

**Transient Voltage Suppressor**

**Features**

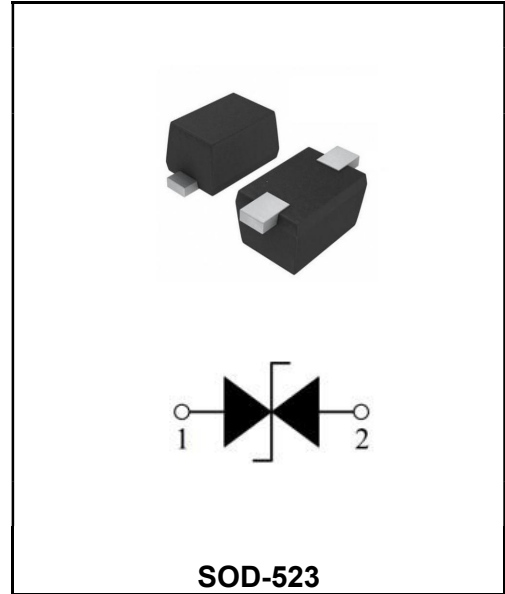
- ◆IEC 61000-4-2 Level 4 protection
- ◆Bidirectional ESD Protection of one I/O line
- ◆Ultra low capacitance :typically:3pf
- ◆Low Clamping Voltage
- ◆Working Voltage: 5 V
- ◆Low Leakage Current: typically 5nA
- ◆Solid-state silicon-avalanche technology
- ◆IEC 61000-4-2 ( ESD ) ±8 KV contact ±15 KV Air
- ◆IEC 61000-4-4 (EFT) 40A (5/50ns)

**Application**

- ◆Cellular Handsets & Accessories
- ◆Personal Digital Assistants (PDAs)
- ◆Notebooks & Handhelds
- ◆Portable Instrumentation
- ◆Digital Cameras
- ◆MP3 players

**Order Information**

Part Number	Package	Marking	Size (mm)	Delivery Form	Delivery Quantity
ESD5VLBD523	SOD-523	5B	1.6X0.8X0.6	7" T&R	3000PCS/Tape



**Limiting Values(TA = 25 °C, unless otherwise specified)**

Symbol	Parameter	Conditions	value	Unit
V <sub>ESD</sub>	Electrostatic Discharge Voltage(See Note1,2)	Contact	8	KV
		Air	15	KV
T <sub>J</sub>	Junction Temperature	-	-55 to+150	°C
T <sub>stg</sub>	Storage Temperature Range	-	-55 to+150	°C

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

Symbol	Parameter	Conditions	Min	Typ.	Max	Unit
V <sub>RWM</sub>	Reverse Stand-Off Voltage		-	-	5.0	V
V <sub>BR</sub>	Breakdown Voltage	IT = 1mA	6.0	-	-	V
I <sub>R</sub>	Reverse Leakage Current	VRWM = 5 V; TA = 25 °C	-	5	50	nA
C <sub>J</sub>	Junction Capacitance	VR = 0V, f = 1 MHz	-	3	5	pF
V <sub>C</sub>	Clamping Voltage(See Note3)	8KV(contact)	See Figure3			V

Note1: ESD Pulse Waveform according to IEC 61000-4-2 , see Table1 and Figure1

Note2: ESD test Setup see Figure2.

Note3: The clamping Voltage data is taken with a 100x attenuator.

Typical Characteristics

IEC 61000-4-2 Spec.

Level	Test Voltage (kV)	First Peak Current (A)	Current at 30 ns (A)	Current at 60 ns (A)
1	2	7.5	4	2
2	4	15	8	4
3	6	22.5	12	6
4	8	30	16	8

Table 1: IEC61000-4-2 Spec.

IEC61000-4-2 Waveform

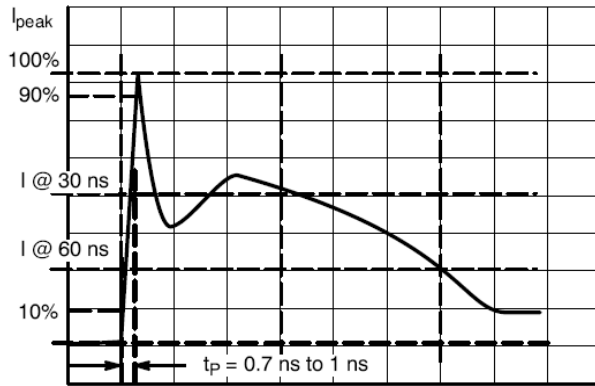


Fig.1 IEC61000-4-2 Waveform

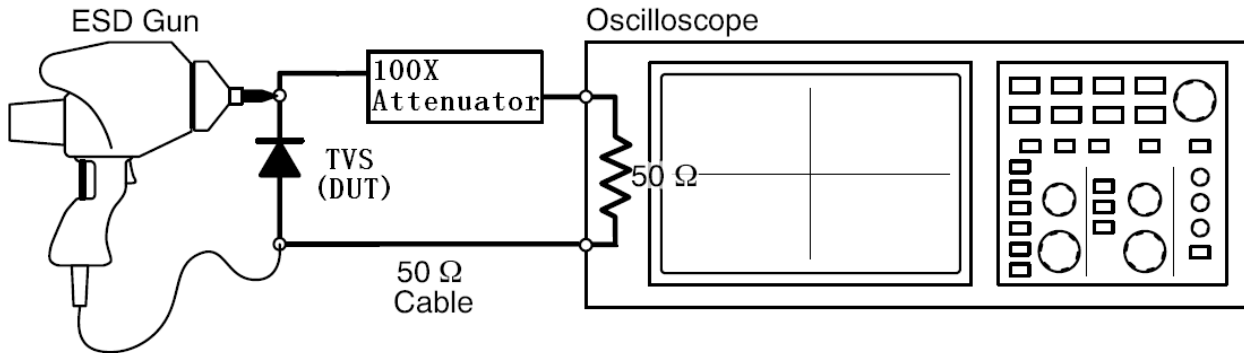


Fig. 2 ESD Test Setup

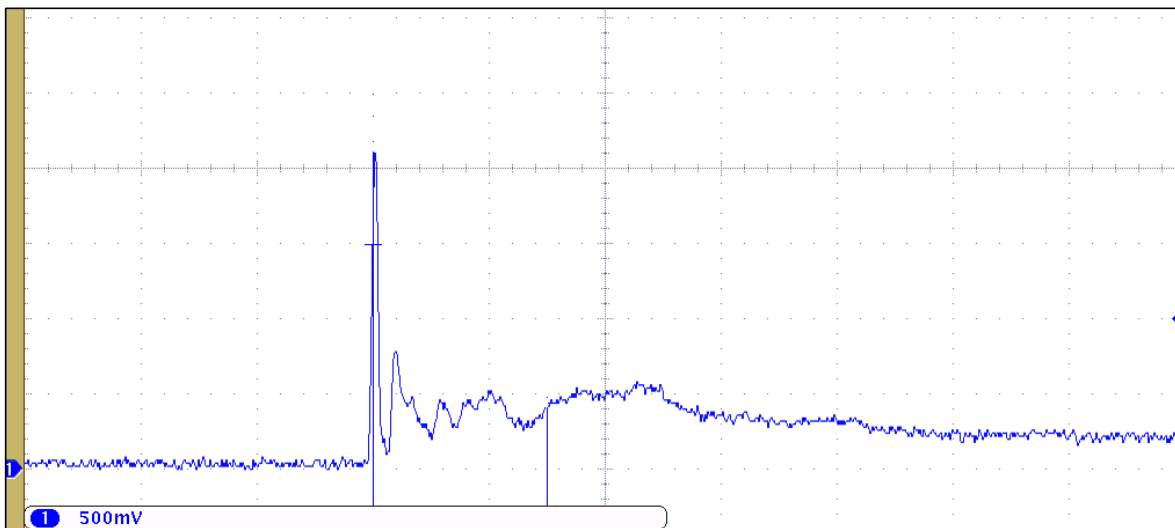
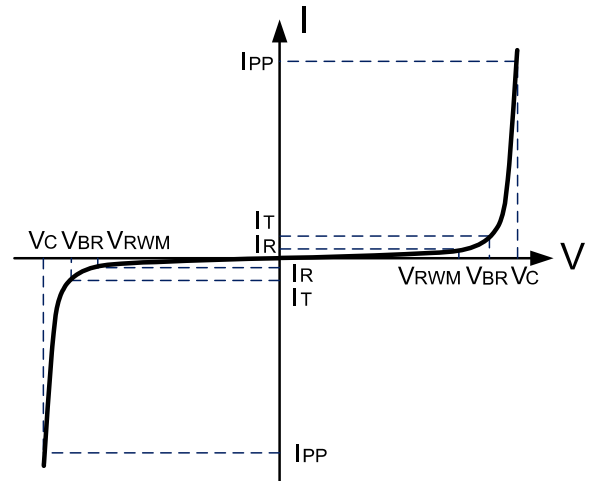


Fig 3: ESD Clamping( 8kV Contact per IEC 61000-4-2)

Electrical Parameters (T=25°C)

Symbol	Parameter
$V_{RWM}$	Working Peak Reverse Voltage
$I_R$	Maximum Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_R$	Test Current
$I_F$	Forward Current
$V_F$	Forward Voltage @ $I_F$



**Package Dimension**

PACKAGE OUTLINE		DIMENSIONS			
SYMBOL	MILLIMETER		INCHES		
	MIN	MAX	MIN	MAX	
A	0.50	0.70	0.020	0.028	
b	0.25	0.35	0.010	0.014	
C	0.07	0.20	0.0028	0.0079	
D	1.10	1.30	0.043	0.051	
E	0.70	0.90	0.028	0.035	
H <sub>E</sub>	1.50	1.70	0.059	0.067	
L	0.15	0.25	0.006	0.010	

DIMENSIONS: MILLIMETERS

**Notes**

1. Controlling Dimensions in Millimeters.
2. Dimensions are exclusive of mold flash and metal burrs.