

## SuperESD - SENC3Dxx1BA

### 1. Description

The SENC3Dxx1BA is Transient Voltage Suppressor that designed to protect components which are connected to data and transmission lines against electrostatic discharge (ESD), electrical fast transient (EFT), and lightning. All pins are rated to withstand 30kV ESD pulses using the IEC61000-4-2 air discharge method.

### 2. Features

- IEC 61000-4-2 Level 4 ESD Protection
  - ±30kV Contact Discharge
  - ±30kV Air Discharge
- 350W Peak pulse Power (8/20us)
- Low clamping voltage
- Low leakage current
- RoHS compliant
- Protecting one bi-directional lines
- Working voltage: 3.3/5/8/12/15/24V

### 3. Applications

- Portable electronic
- Control & monitoring systems
- Servers, notebooks, and desktop PCs
- Set-top box
- Communications systems
- Cellular handsets and accessories

### 4. Ordering Information

Part Number	Package	Material	Packing	Quantity per reel	Flammability Rating	Reel Size	
SENC3Dxx1BA	SOD-323	Halogen free	Tape & Reel	3,000 PCS	UL 94V-0	7 inches	
Marking for the SENC3Dxx1B series							
V <sub>RWM</sub>	3.3V	5V	8V	12V	15V	24V	-
Marking	AB	AC	2C	AD	AE	AF	-

Table-1 Ordering information

## 5. Pin Configuration and Functions

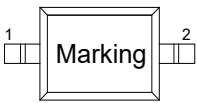
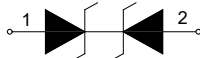
Pin	Name	Description	Outline	Circuit Diagram
1	IO1	Connect to IO		
2	IO2	Connect to IO		

Table-2 Pin configuration

## 6. Specification

### 6.1. Absolute Maximum rating

Over operating free-air temperature range (unless otherwise noted)

Parameters	Symbol	Min.	Max.	Unit
Peak pulse power (tp=8/20us)@25°C	P <sub>pk</sub>	-	350	W
Peak pulse current (tp=8/20us)@25°C	I <sub>PP</sub>		Refer to Table-5	A
ESD (IEC61000-4-2 air discharge) @25°C	V <sub>ESD</sub>	-	±30	kV
ESD (IEC61000-4-2 contact discharge) @25°C	V <sub>ESD</sub>	-	±30	kV
Junction temperature	T <sub>J</sub>	-	125	°C
Operating temperature	T <sub>OP</sub>	-40	85	°C
Storage temperature	T <sub>STG</sub>	-55	150	°C
Lead temperature	T <sub>L</sub>	-	260	°C

Table-3 Absolute Maximum rating

## 6.2. Electrical Characteristics

Symbol	Description
$V_{RWM}$	Rated reverse stand-off voltage
$V_{BR}$	Minimum breakdown voltage @ $I_T = 1mA$
$V_{CL}$	Typical Clamping voltage
$I_{PP}$	Maximum peak pulse current
$I_R$	Reverse leakage current @ $V_{RWM}$
$C_O$	Typical line capacitance ( $V_{IO}=0V$ , $V_{P-P} = 30mV$ , $f = 1MHz$ )

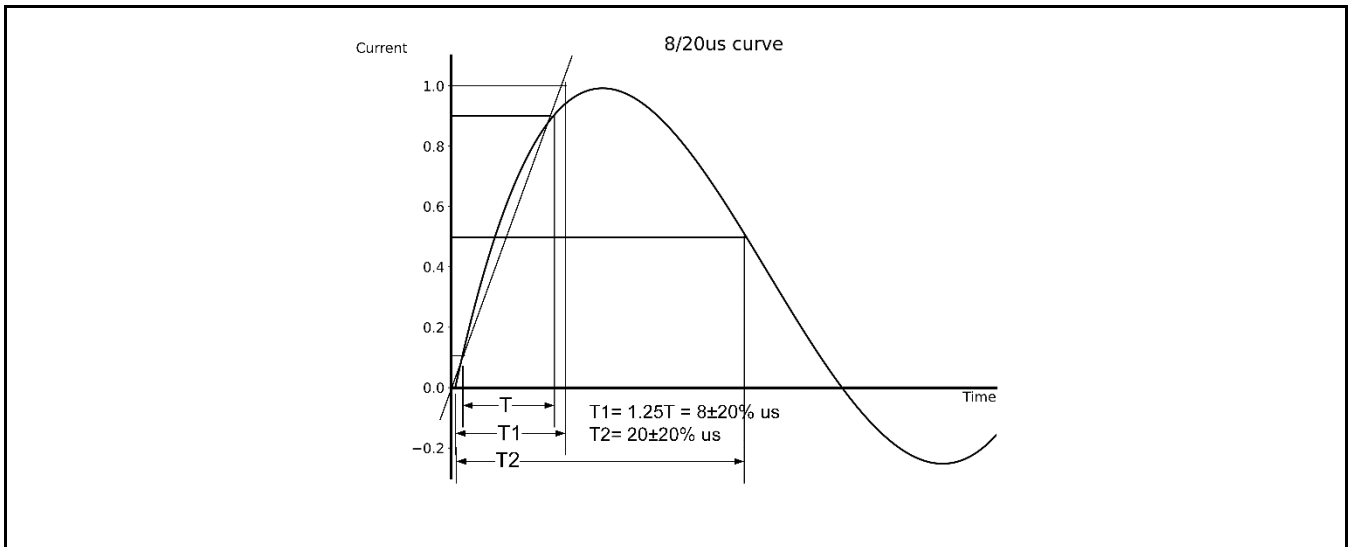
Table-4 Parameters Description

At  $T_A = 25^\circ C$  unless otherwise noted

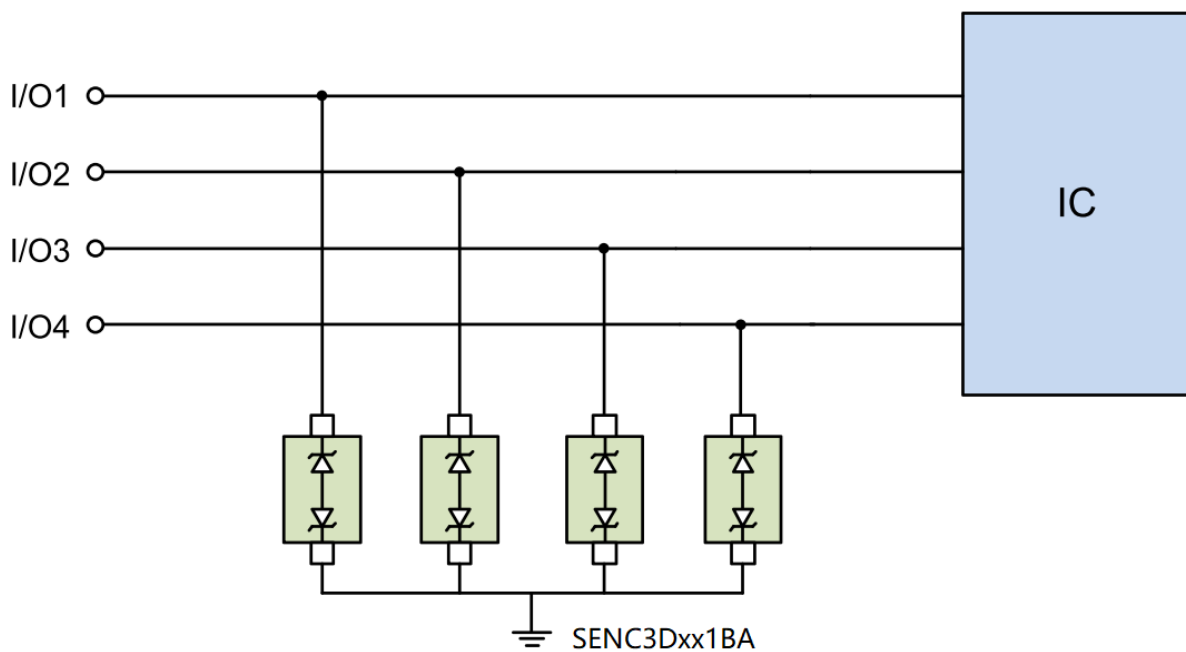
Part Number	$V_{RWM}$	$V_{BR}$	$V_{CL}@I=1A$	$I_{PP}$	$V_{CL}@I=I_{PP}$	$I_R$	$C_O$
	(V)	(V)	(V)	(A)	(V)	( $\mu A$ )	(pF)
SENC3D3V1BA	3.3	4.5	8.5	16.0	18.0	1.0	100
SENC3D5V1BA	5.0	6.5	9.5	15.0	20.0	1.0	90
SENC3D8V1BA	8.0	8.5	11.0	12.0	22.0	1.0	70
SENC3D12V1BA	12.0	13.3	20.0	8.0	35.0	1.0	50
SENC3D15V1BA	15.0	16.5	25.0	6.0	45.0	1.0	30
SENC3D24V1BA	24.0	26.0	40.0	4.0	55.0	1.0	20

Table-5 Electrical Characteristics for All Series

### 7. Typical Characteristic

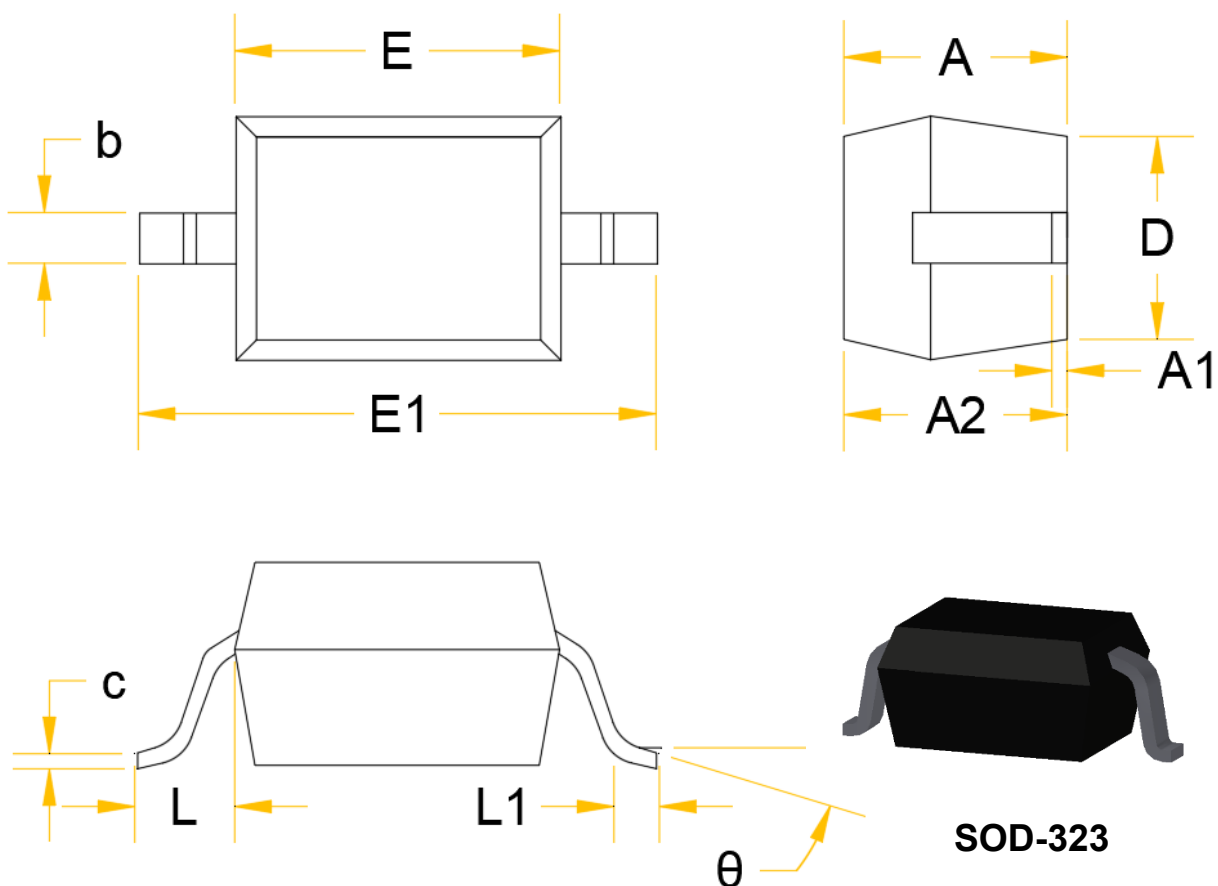


### 8. Typical Application



Typical Interface Application

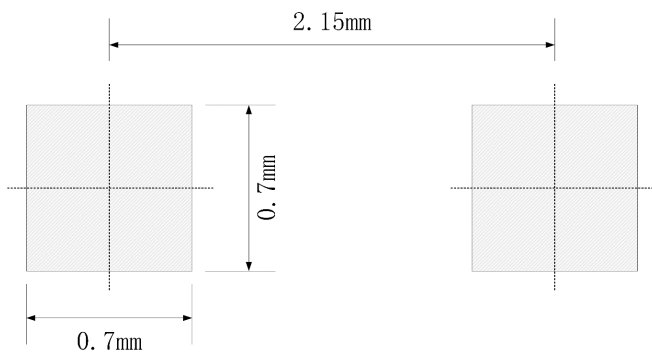
9. Dimension



Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min.	Max.	Min.	Max.
A		1.000		0.039
A1	0.000	0.100	0.000	0.004
A2	0.800	0.900	0.031	0.035
b	0.250	0.350	0.010	0.014
C	0.080	0.150	0.003	0.006
D	1.200	1.400	0.047	0.055
E	1.600	1.800	0.063	0.071
E1	2.550	2.750	0.100	0.108
L	0.475REF		0.019REF	
L1	0.250	0.400	0.010	0.016
θ	0°	8°	0°	8°

Table-6 product dimensions

## 10. Recommended Land Pattern

**Note:**

1. Controlling dimension: in millimeters
2. General tolerance:  $\pm 0.05\text{mm}$
3. The pad layout is for reference only
4. Unit: mm

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