

## Features

- 500 Watts Peak Pulse Power per Line ( $t_p = 8/20\mu s$ )
- Replacement for MLV (0805)
- Unidirectional & Bidirectional Configurations
- Protects one I/O or power line
- Low Clamping Voltage
- Working Voltage: 3.3V, 5V, 12V, 15V and 24V
- Low Leakage Current
- Response Time is Typically  $< 1 ns$



## IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2 (ESD)  $\pm 15kV$  (air),  $\pm 8kV$  (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 24A (8/20 $\mu s$ )

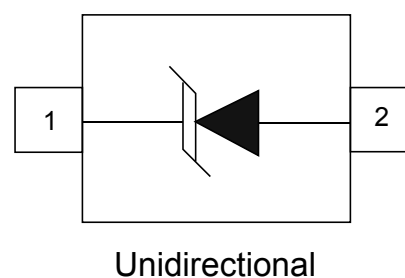
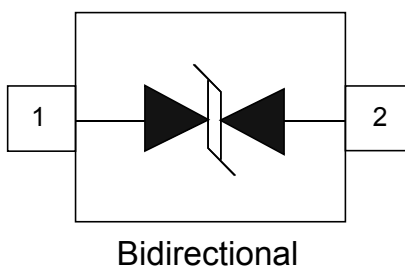
## Mechanical Characteristics

- JEDEC SOD-323 package
- Molding compound flammability rating: UL 94V-0
- Marking: Marking Code
- Packaging: Tape and Reel per EIA 481
- RoHS/WEEE Compliant

## Applications

- Laptop Computers
- Cellular Phones
- Digital Cameras
- Personal Digital Assistants (PDAs)

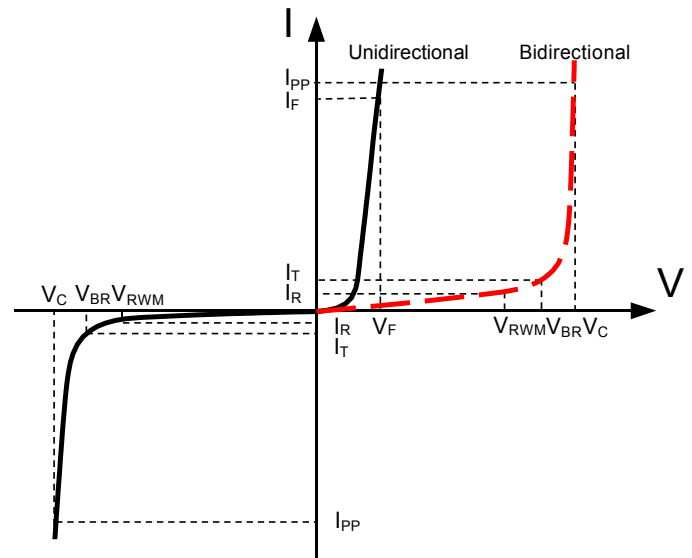
## Schematic & PIN Configuration



Absolute Maximum Rating			
Rating	Symbol	Value	Units
Unidirectional Peak Pulse Power ( $t_p=8/20\mu s$ ) -See Figure 1	$P_{PP}$	500	Watts
Bidirectional Peak Pulse Power ( $t_p=8/20\mu s$ ) -See Figure 1	$P_{pp}$	400	Watts
Operating Temperature	$T_J$	-55 to + 125	$^{\circ}C$
Storage Temperature	$T_{STG}$	-55 to +150	$^{\circ}C$

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

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



### Electrical Characteristics

Part Number	Reverse Stand off Voltage $V_{RWM}$ (Volts)	Minimum Breakdown Voltage $V_{BR}@1mA$ (Volts)	Maximum Clamping Voltage $V_C@I_{PP}$ (Volts)	Maximum Peak Pulse Current $I_{pp}$ (Amps)	Maximum Reverse Leakage $I_R@V_{RWM}$ ( $\mu A$ )	Typical Capacitance DC=0V $C_J@1 MHz$ (pF)
BSD3A031V	3.3	4.0	17	27	70	200
BSD3C031V	3B	4.0	18	25	70	100
BSD3A051V	05	6.0	20	24	1	150
BSD3C051V	5B	6.0	24	20	1	75
BSD3A121V	12	13.3	35	15	1	50
BSD3C121V	12B	13.3	39	12	1	25
BSD3A151V	15	16.7	42	12	1	40
BSD3C151V	15B	16.7	55	9	1	20
BSD3A241V	24	26.7	60	8	1	30
BSD3C241V	24B	26.7	67	6	1	15

## Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

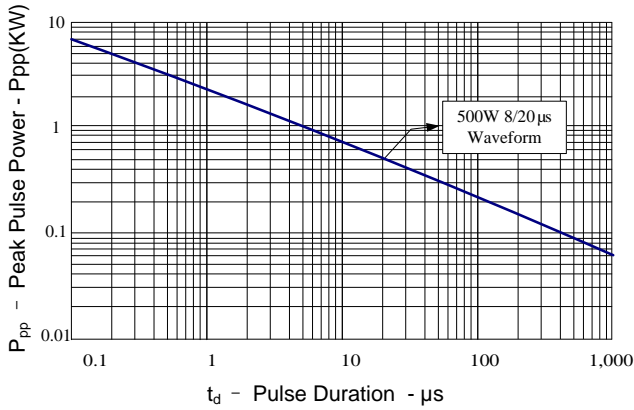


Figure 2: Power Derating Curve

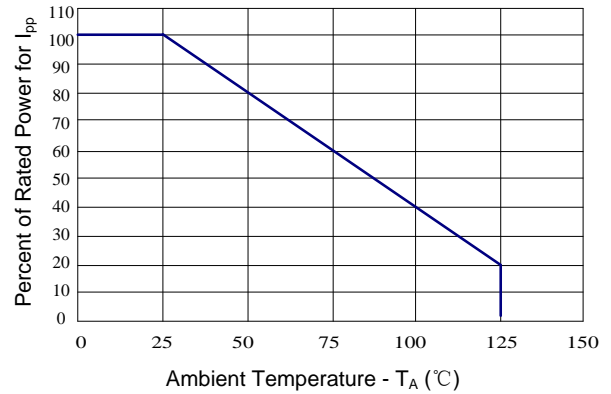


Figure 3: Clamping Voltage vs. Peak Pulse Current

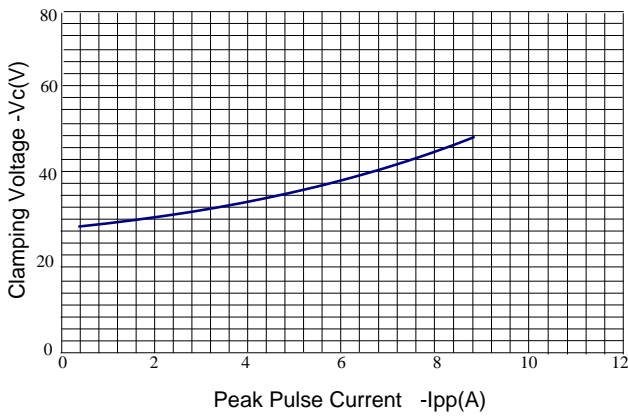


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

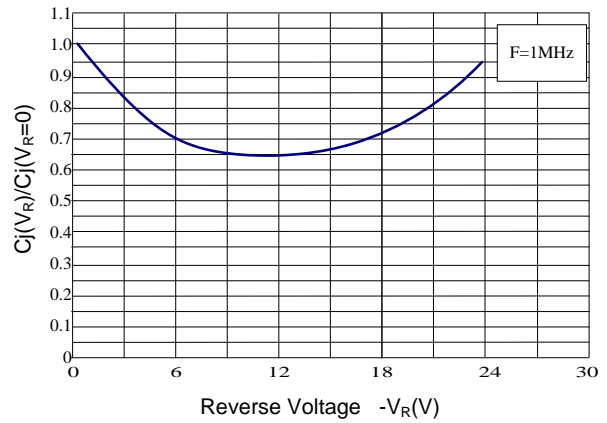
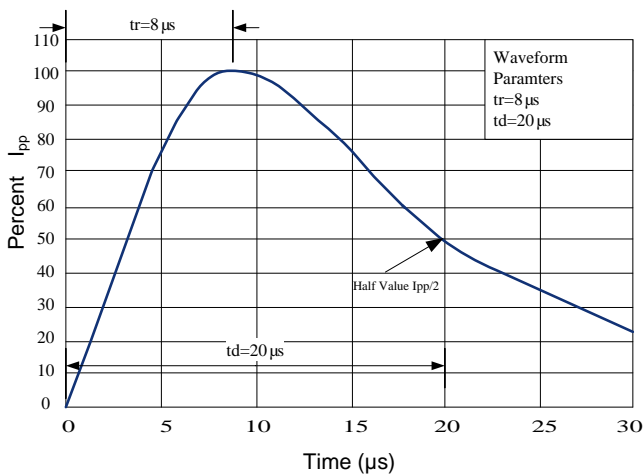
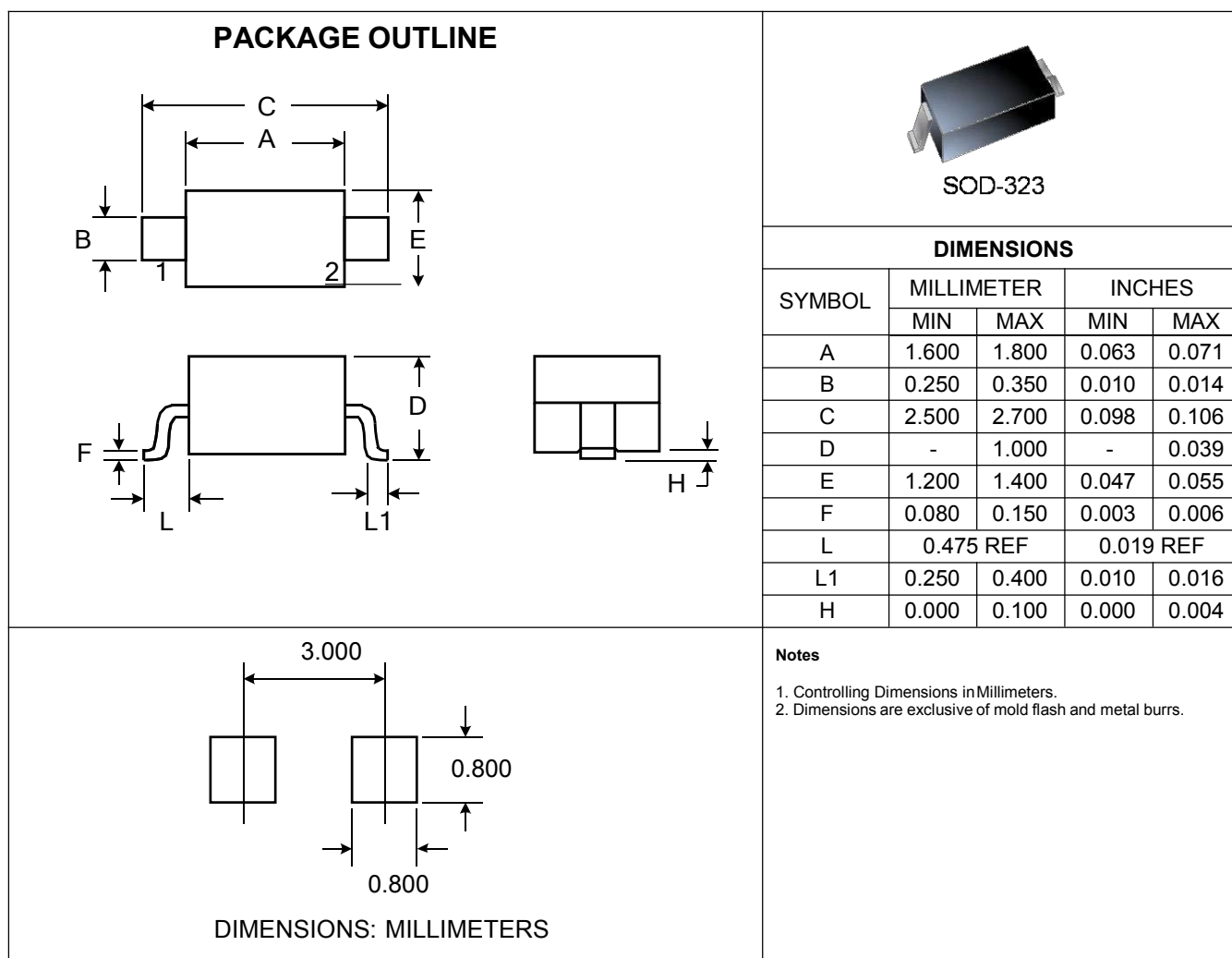


Figure 5: Pulse Waveform



**Outline Drawing – SOD323**

**Marking Codes**

Part Number	Marking Code
BSD3A031V	03
BSD3C031V	3B
BSD3A051V	05
BSD3C051V	5B
BSD3A081V	08
BSD3C081V	8B
BSD3A121V	12
BSD3C121V	AB
BSD3A151V	15
BSD3C151V	BB
BSD3A241V	24
BSD3C241V	CB

**Package**

Qty: 3k/Reel