

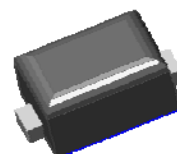
Bi-directional ESD Protection TVS Diode

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



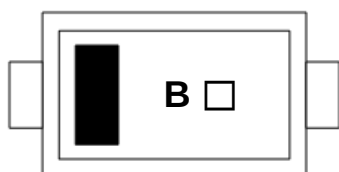
Applications

- 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

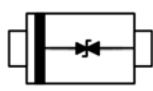


B = Specific Device Code

□ = Year & Week Code Marking

■ = Color band denote cathode

Pinning Information

Pin	Description	Simplified Outline	Graphic Symbol
1	Cathode		
2	Anode		

Absolute Maximum Ratings (T_{amb}=25°C, Unless otherwise specified)

Characteristic	Symbol	Ratings	Unit
ESD withstand voltage per IEC 61000-4-2 standard	V _{ESD(Air)}	±15	kV
	V _{ESD(Contact)}	±8	
Peak pulse power (tp = 8/20us)	P _{PK}	100	W
Power dissipation ¹⁾	P _D	100	mW
Junction temperature	T _J	150	°C
Storage temperature range	T _{stg}	-55 ~ +150	°C

¹⁾ Device mounted on FR-4 board with recommended pad layout.

Thermal Characteristics (T_{amb}=25°C, Unless otherwise specified)

Characteristic	Symbol	Ratings	Unit
Thermal resistance, junction to ambient ¹⁾	R _{th(j-a)}	1250	°C/W

¹⁾ Device mounted on FR-4 board with recommended pad layout.

Electrical Characteristics (T_{amb}=25°C, Unless otherwise specified)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Breakdown voltage	V _{BR}	I _R =1mA	5.78	-	7.82	V
Reverse current	I _R	V _R =3.5V	-	-	0.5	uA
Total capacitance	C _T	V _R =0V, f=1MHz	-	25	-	pF

Rating and Characteristic Curves

Fig. 1) Typical Zener Characteristics

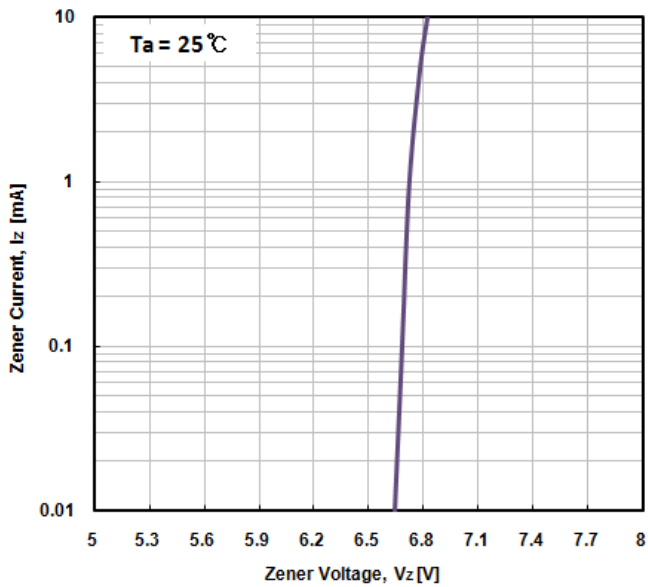


Fig. 2) Power Dissipation vs. Ambient Temperature

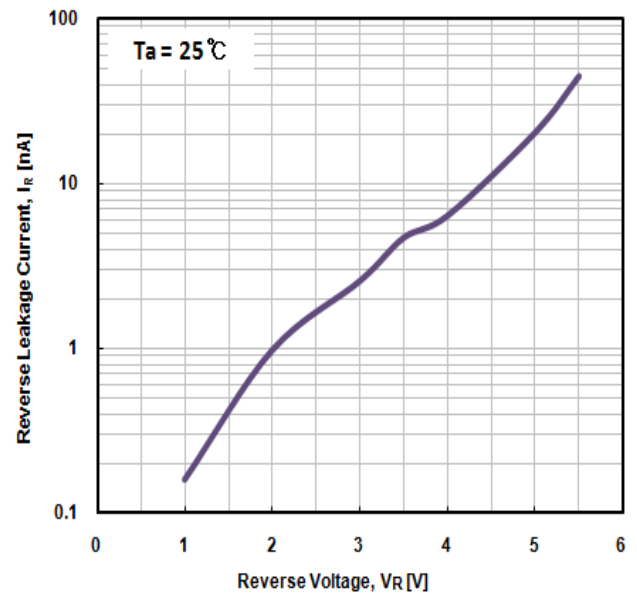


Fig. 3) Typical Capacitance Characteristics

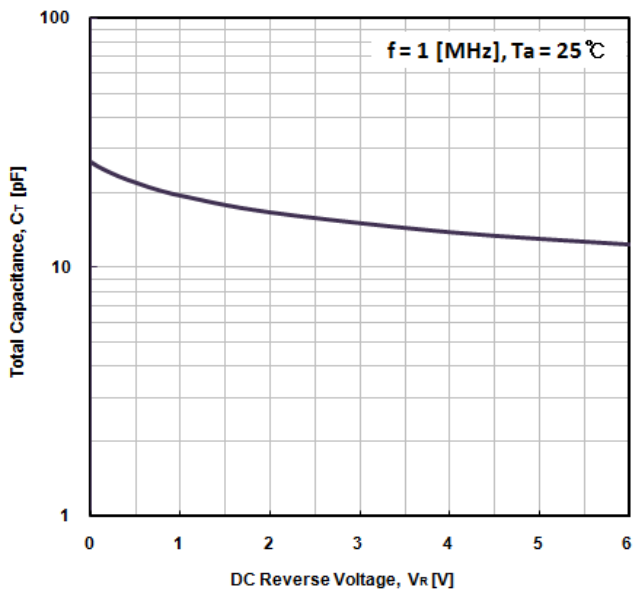
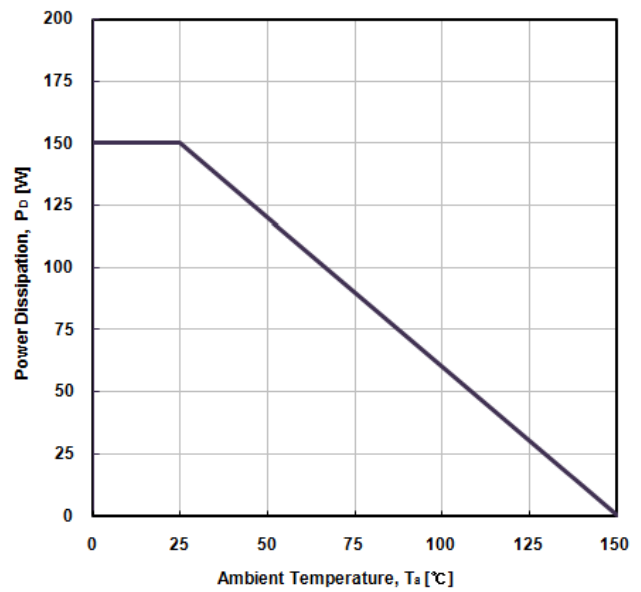
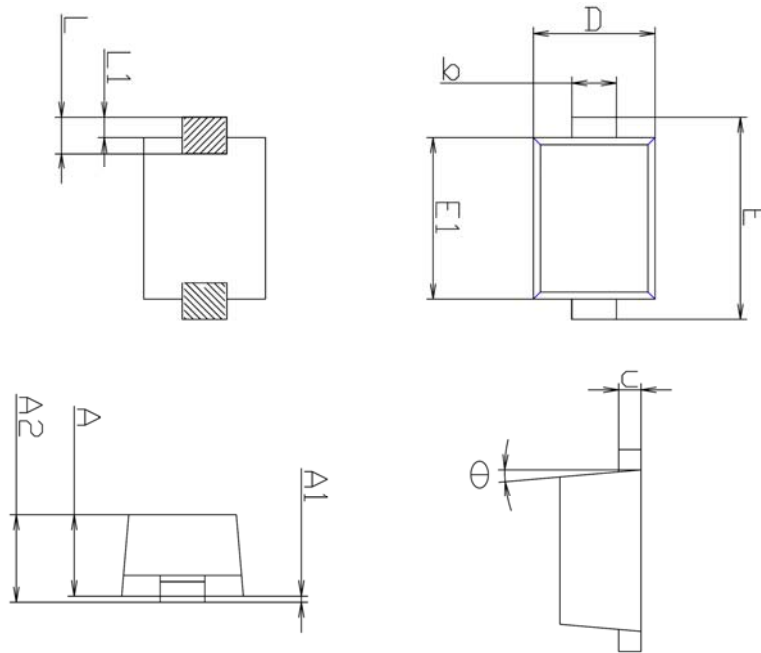


Fig. 4) Power Dissipation vs. Ambient Temperature

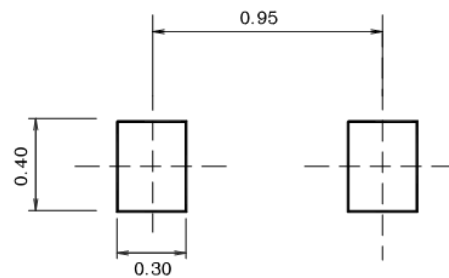


Package Outline Dimensions (Unit : mm)



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	
⊖	5° REF			

※ Recommend PCB solder land (Unit : mm)



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