

## Description

The XT1DF7VB TVS diode is designed to replace multilayer varistors (MLVs) in portable applications such as cell phones, notebooks, and PDA's. It offers superior electrical characteristics such as low clamping voltage, low leakage current and high surge capability. It is designed to protect sensitive electronic components which are connected to power lines, from over-stress caused by ESD (Electrostatic Discharge), EFT (Electrical Fast Transients) and Lightning.

The XT1DF7VB is in a SOD-123FL package and will protect one bidirectional line. It may be used to provide ESD protection up to  $\pm 30\text{kV}$  (Contact and air discharge) according to IEC61000-4-2, and withstand peak pulse current up to 200A (8/20 $\mu\text{s}$ ) according to IEC61000-4-5.

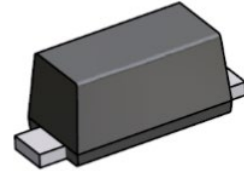
## Features

- ◆ Working voltage: 7V
- ◆ SOD-123FL Package
- ◆ 6400 Watts peak pulse power ( $t_p=8/20\mu\text{s}$ )
- ◆ Transient protection for data lines to  
IEC 61000-4-2 (ESD)  $\pm 30\text{kV}$  (air),  
 $\pm 30\text{kV}$  (contact)  
IEC 61000-4-5 (Surge) 200A (8/20 $\mu\text{s}$ )  
IEC61000-4-4(EFT)40A(5/50ns)
- ◆ Low leakage current
- ◆ Low clamping voltage
- ◆ Solid-state silicon-avalanche technology

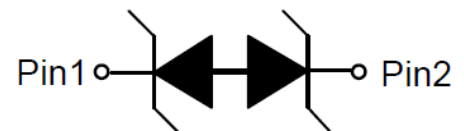
## Applications

- ◆ Power lines
- ◆ Personal digital assistants (PDA's)
- ◆ Microprocessors based equipment
- ◆ Notebooks, Desktops, and Servers
- ◆ Cell phone Handsets and Accessories
- ◆ Portable Electronics
- ◆ Peripherals

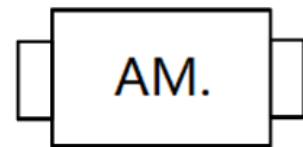
<http://www.xihangsemi.com>



**SOD-123FL**



**Circuit Diagram**



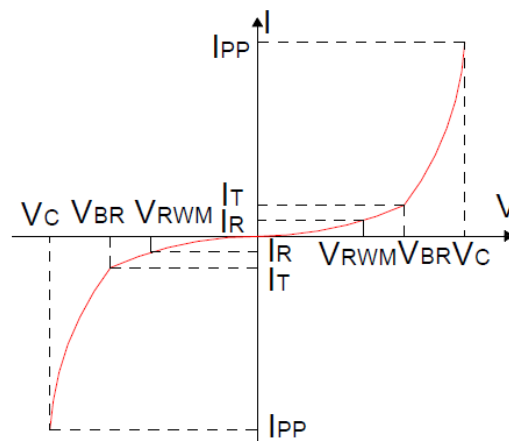
**Marking**

## Order Information

Device	Package	Shipping
XT1DF7VB	SOD-123FL	3000/Tape&Reel

## Definitions of electrical characteristics

Symbol	Parameter
$V_{RWM}$	Reverse Stand-off Voltage
$I_R$	Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Reverse Breakdown Voltage @ $I_T$
$I_R$	Reverse Breakdown Current
$I_{PP}$	Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$



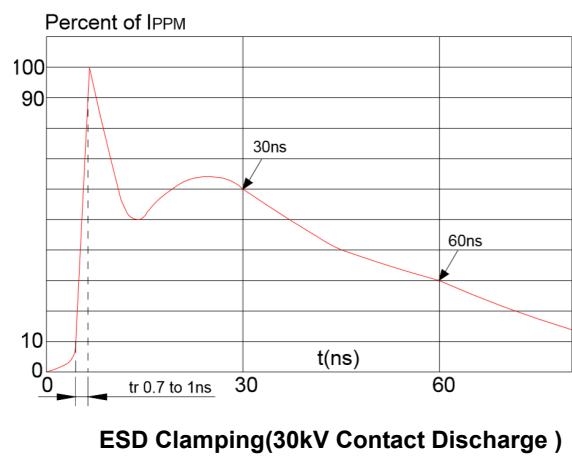
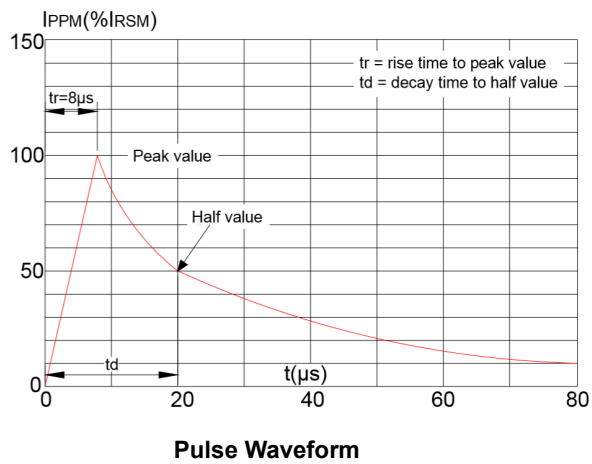
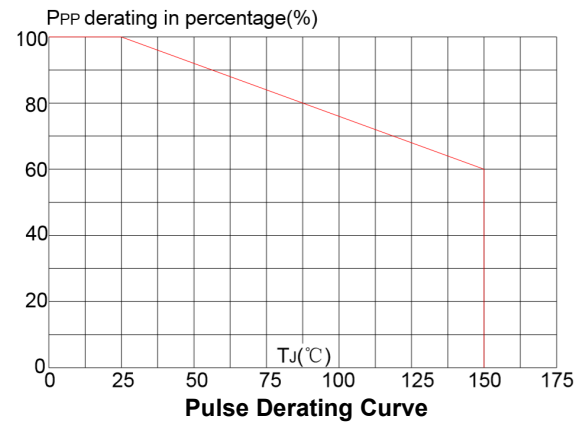
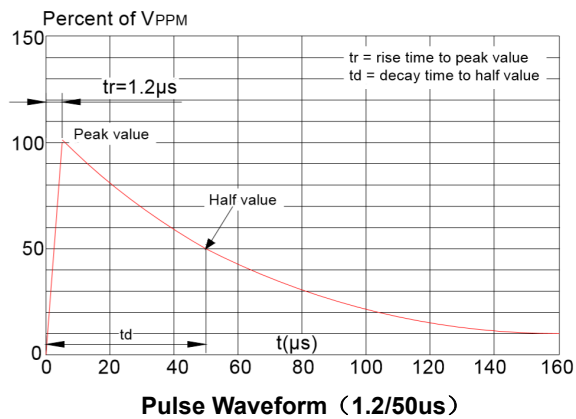
## Absolute Maximum Rating

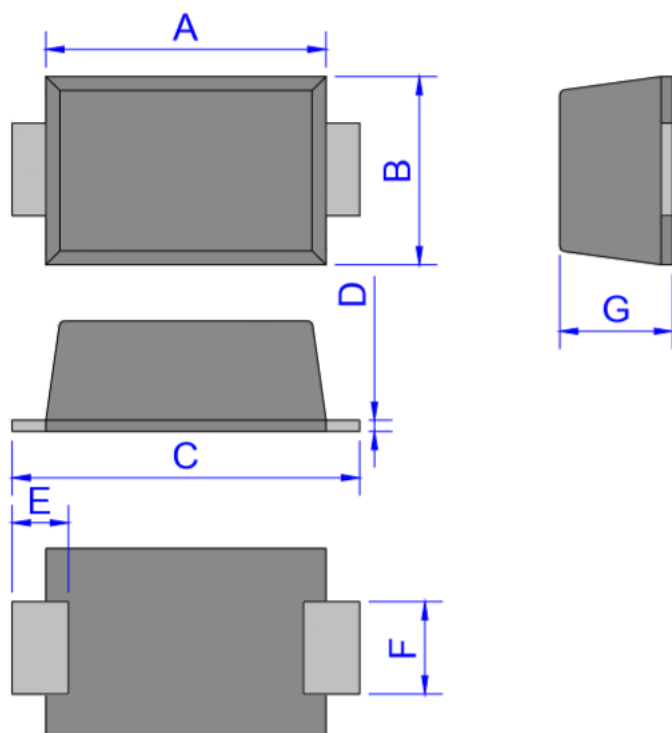
Rating	Symbol	Value	Units
Peak Pulse Power ( $t_P = 8/20\mu S$ )	$P_{PK}$	3600	W
Peak Pulse Current ( $t_P = 8/20\mu S$ )	$I_{pp}$	200	A
ESD according to IEC61000-4-2 air discharge	$V_{ESD}$	$\pm 30$	kV
ESD according to IEC61000-4-2 contact discharge		$\pm 30$	kV
Lead Soldering Temperature	$T_L$	260 (10 sec)	$^{\circ}C$
Operating Temperature	$T_{OP}$	-55 to +125	$^{\circ}C$
Storage Temperature	$T_{STG}$	-55 to +150	$^{\circ}C$

## Electrical Characteristics ( $T_a=25^{\circ}C$ , unless otherwise noted)

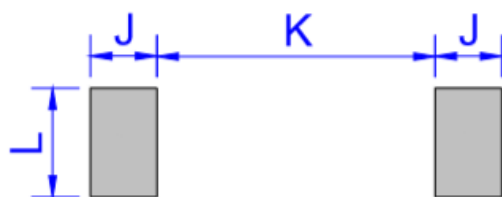
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	$V_{RWM}$				7	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T=1mA$	8		10	V
Reverse Leakage Current	$I_R$	$V_{RWM}=7V$			1	$\mu A$
Clamping Voltage	$V_C$	$I_{PP}=200A$ $t_P = 8/20\mu s$			18	V
Junction Capacitance	$C_j$	$V_R=0V$ $f = 1MHz$		520	550	pF

## Typical Characteristics (Ta=25℃, unless otherwise noted)



**Package Outline Dimensions (SOD-123FL)**


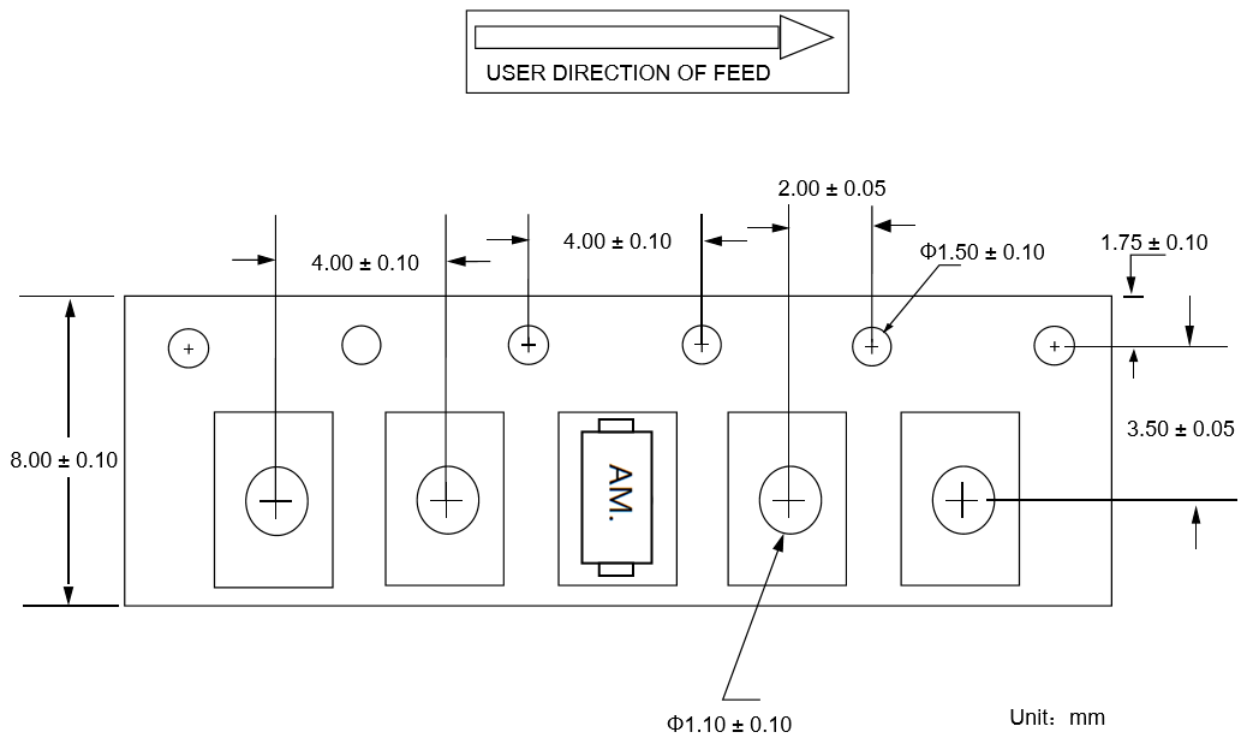
Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.60	3.00	0.102	0.118
B	1.60	2.00	0.063	0.079
C	3.45	3.95	0.136	0.156
D	0.10	0.25	0.004	0.01
E	0.3	0.9	0.012	0.035
F	0.80	1.20	0.031	0.047
G	0.95	1.35	0.037	0.053
J	1.30		0.051	
K		1.70		0.067
L	1.30		0.051	

**Recommend Land Pattern (Unit: mm)**


Note:

This recommended land pattern is for reference purpose only.

## Load With Information



### NOTICE

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