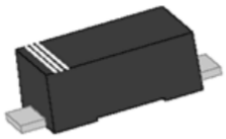
Description

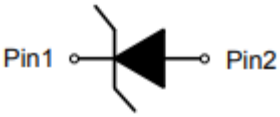
The XT1DFT12VU TVS diode is designed to replace multilayer varistors (MLVs) in portable applications such as cell phones, notebooks, and PDA's. It offers superior electrical characteristics such as low clamping voltage, low leakage current and high surge capability. It is designed to protect sensitive electronic components which are connected to power lines, from over-stress caused by ESD (Electrostatic Discharge), EFT (Electrical Fast Transients) and Lightning.

The XT1DFT12VU is in a SOD-123FLT package and will protect one uni-directional line. It may be used to provide ESD protection up to ±30kV (Contact and air discharge) according to IEC61000-4-2 , and withstand peak pulse current up to 200A (8/20μs) according to IEC61000-4-5.

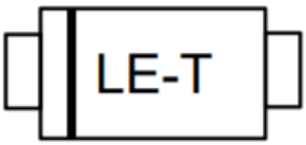
http//:www.xihangsemi.com



SOD-123FLT



Circuit Diagram



Marking

Features

- Working voltage: 12V
- SOD-123FLT Package
- 6400 Watts peak pulse power (t_p=8/20us)
- Transient protection for data lines to
  IEC 61000-4-2 (ESD) ±30kV (air),
  ±30kV (contact)
  IEC 61000-4-5 (Surge) 200A (8/20us)
  IEC61000-4-4(EFT)40A(5/50ns)
- Low leakage current
- Low clamping voltage
- Solid-state silicon-avalanche technology

Order Information

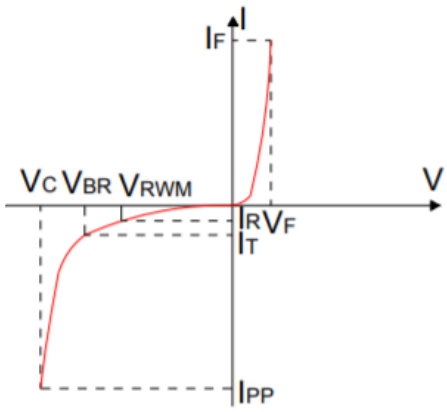
Device	Package	Shipping
XT1DFT12VU	SOD-123FLT	3000/Tape&Reel

Applications

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

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}



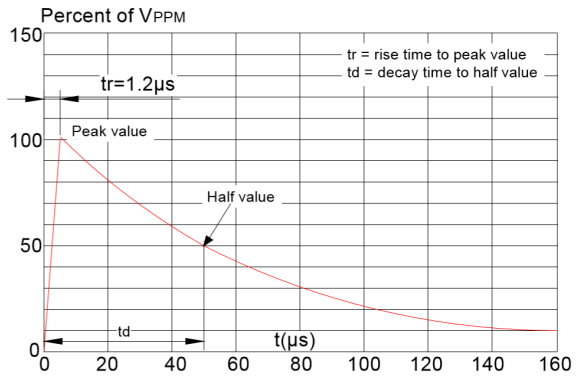
Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power (t_P = 8/20μS)	P_{PK}	6000	W
Peak Pulse Currentr (t_P = 8/20μS)	I_{pp}	200	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	±30	kV
ESD according to IEC61000-4-2 contact discharge		±30	kV
Lead Soldering Temperature	T_L	260 (10 sec)	℃
Operating Temperature	T_{OP}	-55 to +125	℃
Storage Temperature	T_{STG}	-55 to +150	℃

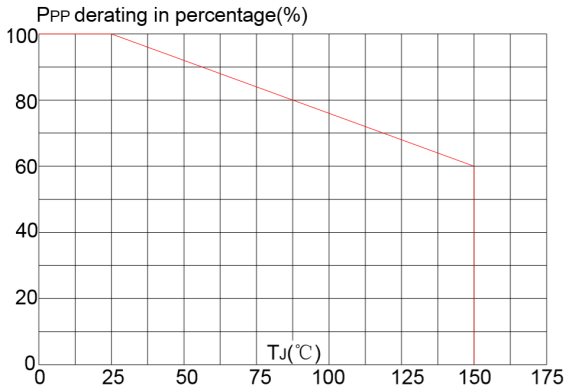
Electrical Characteristics (Ta=25℃, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				12	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	13		15	V
Reverse Leakage Current	I_R	V_{RWM} =12V			1	μA
Clamping Voltage	V_C	I_{PP}=100A t_P = 8/20μs		22	24	V
	V_C	I_{PP}=200A t_P = 8/20μs		28	30	V
Junction Capacitance	Cj	VR=0V f = 1MHz		1000	1500	pF

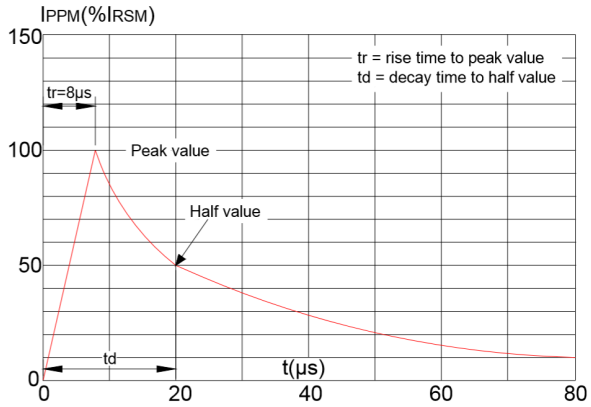
Typical Characteristics (Ta=25℃, unless otherwise noted)



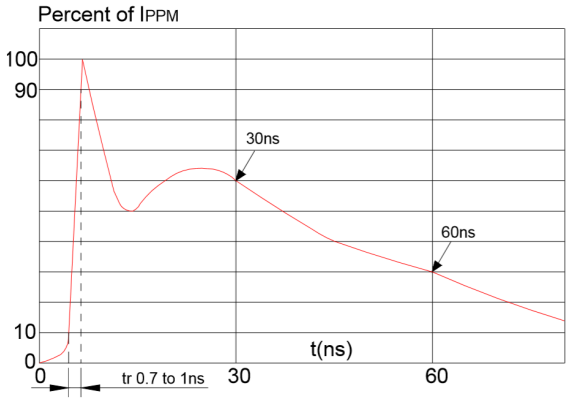
Pulse Waveform（1.2/50us）



Pulse Derating Curve

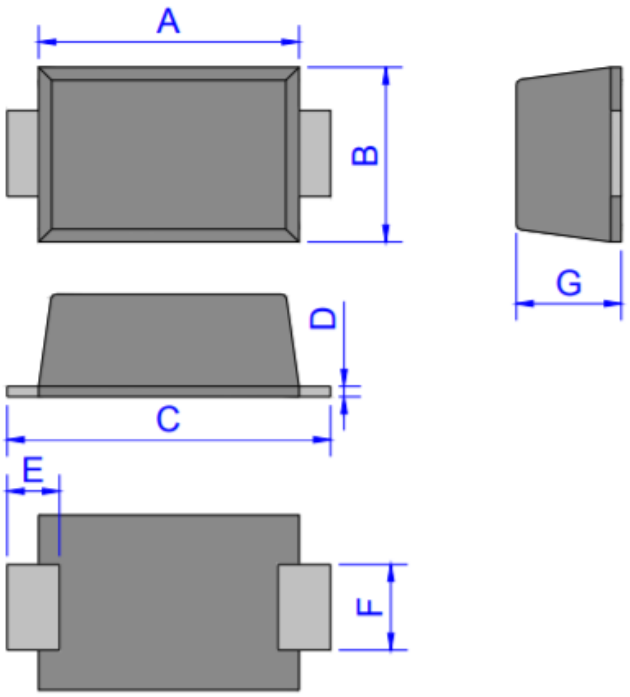


Pulse Waveform



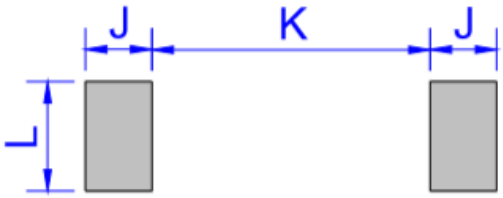
ESD Clamping(30kV Contact Discharge)

Package Outline Dimensions (SOD-123FLT）



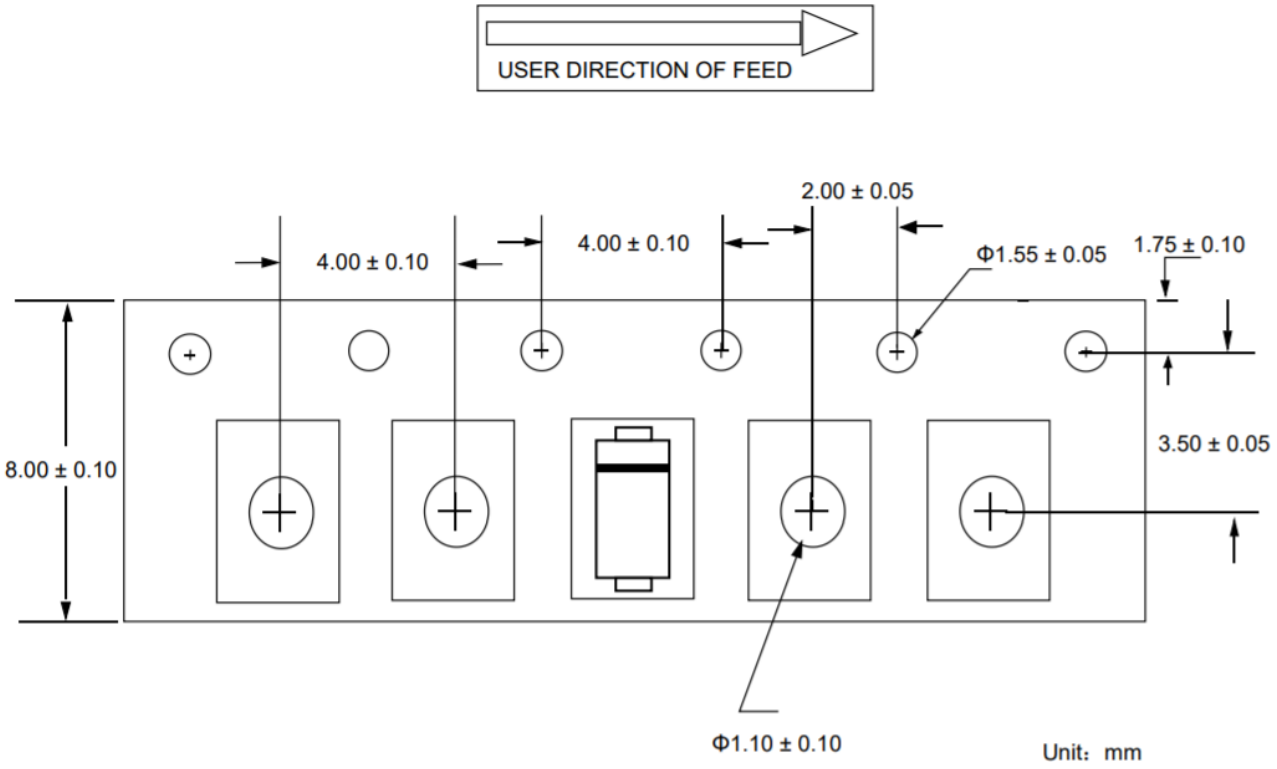
Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.60	3.00	0.102	0.118
B	1.60	2.00	0.063	0.079
C	3.45	3.95	0.136	0.156
D	0.10	0.25	0.004	0.01
E	0.3	0.9	0.012	0.035
F	0.80	1.20	0.031	0.047
G	0.70	1.00	0.028	0.039
J	1.30		0.051	
K		1.70		0.067
L	1.30		0.051	

Recommend Land Pattern (Unit: mm)



Note:
This recommended land pattern is for reference purpose only.

Load With Information



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