

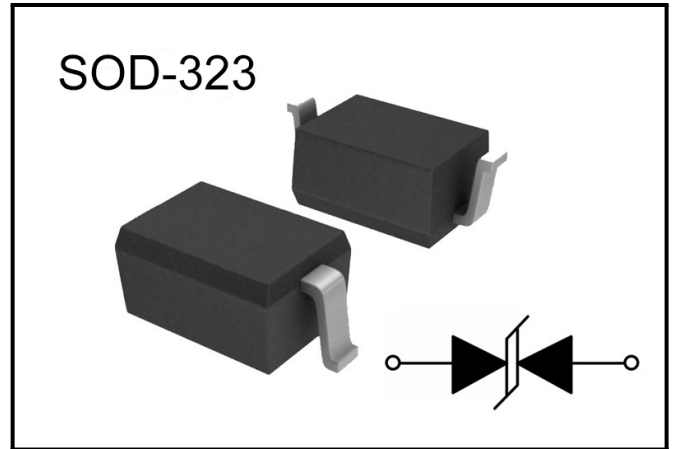
# BNLPESD5V0S1BA

ESD Protection Diode

## Features

- 120Watts peak pulse power (tp = 8/20μs)
- Bidirectional configurations
- Solid-state silicon-avalanche technology
- Low clamping Voltage
- Low leakage current
- Protection one data/power line
- IEC 61000-4-2 ±30kV contact ; ±30kV air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 8A (8/20μs)

## Package



## Applications

- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Pagers Peripherals

## Mechanical Characteristics

- SOD-323 package
- Molding compound flammability rating: UL 94V-0
- Packaging: Tape and Reel
- RoHS/WEEE Compliant

## Marking



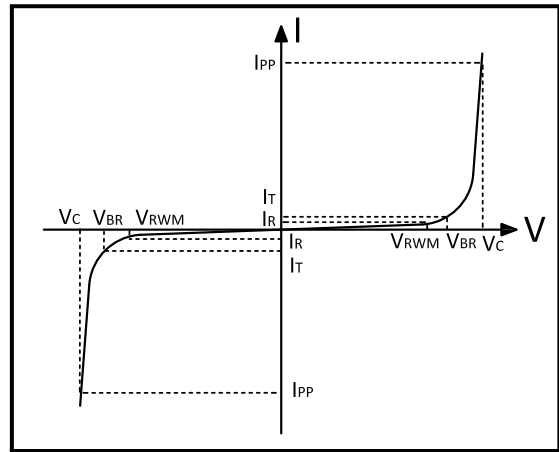
## Ordering information

Order code	Package	Base qty	Delivery mode
BNLPESD5V0S1BA	SOD-323	3k	Tape and reel



### Electrical Parameters ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$V_{RWM}$	Peak Reverse Working Voltage
$I_R$	Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_T$	Test Current



Note: 8/20us pulse Waveform.

### Absolute Maximum Rating

Rating	Symer	Value	Units
Peak Pulse Power ( $t_p = 8/20\mu\text{s}$ )	$P_{PP}$	120	Watts
Peak Pulse Current ( $t_p = 8/20\mu\text{s}$ )	$I_{PP}$	8	A
ESD per IEC 61000-4-2 (Air)	$V_{ESD}$	30	KV
ESD per IEC 61000-4-2 (Contact)		30	
Lead Soldering Temperature	$T_L$	260(10seconds)	$^\circ\text{C}$
Junction Temperature	$T_J$	-55 to + 150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to + 150	$^\circ\text{C}$

### Electrical Characteristics

Parameter	Symer	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	$V_{RWM}$	-	-	-	5.0	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T = 1\text{mA}$	6.0	7.5	9.5	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5\text{V}, T = 25^\circ\text{C}$	-	-	0.2	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{PP} = 8\text{A}, t_p = 8/20\mu\text{s}$	-	11	15	V
Junction Capacitance	$C_j$	$V_R = 0\text{V}, T = 25^\circ\text{C}, f = 1\text{MHZ}$	-	18	23	pF





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## Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

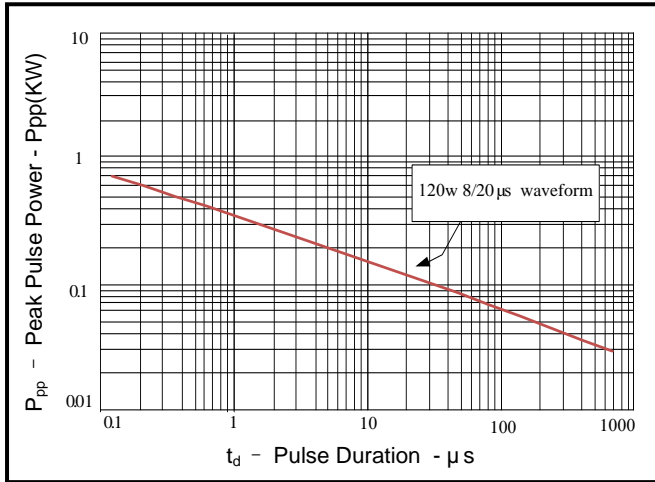


Figure 2: Power Derating Curve

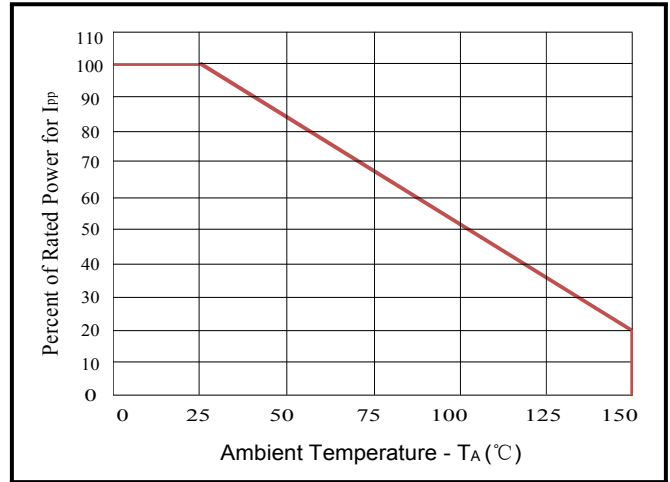


Figure 3: Pulse Waveform

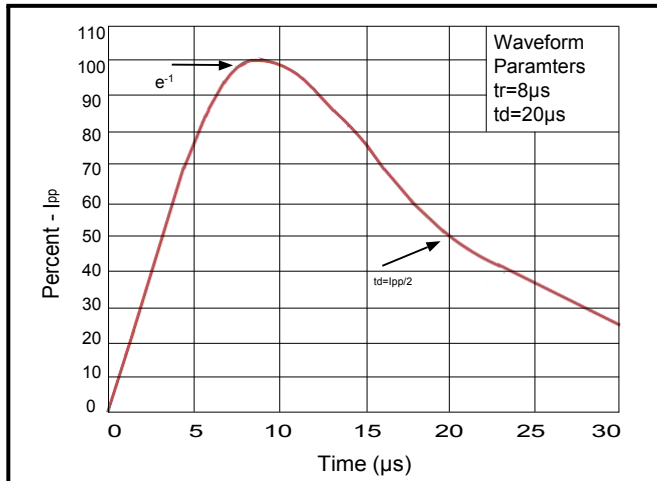
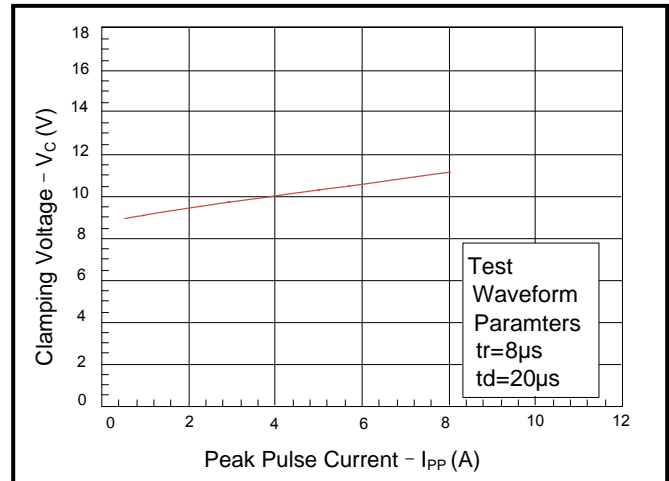


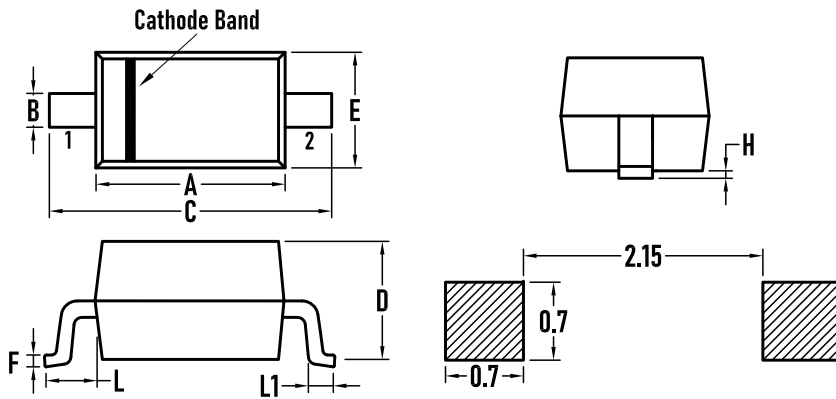
Figure 4: Clamping Voltage vs. Ipp



**BNLPESD5V0S1BA**

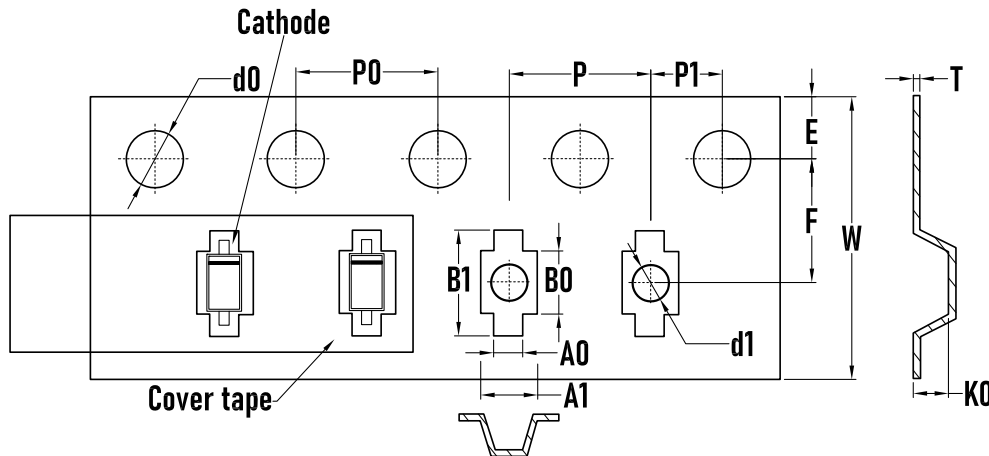
ESD Protection Diode

**Outline Drawing – SOD-323**



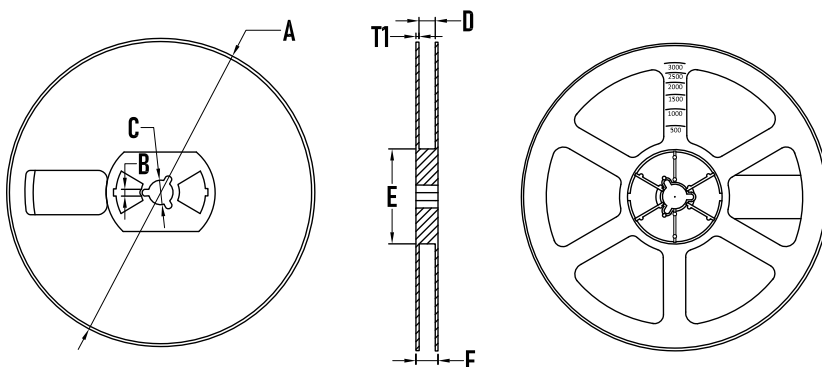
SYMBOL	MILLIMETER		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	1.600	1.800	0.063	0.071
B	0.250	0.350	0.010	0.014
C	2.500	2.700	0.098	0.106
D	–	1.000	–	0.039
E	1.200	1.400	0.047	0.055
F	0.080	0.150	0.003	0.006
L	0.475REF		0.019REF	
L1	0.250	0.400	0.010	0.016
H	0.000	0.100	0.000	0.004

**Packaging Tape - SOD-323**



SYMBOL	MILLIMETER
A0	0.80±0.10
A1	1.48±0.10
B0	1.80±0.10
B1	3.00±0.10
d0	1.55±0.10
d1	1.00±0.05
E	1.75±0.10
F	3.50±0.10
K0	1.05±0.10
P	4.00±0.10
P0	4.00±0.10
P1	2.00±0.10
W	8.00±0.30
T	0.25 ±0.05

**Packaging Reel**



SYMBOL	MILLIMETER
A	177.8±0.2
B	2.7±0.2
C	13.5±0.2
D	9.6±0.3
E	54.5±0.2
F	12.3±0.3
T1	1.0±0.2
Quantity	3000PCS

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Revision: 2022-Jan-1-A



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