

## RoHS Device Halogen Free

### Features

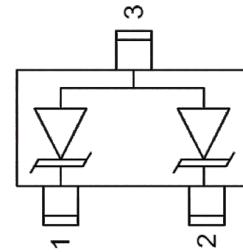
- Protects one I/O or power line
- Low Clamping Voltage
- Ultra Low Capacitance (< 1pF)
- Working Voltage: 5V
- Low Leakage Current



SOT-23

### Mechanical Characteristics

- SOT-23 package
- Molding compound flammability rating:  
UL 94V-0
- Marking: Marking Code
- Packaging: Tape and Reel per EIA 481



### Applications

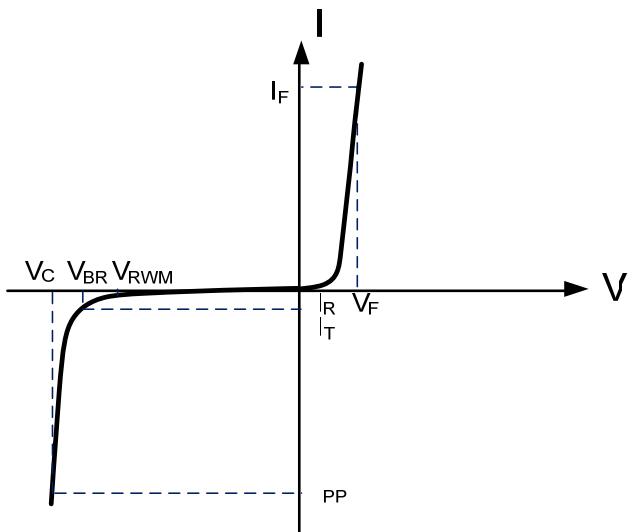
- USB 2.0 and USB 3.0
- HDMI 1.3 and HDMI 1.4
- SATA and eSATA
- IEEE 1394
- PCI Express
- Portable Electronics
- Notebooks

### Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power ( $t_p = 8/20\mu s$ )	$P_{PP}$	100	Watts
Peak Pulse Current ( $t_p = 8/20\mu s$ )	$I_{PP}$	5	A
Electrostatic discharge Voltage (See Note1 ,2)	$V_{ESD}$	15KV (contact)	Volts
		20KV (air)	
Operating Temperature	$T_J$	-55 to + 150	°C
Storage Temperature	$T_{STG}$	-55 to +150	°C

## Electrical Parameters ( $T=25^{\circ}\text{C}$ )

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



## Electrical Characteristics

Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	$V_{\text{RWM}}$				5	V
Reverse Breakdown Voltage	$V_{\text{BR}}$	$I_T=1\text{mA}$	6.0			V
Reverse Leakage Current	$I_R$	$V_{\text{RWM}}=5\text{V}, T=25^{\circ}\text{C}$			0.5	$\mu\text{A}$
Junction Capacitance	$C_J$	$V_R = 0\text{V}, f = 1\text{MHz}$ Pin 1 to Pin 2		0.4	0.6	pF
		$V_R = 0\text{V}, f = 1\text{MHz}$ Pin 1 or 2 to Pin 3		0.6	1.0	pF
Clamping Voltage ( See Note3)	$V_c$	8KV (contact)	See Figure3			V

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

Note2: ESD Clamping Voltage see Figure2 and 3.

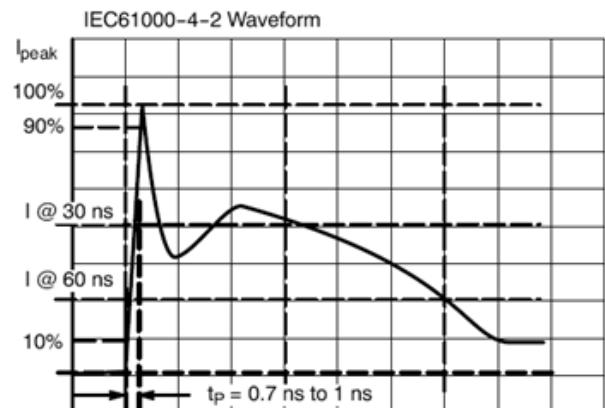
Note3: The clamping Voltage data is taken with a 100x attenuator.

## Typical Characteristics

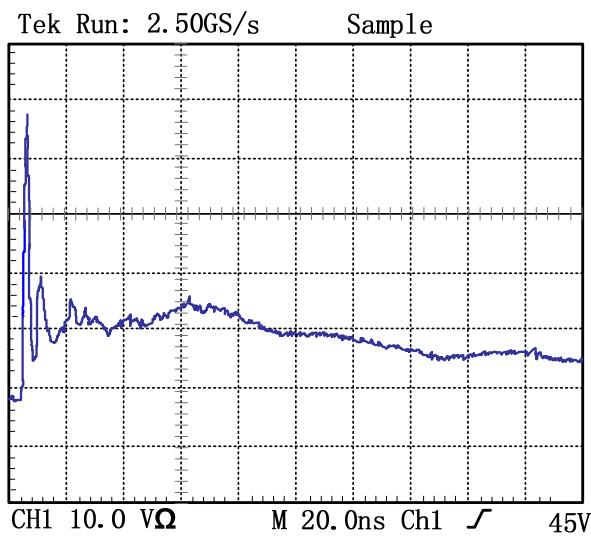
**Table 1: IEC 61000-4-2 Discharge Parameters**

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

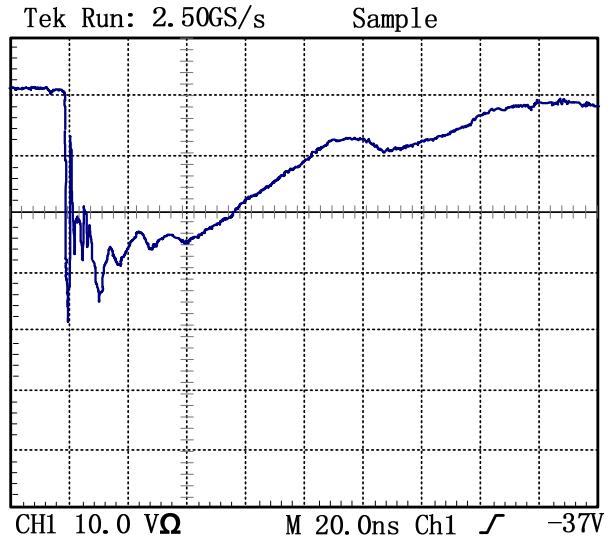
**Figure 1: IEC 61000-4-2 Waveform**



**Figure 2 ESD Clamping Voltage Screenshot Positive 8 kV contact per IEC 61000-4-2**



**Figure 3 ESD Clamping Voltage Screenshot Negative 8 kV contact per IEC 61000-4-2**



## Outline Drawing – SOT-23

PACKAGE OUTLINE		DIMENSIONS			
SYMBOL		MILLIMETER		INCHES	
		MIN	MAX	MIN	MAX
A		0.900	1.150	0.035	0.045
A1		0.000	0.100	0.000	0.004
A2		0.900	1.050	0.035	0.041
D		2.800	3.000	0.110	0.118
b		0.300	0.500	0.012	0.020
E		2.250	2.550	0.089	0.100
E1		1.200	1.400	0.047	0.055
e		0.950 BSC		0.037 BSC	
L		0.300	0.500	0.012	0.020
$\theta$		0	8°	0	8°

DIMENSIONS		
DIM	INCHES	MILLIMETERS
M	0.088	2.20
C	0.0058	0.15
Z	0.093	2.35
e	0.037 BSC	0.95 BSC
e1	0.074 BSC	1.9 BSC
b	0.0389	0.35

### Notes

- Dimensioning and tolerances per ANSI Y14.5M, 1985.
- Controlling Dimension: Inches
- Pin 3 is the cathode (Unidirectional Only).
- Dimensions are exclusive of mold flash and metal burrs.