

### Features

- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge:  $\pm 30\text{kV}$
    - Contact discharge:  $\pm 30\text{kV}$
  - IEC61000-4-4 (EFT) 40A (5/50ns)
  - IEC61000-4-5 (Lightning) 25A (8/20  $\mu\text{s}$ )
- RoHS Compliant

### Dimensions SOD-323



### Applications

- USB 2.0 power and data line
- Set-top box and digital TV
- Digital video interface (DVI)
- Notebook Computers
- SIM Ports
- 10/100 Ethernet

### Pin Configuration



### Mechanical Characteristics

- Package: SOD-323
- Lead Finish: Lead Free
- UL Flammability Classification Rating 94V-0
- Quantity Per Reel: 3,000 pcs
- Reel Size: 7 inch
- Device Marking: 3M

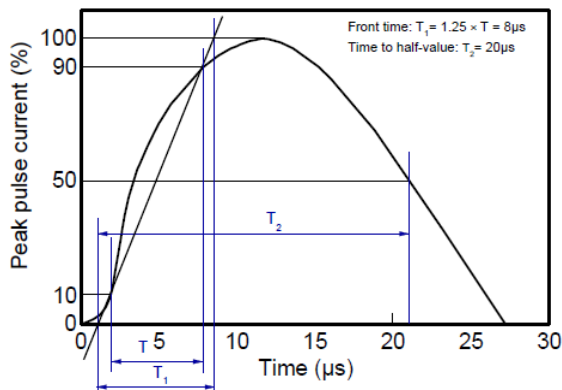
### Absolute Maximum Ratings (T<sub>amb</sub>=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	P <sub>pp</sub>	315	W
ESD per IEC 61000-4-2 (Air)	V <sub>ESD</sub>	$\pm 30$	Kv
ESD per IEC 61000-4-2 (Contact)		$\pm 30$	
Operating Temperature Range	T <sub>J</sub>	-55 to +150	°C
Storage Temperature Range	T <sub>STJ</sub>	-55 to +150	°C

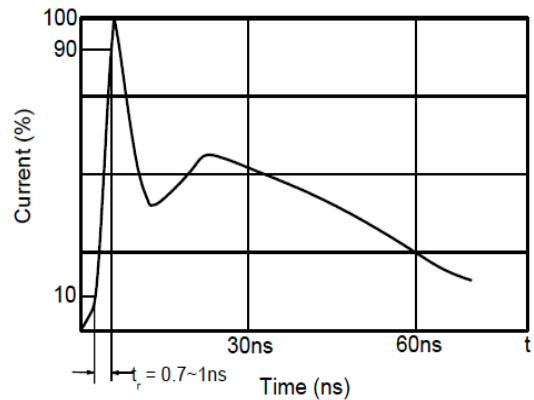
## Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	$V_{RWM}$			5	6	V
Breakdown Voltage	$V_{BR}$	$I_T = 1mA$	6.5		8	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5V$			0.1	$\mu A$
Clamping Voltage	$V_C$	$I_{PP} = 5A$ (8 x 20 $\mu s$ pulse)			9.5	V
Clamping Voltage	$V_C$	$I_{PP} = 25A$ (8 x 20 $\mu s$ pulse)			13	V
Junction Capacitance	$C_J$	$V_R = 0V, f = 1MHz$			110	pF

## Characteristic Curves



8/20 $\mu s$  waveform per IEC61000-4-5



Contact discharge current waveform per IEC61000-4-2

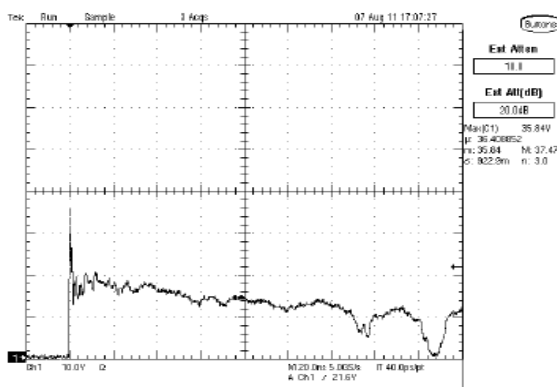


Fig1. ESD Clamping Voltage Screenshot Positive 8 kV Contact per IEC61000-4-2

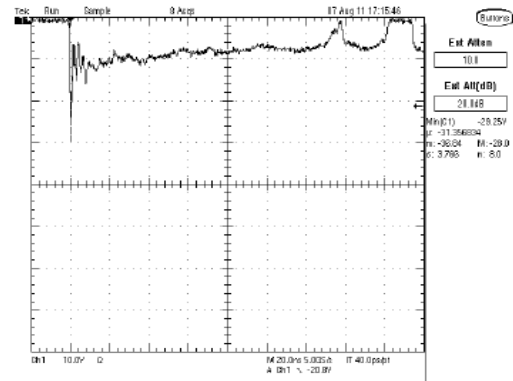


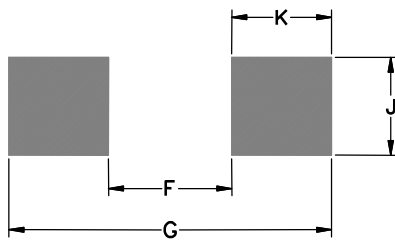
Fig2. ESD Clamping Voltage Screenshot Negative 8 kV Contact per IEC61000-4-2

## SOD-323 Package Outline & Dimensions



Symbol	Millimeters			Inches		
	Min.	Nom.	Max.	Min.	Nom.	Max.
<b>A</b>	0.80	0.90	1.15	0.031	0.035	0.045
<b>A1</b>	0.001	0.05	0.15	0.004	0.002	0.006
<b>A3</b>	0.15 REF			0.006 REF		
<b>b</b>	0.25	0.32	0.45	0.010	0.012	0.018
<b>C</b>	0.100	0.12	0.150	0.004	0.005	0.006
<b>D</b>	1.60	1.70	1.95	0.063	0.066	0.077
<b>E</b>	1.10	1.25	1.50	0.043	0.049	0.059
<b>L</b>	0.08			0.003		
<b>H<sub>E</sub></b>	2.65	2.85	3.10	0.104	0.112	0.122

### Soldering Footprint



Symbol	Millimeters	Inches
<b>F</b>	1.60	0.063
<b>G</b>	3.20	0.125
<b>J</b>	0.60	0.024
<b>K</b>	0.80	0.031

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