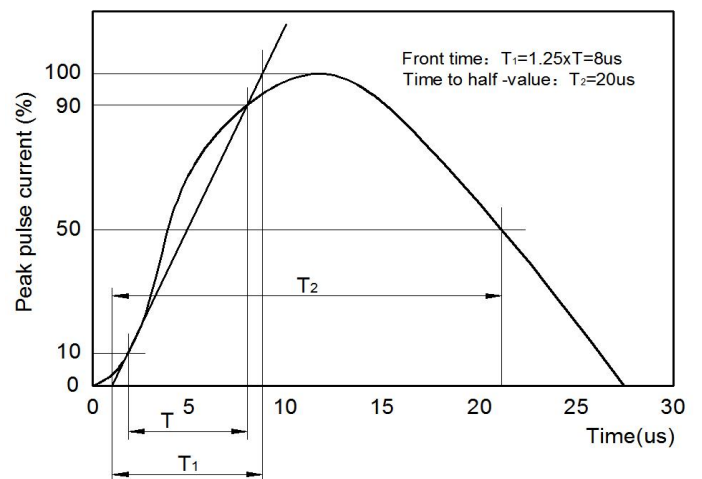


FIG4: Peak Pulse Power Rating Curve

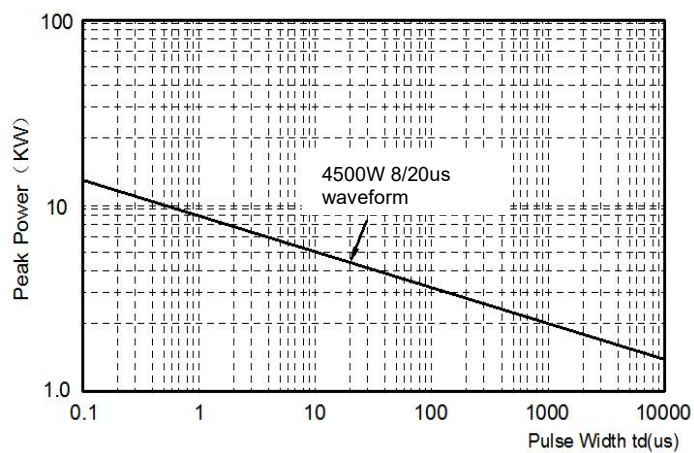
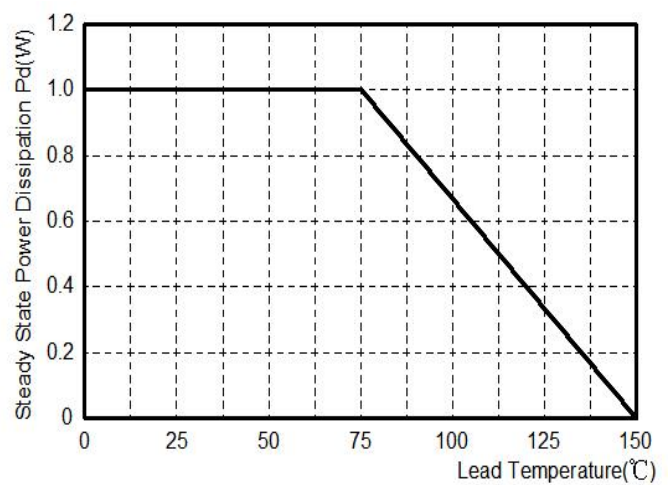
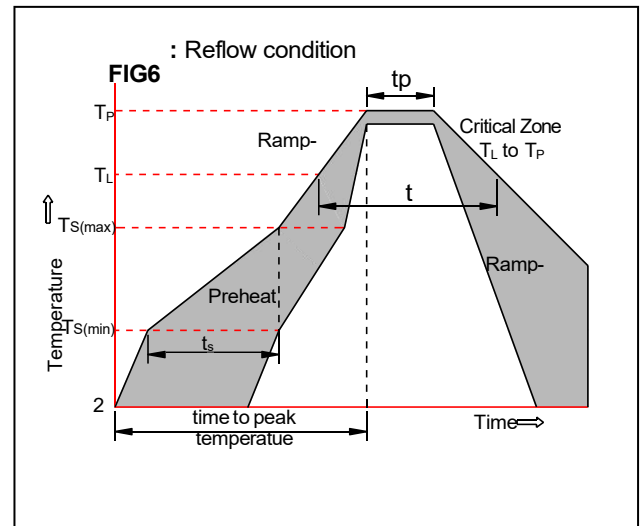


FIG5: Steady State Power Dissipation

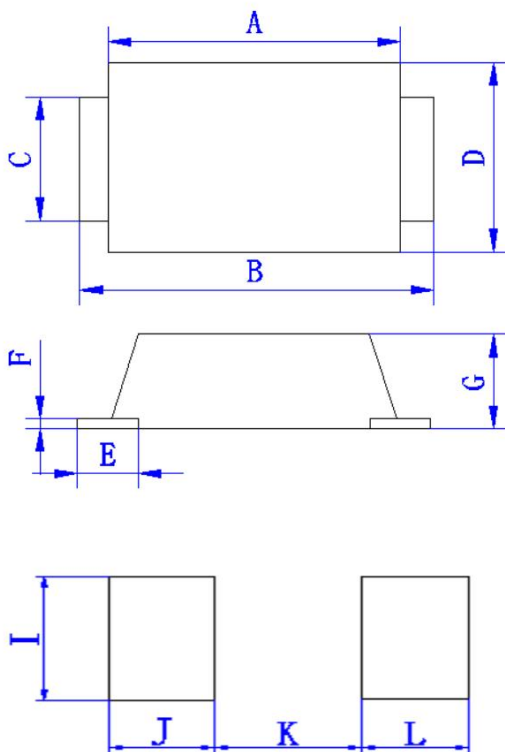


Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	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 & Suggested Land Pattern



Ref.(mm)	Millimeters	
	Min.	Max.
A	2.5	3.0
B	3.4	4.0
C	0.7	1.1
D	1.5	1.9
E	0.45	0.95
F	0.05	0.26
G	0.9	1.1
I	1.2	
J	0.85	
K		2.3
L	0.85	