

## Specification Status: Released

### BENEFITS

- Silicon ESD device in an EIA-0201 size rectangular passive component SMT package
- Standard PCB assembly and rework processes
- Bi-directional operation allows placement on PCB without orientation constraint
- Appropriate for ESD protection in space-constrained portable electronics and mobile handsets
- Suitable for +5V operating voltage applications
- Helps protect electronic circuits against damage from Electrostatic Discharge (ESD) events
- Assist equipment to pass IEC61000-4-2, level 4 testing
- RoHS compliant and Halogen Free

### FEATURES

- Input capacitance – 4pF (typ)
- Low leakage current – 1.0 $\mu$ A (max)
- Low working reverse voltage – 6.0V (max)
- ESD maximum rating per IEC61000-4-2 standard
  - $\pm 10$ kV contact discharge <sup>(1)</sup>
  - $\pm 16$ kV air discharge
- Capable of withstanding numerous ESD strikes
- Small package size: 0.60mm x 0.30mm (typ)
- Low package height: 0.30mm (typ)

### APPLICATIONS

- Cellular phones and portable electronics
- Digital cameras and camcorders
- USB 2.0 and computer I/O ports
- Keypads, pushbuttons, low voltage DC lines, speakers, headphones, microphones
- Applications requiring high ESD performance

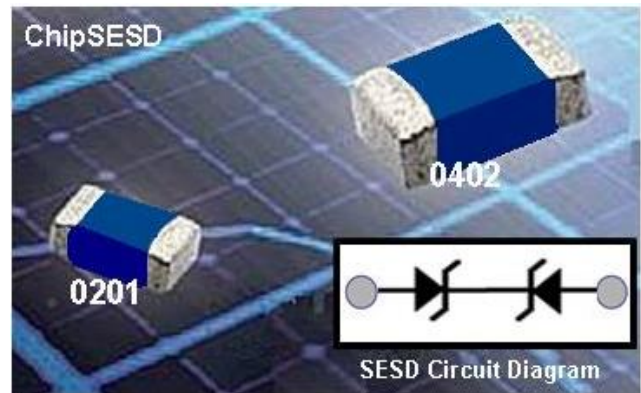
**RoHS Compliant ELV Compliant Halogen Free \***

Directive 2000/53/EC  
Compliant

Directive 2002/95/EC  
Compliant

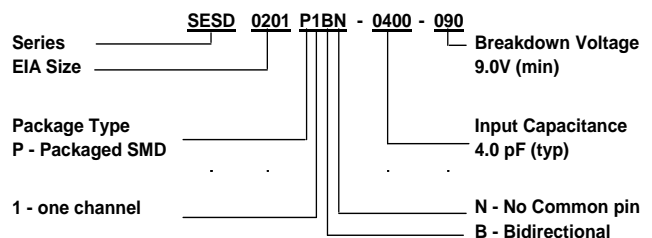


\* Halogen Free refers to: Br $\leq$ 900ppm, Cl $\leq$ 900ppm, Br+Cl $\leq$ 1500ppm  
Terminal finish: 100% Matte Tin (Sn)



### PART NUMBERING

### MATERIALS INFORMATION



# ChipSESD

## Silicon ESD Protector

### Overvoltage Protection Device

PRODUCT: SESD0201P1BN-0400-090

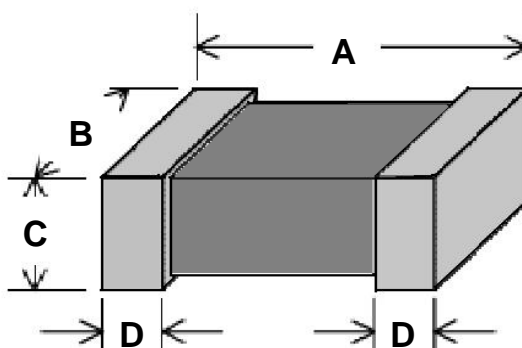
DOCUMENT: SCD27763  
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Device Characteristics @ T = 25°C	Min	Typ	Max	Unit
Input Capacitance @ $V_i = 0V$ , $f = 1MHz$	--	4.0	5.0	pF
Working Reverse Voltage (peak) - $V_{RWM}$	--	--	6.0	V
Breakdown Voltage - $V_{br}$ @ $I_t = 1mA^{(2)}$	9.0	11.0	--	V
Leakage current @ $V_{RWM} = 6.0V$	--	--	1.0	$\mu A$
Clamping Voltage @ $I_{pp}=2A$ , $t_p=(8/20\mu s)$	--	$\pm 10.0$	$\pm 12.0$	V
ESD contact discharge per IEC61000-4-2 standard <sup>(1)</sup>	--	--	$\pm 10$	kV
ESD air discharge per IEC61000-4-2 standard	--	--	$\pm 16$	kV
Operating ( $T_{junction}$ ) and Storage Temperature Range	-40 to +125			°C

<sup>(1)</sup> 10kV @  $\pm 50$  pulses under IEC61000-4-2; 8kV @ 1,000 pulses under IEC61000-4-2

<sup>(2)</sup>  $V_{br}$  is measured at test current  $I_t$

## DEVICE DIMENSIONS

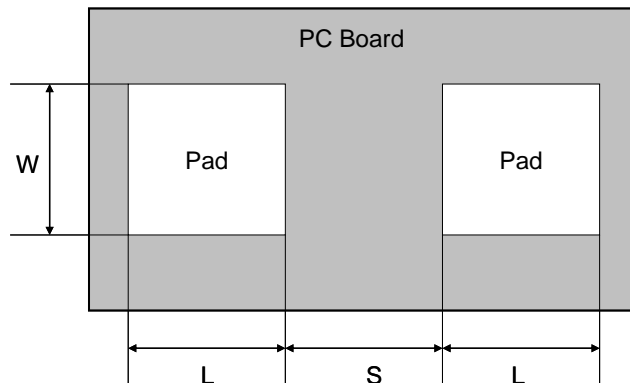


*Drawing Not To Scale*

Typical	A	B	C	D
mm	$0.60 \pm 0.05$	$0.30 \pm 0.05$	$0.30 \pm 0.05$	$0.21 \pm 0.07$
mils*	$23.62 \pm 2.0$	$11.81 \pm 2.0$	$11.81 \pm 2.0$	$8.27 \pm 2.8$

\* Round off approximation

## RECOMMENDED LANDING PATTERN:



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	L	S	W
mm	$0.28 \pm 0.01$	$0.19 \pm 0.01$	$0.30 \pm 0.01$
mils*	$11.0 \pm 0.4$	$7.5 \pm 0.4$	$11.8 \pm 0.4$

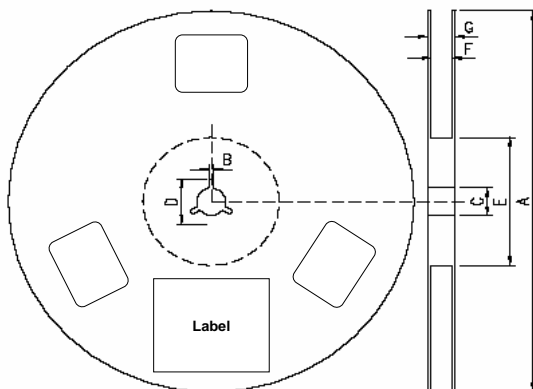
\* Round off approximation

- Recommended solder thickness: 150 to 200  $\mu\text{m}$
- Recommended rework procedure:
  - Soldering iron tip temperature should be less than 350°C
  - Apply iron tip to solder for less than 5 seconds
  - Do not apply solder iron tip to the body of this product directly

## PACKAGING

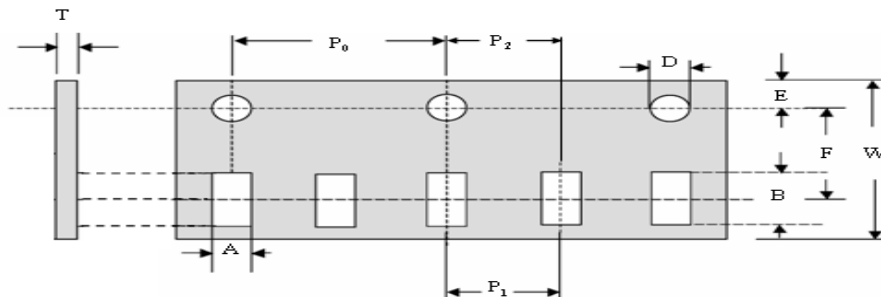
Packaging	Tape & Reel	Standard Box
SESD0201P1BN-0400-090	15,000	75,000

## REEL DIMENSIONS



Dimension	A	B	C	D	E	F	G
(mm)	$178.0 \pm 2.0$	$2.0 \pm 0.5$	$13.0 \pm 0.5$	$21.0 \pm 0.8$	$62.0 \pm 1.5$	$9.0 \pm 0.5$	$13.0 \pm 1.0$

## CARRIER TAPE DIMENSIONS

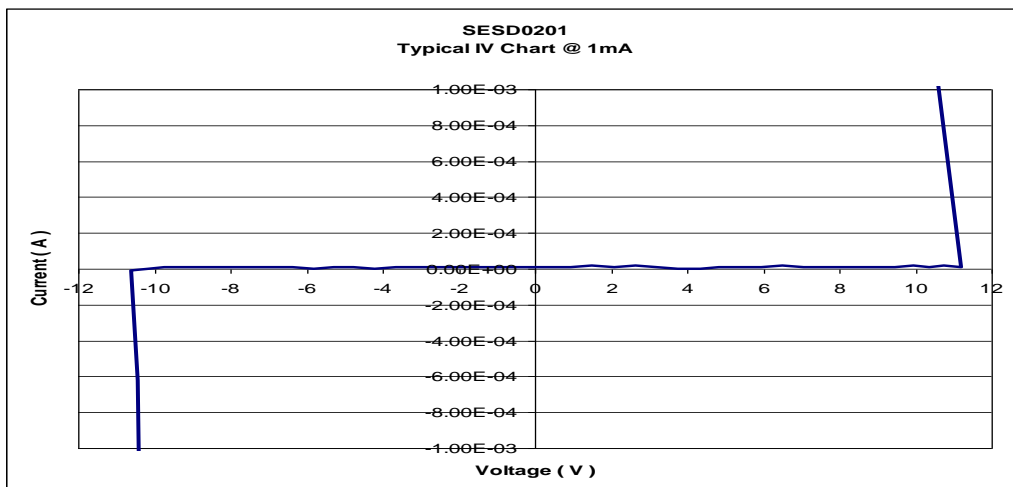


Dimension	A	B	D	E	F	W
(mm)	0.39 ± 0.03	0.69 ± 0.03	1.55 ± 0.05	1.75 ± 0.05	3.5 ± 0.05	8.0 ± 0.1

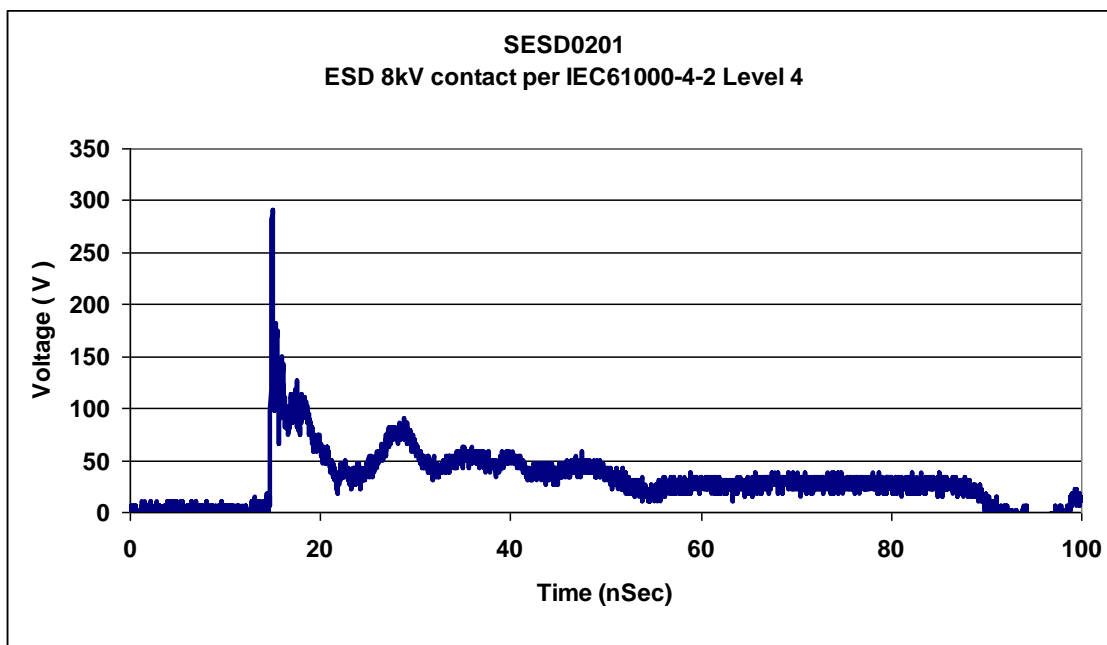
  

Dimension	P <sub>0</sub>	P <sub>1</sub>	P <sub>2</sub>	T
(mm)	4.0 ± 0.1	2.0 ± 0.05	2.0 ± 0.05	0.42 ± 0.03

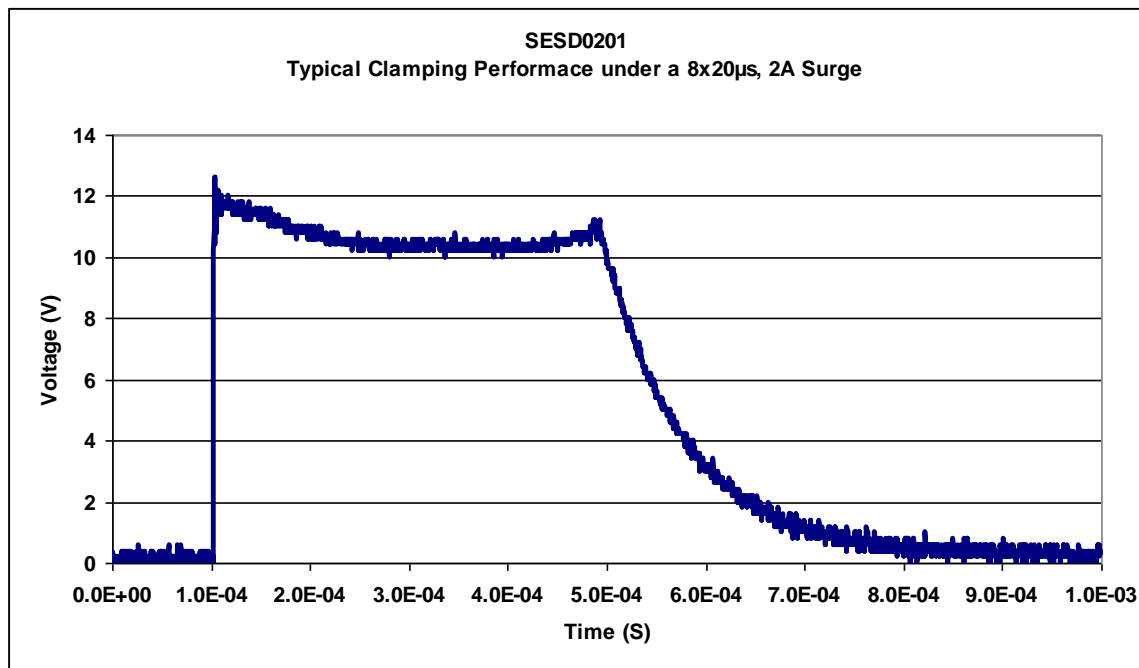
**FIGURE 1: TYPICAL IV CURVE**



**FIGURE 2: ESD CLAMPING VOLTAGE – 8kV Contact**



**FIGURE 3: ESD CLAMPING VOLTAGE – 8x20 $\mu$ s, 2A Surge**



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