

## **Discription**

The BSD5C051V protects sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD) and other voltage induced transient events. Excellent clamping capability, low leakage, low capacitance, and fast response time provide best in class protection on designs that are exposed to ESD. It gives designer the flexibility to protect one bi-directional

line in applications where arrays are not practical.



SOD-523

### **Features**

Transient protection for high-speed data lines IEC 61000-4-2(ESD) ±30kV (Contact) ±30kV (Air) IEC 61000-4-4(EFT) 40A (5/50 ns)

★ Peak power dissipation: 128W (8/20us)

Working voltages: 5V

★ Protects one Vcc or data line

★ Low clamping voltage

★ Low leakage current



Circuit Diagram

## **Ordering Information**

Product ID	Pack	Qty(PCS)
BSD5C051V	SOD-523	3000

## Absolute Ratings(Tamb = 25°C)

Symbol	Parameter	Value	Units
P <sub>PP</sub>	Peak Pulse Power ( $t_p = 8/20 \mu s$ )	128	W
TL	Maximum lead temperature for soldering during 10s	260	°C
T <sub>stg</sub>	Storage Temperature Range	-55 to +155	°C
T <sub>op</sub>	Operating Temperature Range	-40 to +125	°C
$T_j$	Maximum junction temperature	150	°C
	IEC61000-4-2 (ESD) air discharge contact discharge	±30 ±30	KV

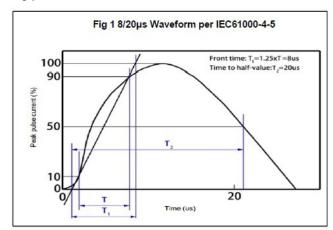


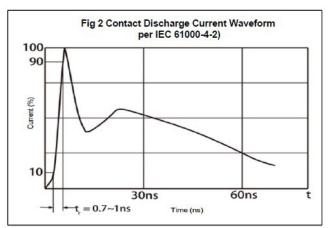
# **Electrical Characteristics**

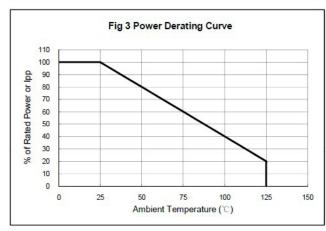
Symbol	Parameter	Test Condition	Min Typ		Max	Units
$V_{RWM}$	Reverse Working Voltage				5.0	٧
$V_{BR}$	Reverse Breakdown Voltage	I <sub>T</sub> = 1mA	5.6		9.0	V
<b>I</b> R	Reverse Leakage Current	V <sub>RWM</sub> = 5.0V			0.1	μA
Vc	Clamping Voltage	$I_{PP} = 5A, t_P = 8/20 \mu s$			11.6	V
		$I_{PP} = 8A, t_P = 8/20 \mu s$			16	V
C₁	Junction Capacitance	V <sub>R</sub> = 0V, f = 1MHz		10	15	pF

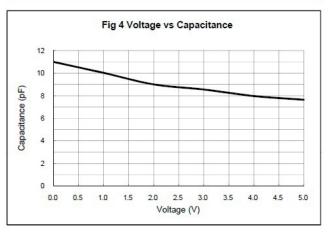


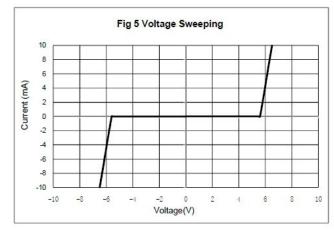
# **Typical Characteristics**

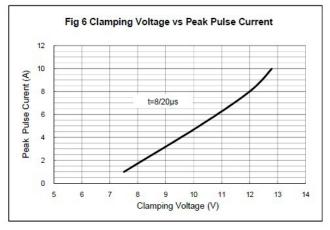






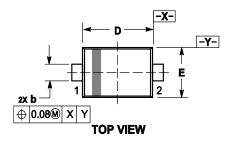


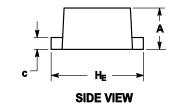


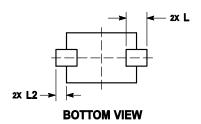




### **Outline And Dimensions**





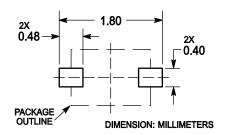


#### Notes:

- 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
- 2. CONTROLLING DIMENSION: MILLIMETERS.
- 3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
- 4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
Α	0.50	0.60	0.70	0.020	0.024	0.028
b	0.25	0.30	0.35	0.010	0.012	0.014
С	0.07	0.14	0.20	0.003	0.006	0.008
D	1.10	1.20	1.30	0.043	0.047	0.051
Е	0.70	0.80	0.90	0.028	0.031	0.035
H <sub>E</sub>	1.50	1.60	1.70	0.059	0.063	0.067
L	0.30 REF		0.012 REF			
L <sub>2</sub>	0.15	0.20	0.25	0.006	0.008	0.010

# **Soledering Footprint**





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