

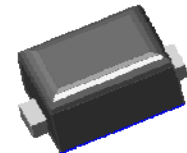
## Bi-directional ESD Protection TVS Diode

### General Description

The NDB171 device is help protect sensitive electronic equipment against electrostatic discharge (ESD). The NDB171 device is safely dissipate ESD strikes, exceeding the IEC 61000-4-2 International Standard, Level 4 ( $\pm 8\text{kV}$  contact discharge and  $\pm 15\text{kV}$  air discharge).

### Features and Benefits

- Low capacitance and fast response time
- Bidirectional type pin configuration structure
- Compact SMD package saves board space and facilitates layout in space-critical applications
- Full lead(Pb)-free device and RoHS compliant
- Available in "Green" device


**SOD-923**

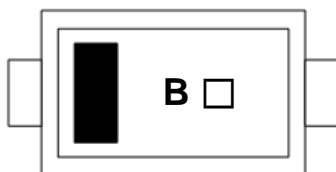

### Applications

- ESD Protection of PC ports, including USB ports, Cell phone handsets and accessories, etc.

### Ordering Information

Part Number	Marking Code	Package	Packaging
NDB171	B □	SOD-923	Tape & Reel

### Marking Information


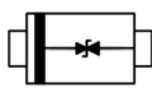


**B = Specific Device Code**

□ = Year & Week Code Marking

■ = Color band denote cathode

### Pinning Information

Pin	Description	Simplified Outline	Graphic Symbol
1	Cathode		
2	Anode		

## Absolute Maximum Ratings (T<sub>amb</sub>=25°C, Unless otherwise specified)

Characteristic	Symbol	Ratings	Unit
ESD withstand voltage per IEC 61000-4-2 standard	V <sub>ESD(Air)</sub>	±15	kV
	V <sub>ESD(Contact)</sub>	±8	
Peak pulse power ( t <sub>p</sub> = 8/20us )	P <sub>PK</sub>	100	W
Power dissipation <sup>1)</sup>	P <sub>D</sub>	100	mW
Junction temperature	T <sub>J</sub>	150	°C
Storage temperature range	T <sub>stg</sub>	-55 ~ +150	°C

<sup>1)</sup> Device mounted on FR-4 board with recommended pad layout.

## Thermal Characteristics (T<sub>amb</sub>=25°C, Unless otherwise specified)

Characteristic	Symbol	Ratings	Unit
Thermal resistance, junction to ambient <sup>1)</sup>	R <sub>th(j-a)</sub>	1250	°C/W

<sup>1)</sup> Device mounted on FR-4 board with recommended pad layout.

## Electrical Characteristics (T<sub>amb</sub>=25°C, Unless otherwise specified)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Breakdown voltage	V <sub>BR</sub>	I <sub>R</sub> =1mA	5.78	-	7.82	V
Reverse current	I <sub>R</sub>	V <sub>R</sub> =3.5V	-	-	0.5	uA
Total capacitance	C <sub>T</sub>	V <sub>R</sub> =0V, f=1MHz	-	25	-	pF

Rating and Characteristic Curves

Fig. 1) Typical Zener Characteristics

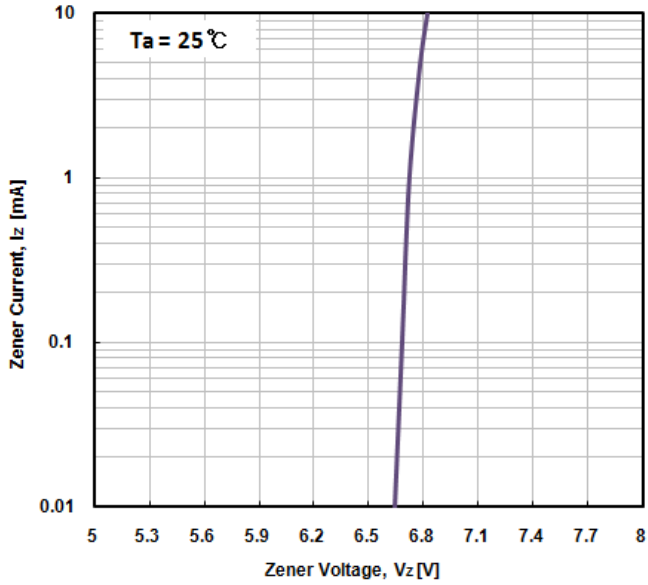


Fig. 2) Power Dissipation vs. Ambient Temperature

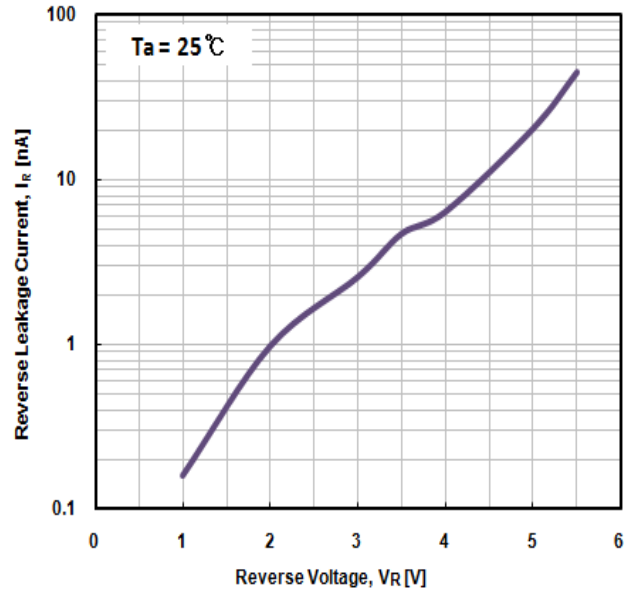


Fig. 3) Typical Capacitance Characteristics

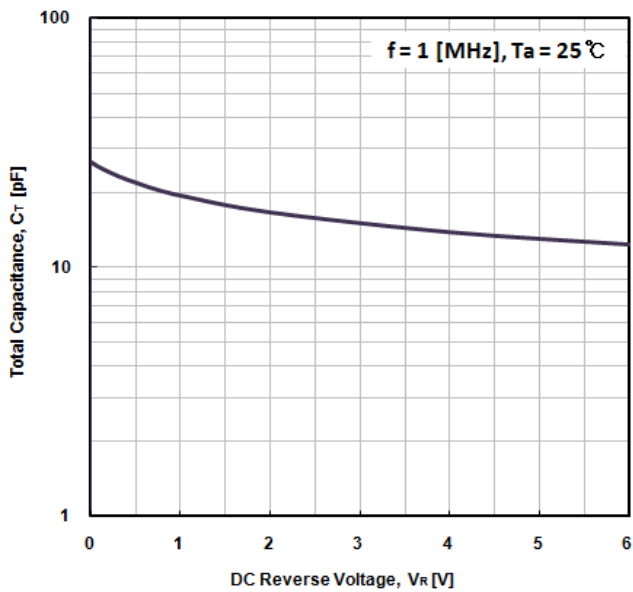
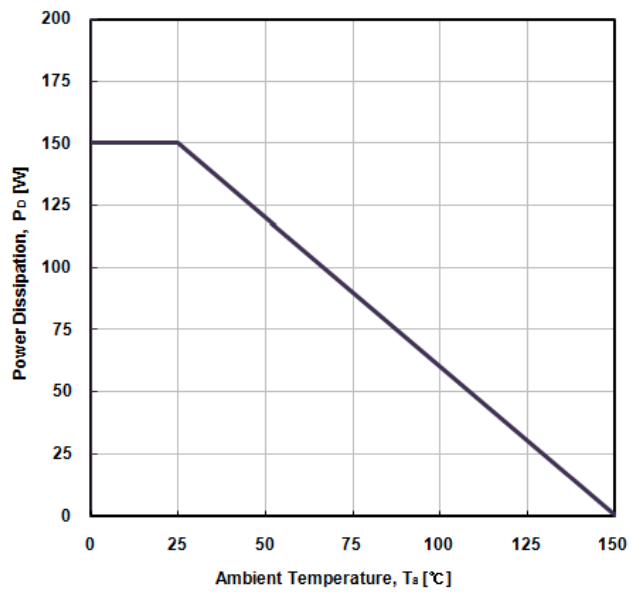
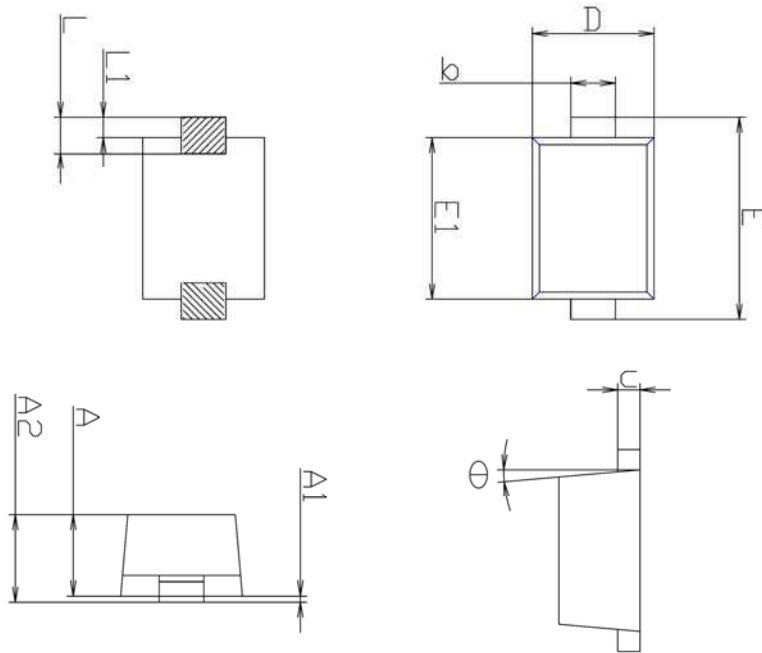


Fig. 4) Power Dissipation vs. Ambient Temperature

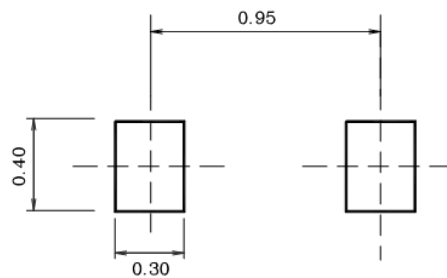


## Package Outline Dimensions (Unit : mm)



SYMBOL	MILLIMETERS			NOTE
	MINIMUM	NOMINAL	MAXIMUM	
A	0.39	0.40	0.41	
A1	-	-	0.05	
A2	-	-	0.43	
b	0.17	0.22	0.27	
c	0.08	0.11	0.14	
D	0.55	0.60	0.65	
E	0.90	1.00	1.10	
E1	0.75	0.80	0.85	
L	0.10	0.18	0.26	
L1	0.05	0.10	0.15	
$\ominus$	5° REF			

### ※ Recommend PCB solder land (Unit : mm)



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