

Semiconductor TVS Diode

Features

- low capacitance
- Protects one data or power line
- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 25\text{kV}$
 - Contact discharge: $\pm 20\text{kV}$
 - IEC61000-4-5 (Lightning) 4 A (8/20 μs)
- RoHS Compliant

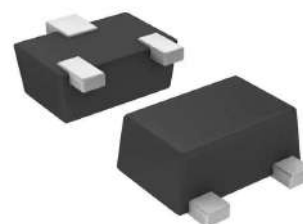
Applications

- USB Ports
- SIM Ports
- Smart Phones
- Wireless Systems
- Set-top box and digital TV
- Digital video interface (DVI)
- Ethernet 10/100/1000 Base T

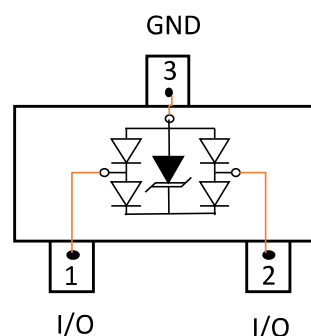
Mechanical Characteristics

- SOT-723 Package
- Molding Compound Flammability Rating : UL 94V-0
- Quantity Per Reel : 10,000pcs
- Reel Size : 7 inch
- Device Marking: 5P

Dimensions SOT-723



Pin Configuration



Absolute Maximum Ratings (T_{amb}=25°C unless otherwise specified)

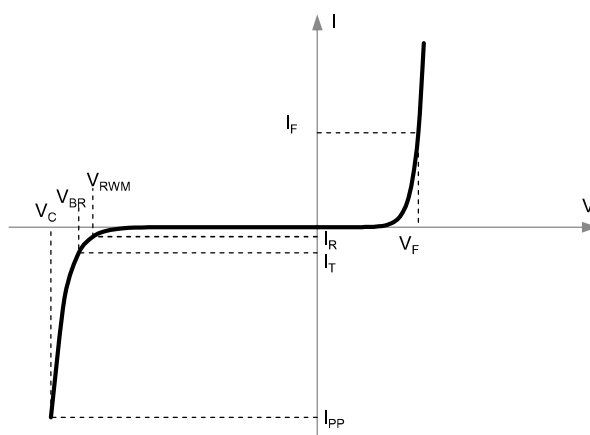
Parameter	Symbol	Value	Unit
Peak Pulse Current (8/20 μs)	P _{pp}	60	W
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 25	kV
ESD per IEC 61000-4-2 (Contact)		± 20	
Operating Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	T _{STJ}	-55 to +150	°C

Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				5	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	6	7		V
Reverse Leakage Current	I_R	$V_{RWM} = 5\text{V}$			0.1	μA
Forward Voltage	V_F	$I_F = 10\text{mA}$			1.2	V
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$ (8 x 20 μs pulse)		8		V
Clamping Voltage	V_C	$I_{PP} = 4\text{A}$ (8 x 20 μs pulse)		12	14	V
Junction Capacitance between I/O pins	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$		0.25	0.4	pF
Junction Capacitance I/O to GND	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$		0.45	0.8	pF

Electrical Parameters (TA=25°C unless otherwise specified)

Symbol	Definition
I_{PP}	Peak Pulse Current
V_C	Clamping Voltage
V_{RWM}	Reverse Working Voltage
I_R	Reverse Leakage Current
V_{BR}	Breakdown Voltage
I_T	Test Current
V_F	Forward Voltage
I_F	Forward Current



Typical Performance Characteristics (TA=25°C unless otherwise specified)

Fig.1 - Peak Pulse Power Rating

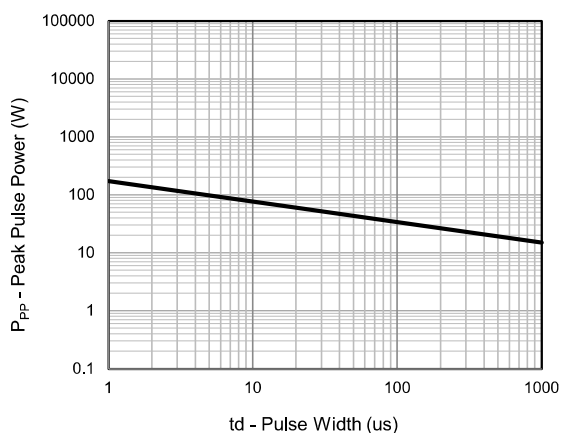


Fig.2 - Pulse Derating Curve

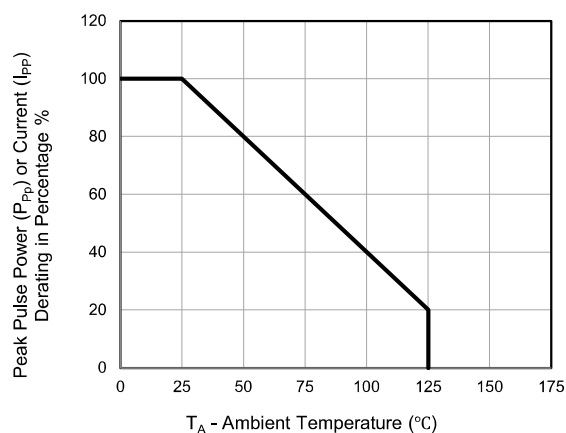


Fig.3 - 8/20us Pulse Waveform

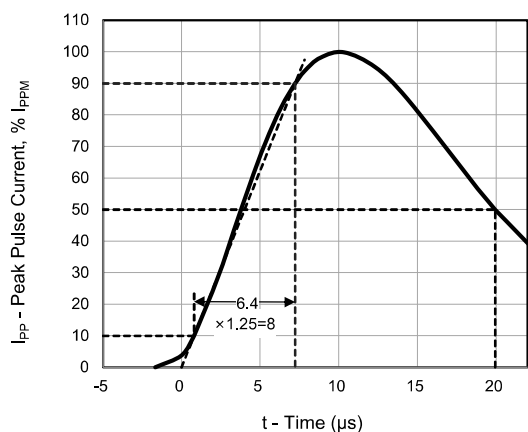


Fig.4 - Typical Clamping Voltage

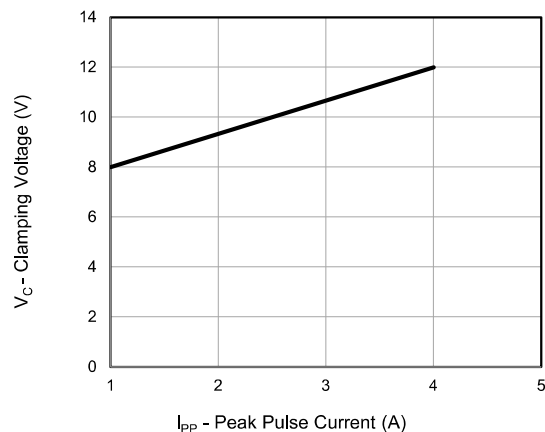


Fig.5 - ESD Pulse Waveform (IEC61000-4-2)

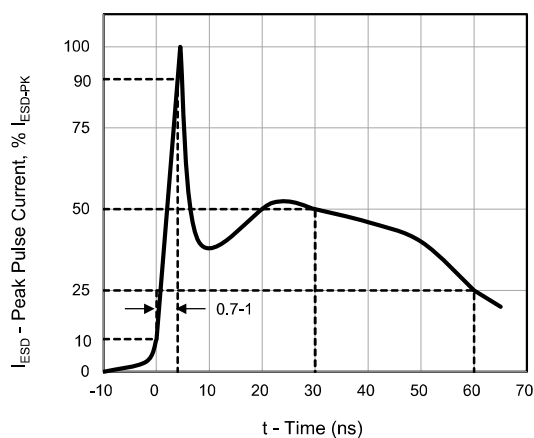
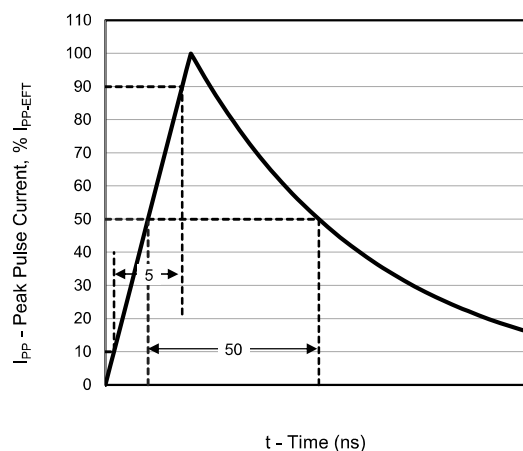
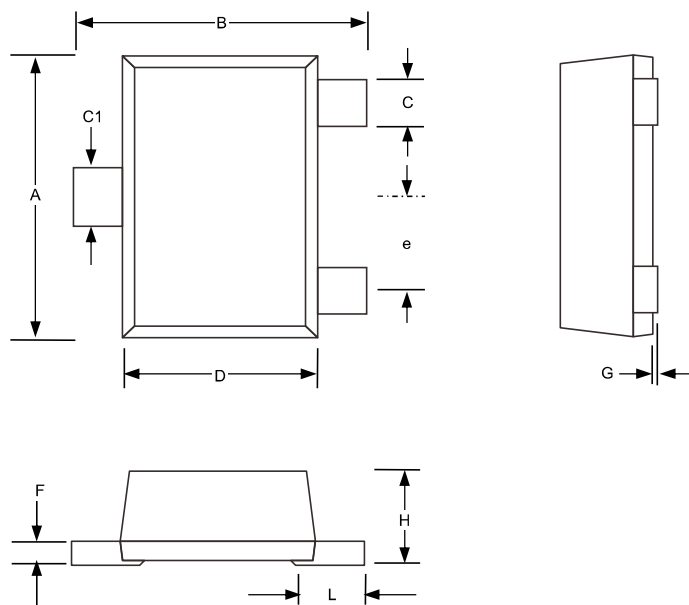


Fig.6 - 5/50ns EFT Waveform (IEC61000-4-4)



SOT-723 Package Outline Drawing



SOT-723			
SYMBOL	Millimeters		
	MIN	NOM	MAX
A	1.15	1.2	1.25
B	1.15	1.2	1.25
C	0.17	0.22	0.27
D	0.75	0.8	0.85
F	0.08	0.1	0.15
G			0.1
H	0.35	0.42	0.49
e		0.4	
C1	0.22	0.25	0.37