

### Features

- Small SOD-323 package
- Protects one data or power line
- Working Voltage: 5V
- High peak pulse current capability
- Ultra 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) 80A (5/50ns)
  - IEC61000-4-5 (Lightning) 95A (8/20 $\mu\text{s}$ )
- RoHS Compliant

### Applications

- Mobile Phones and Accessories
- Battery Protection
- USB VBus
- Power Line Protection
- Hand Held Portable Applications

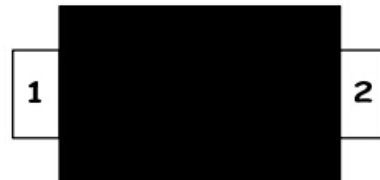
### Mechanical Characteristics

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

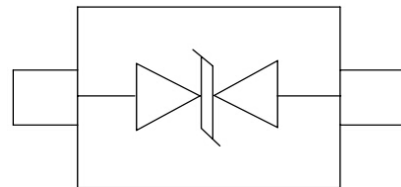
### Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	Ppp	1425	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 +125	°C
Storage Temperature Range	T <sub>STJ</sub>	-55 to +150	°C

### Dimensions SOD-323



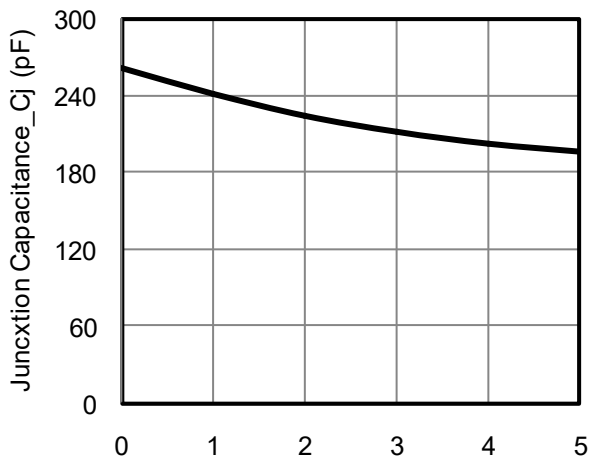
### Pin Configuration



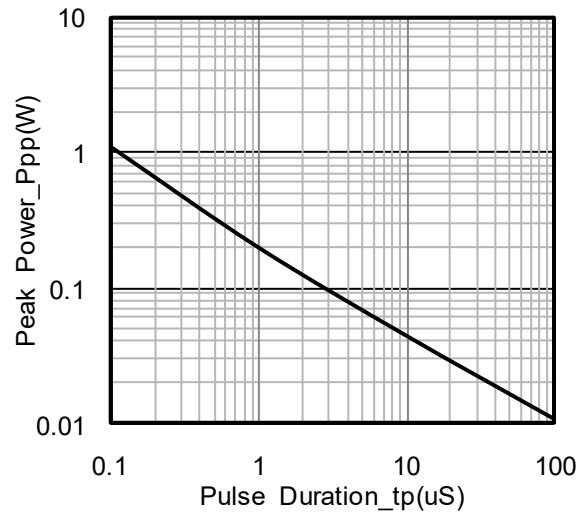
## Electrical Characteristics (TA=25°C unless otherwise specified)

Part Number	Device Marking	V <sub>RWM</sub> (V)	V <sub>BR</sub> (V)	I <sub>T</sub> (mA)	V <sub>C</sub> @20A	V <sub>C</sub>		I <sub>R</sub> μA (Max)	C (Pf) (Typ.)
						(Max)	(@A)		
SD0581D3W	58D	5	6	1	9	15	95	0.5	300

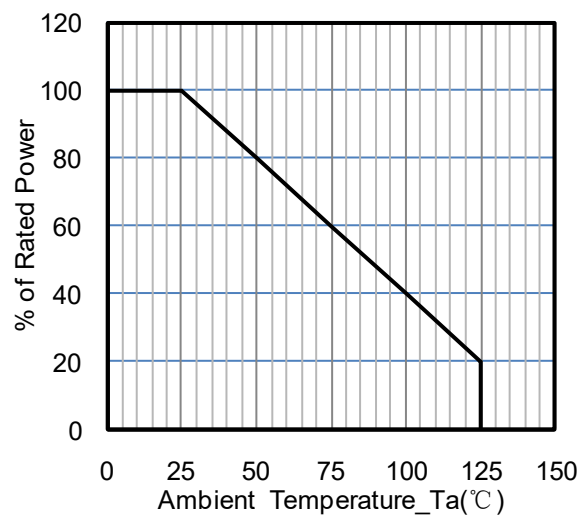
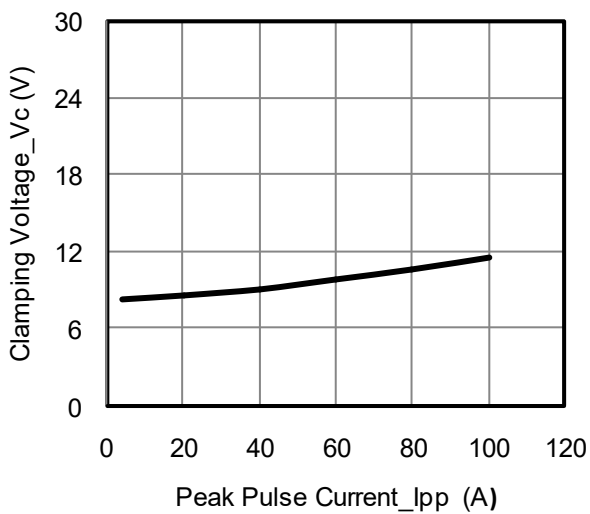
## Characteristic Curves



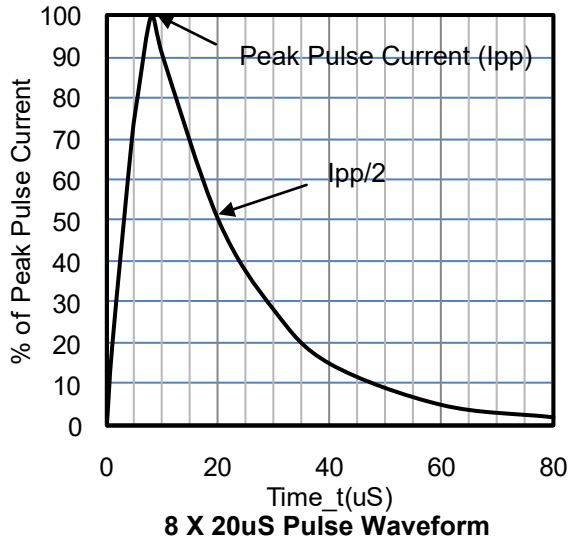
Junction Capacitance vs. Reverse Voltage



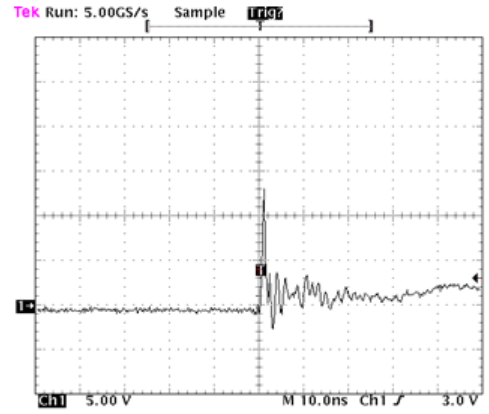
Peak Power vs. Pulse Time



**Clamping Voltage vs. Peak Pulse Current ( $t_p = 8/20\mu s$ )**



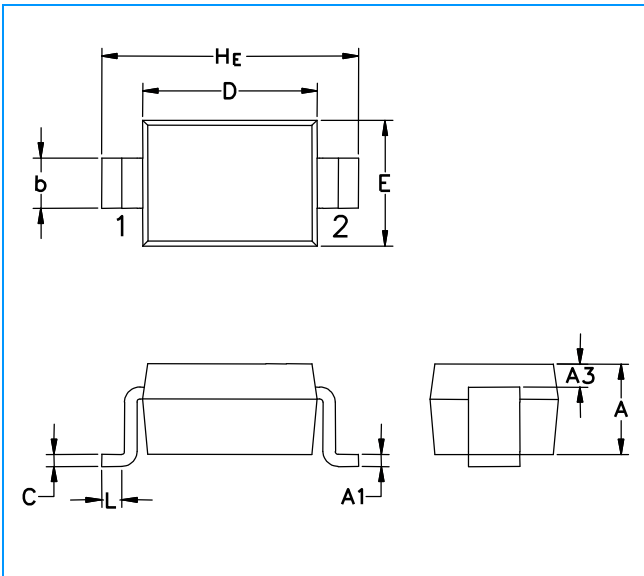
**Power Derating Curve**



**ESD Clamping Voltage**

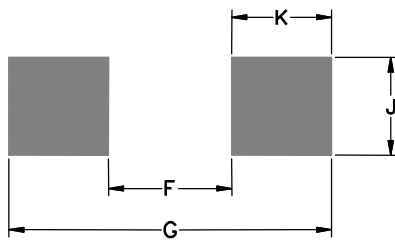
**8 kV Contact per IEC61000-4-2**

## SOD-323 Package Outline & Dimensions



Symbol	Millimeters			Inches		
	Min.	Nom.	Max.	Min.	Nom.	Max.
<b>A</b>	0.80	0.90	1.00	0.031	0.035	0.040
<b>A1</b>	0.00	0.05	0.10	0.000	0.002	0.004
<b>A3</b>	0.15 REF			0.006 REF		
<b>b</b>	0.25	0.32	0.40	0.010	0.012	0.016
<b>C</b>	0.089	0.12	0.177	0.003	0.005	0.007
<b>D</b>	1.60	1.70	1.80	0.062	0.066	0.070
<b>E</b>	1.15	1.25	1.35	0.045	0.049	0.053
<b>L</b>	0.08			0.003		
<b>H<sub>E</sub></b>	2.30	2.50	2.70	0.090	0.098	0.105

### Soldering Footprint



Symbol	Millimeters	Inches
<b>F</b>	1.60	0.063
<b>G</b>	2.85	0.112
<b>J</b>	0.83	0.033
<b>K</b>	0.63	0.025