

### 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  $\mu$ s Waveform.
- Low profile package and low inductance
- Typical IR less than 1uA above 10V
- Fast response time: typically less than 1.0ps from 0V to  $V_{BR}$  min.

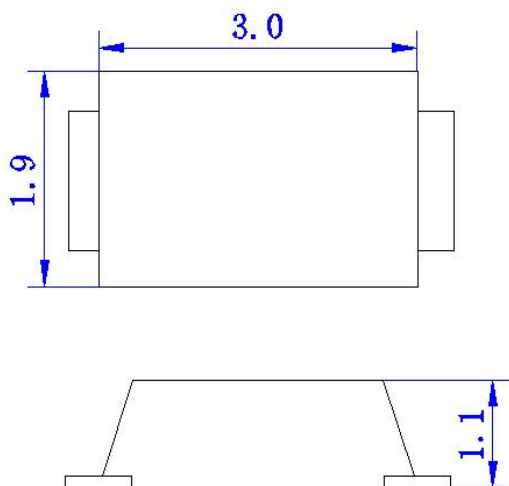
### Applications

- computer system
- domestic appliance
- video input

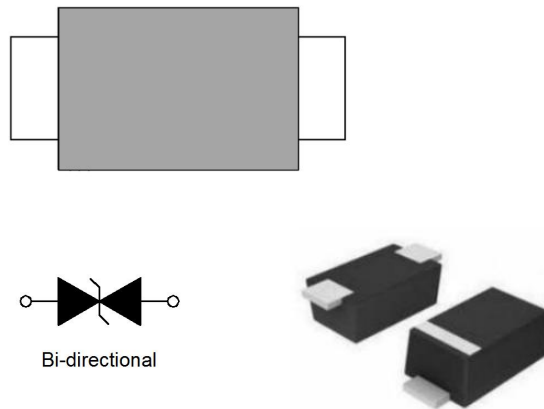
### Mechanical Characteristics

- 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: 0.07gApproximate)

### Dimensions & Symbol (Unit: mm Max)



### Marking Information



### Electrical Characteristics (T=25°C)

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

#### Notes:

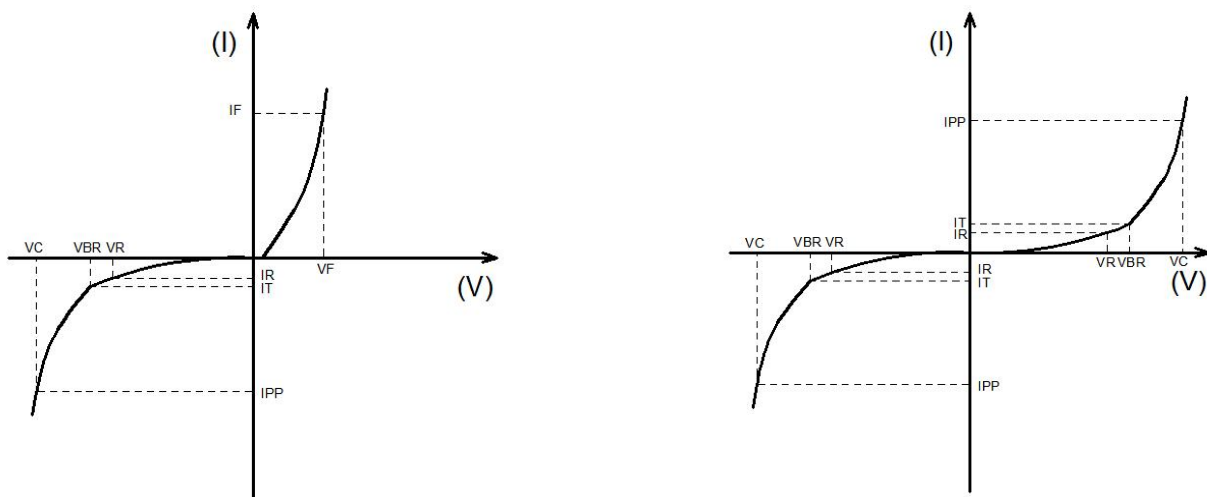
- ① Surge waveform: 8/20 $\mu$ s
  - ② Off-state capacitance ( $C_o$ ) is measured at 1 MHz with a 0 V bias and is typical value
- $V_R$  : Stand-off Voltage -- Maximum voltage that can be applied
- $V_{BR}$ : Breakdown Voltage
- $V_C$ : Clamping Voltage -- Peak voltage measured across the suppressor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

Absolute Maximum Ratings(T=25°C, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 8/20μs 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	°C
Storage temperature range	$T_{stg}$	-55 to +150	°C

Ratings And V-I Characteristics Curves (T=25°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

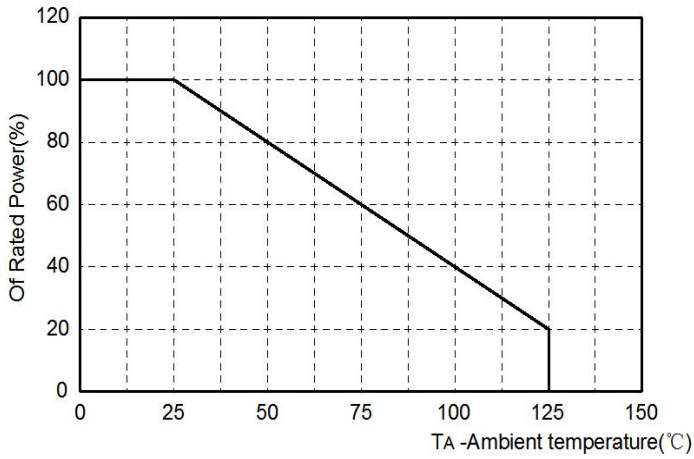


FIG3: Pulse Waveform

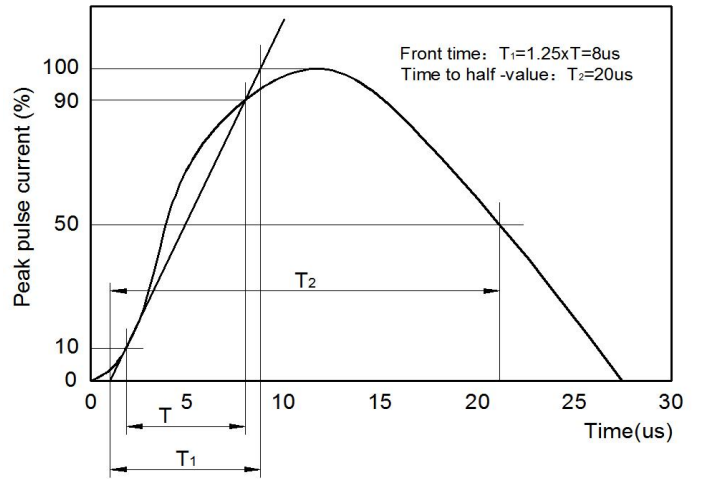


FIG4: Peak Pulse Power Rating Curve

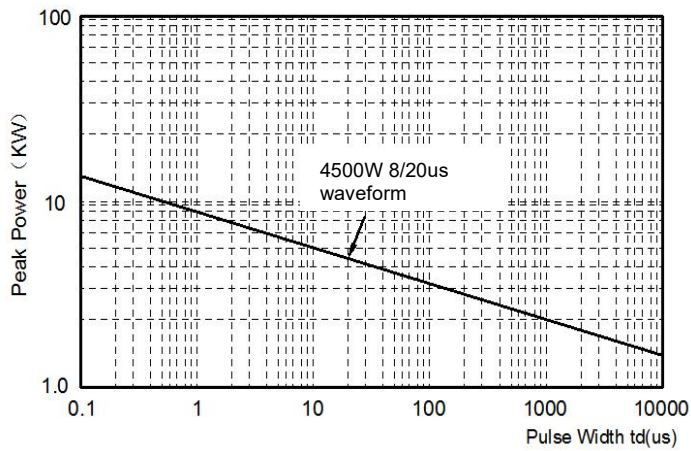
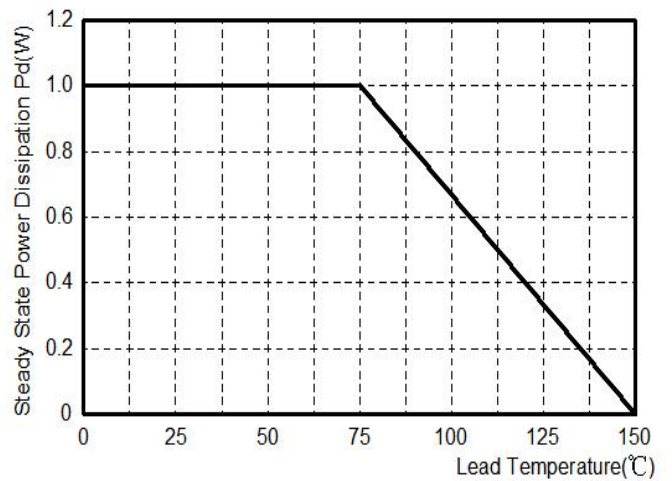
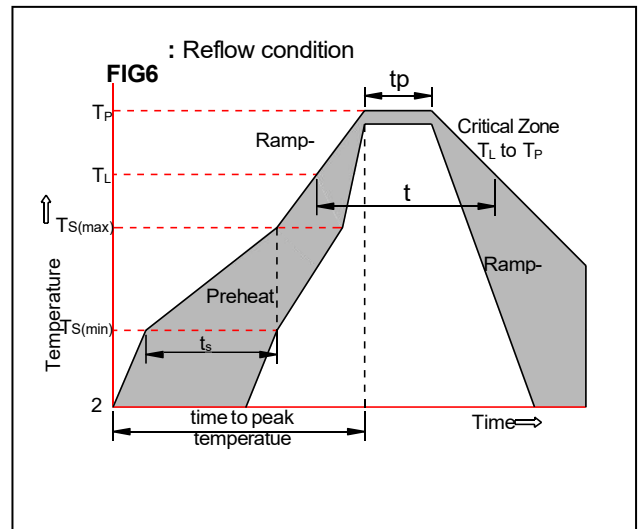


FIG5: Steady State Power Dissipation

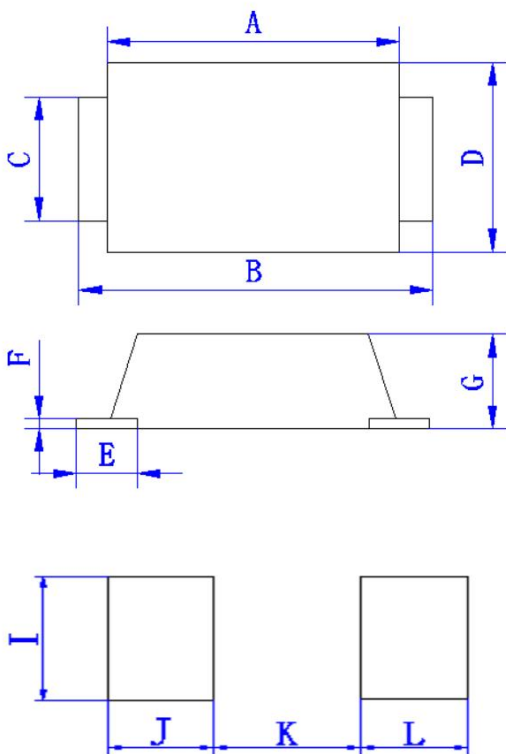


### Soldering parameters

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	