



## Description

The HPESD5V0U1BLN protects sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD) and other voltage induced transient events. Excellent clamping capability, low leakage, low capacitance, and fast response time provide best in class protection on designs that are exposed to ESD.

It gives designer the flexibility to protect one bi-directional line in applications where arrays are not practical.



DFN1006-2L

## Specification Features:

- ★ Ultra Low Capacitance 2.5 pF
- ★ Low Clamping Voltage
- ★ Small Body Outline Dimensions: 0.039" x 0.024" (1.00 mm x 0.60 mm) Low Body
- ★ Height: 0.020" (0.5 mm) Stand-off Voltage: 5 V
- ★ Low Leakage
- ★ Response Time is Typically < 1.0 ns
- ★ IEC61000-4-2 Level 4 ESD Protection This
- ★ is a Pb-Free Device



Circuit Diagram

## Ordering information

Product ID	Pack	Qty(PCS)
HPESD5V0U1BLN	DFN1006-2L	10000

## Absolute Ratings (T<sub>amb</sub>=25°C )

Symbol	Parameter	Value	Units
P <sub>PP</sub>	Peak Pulse Power (t <sub>p</sub> = 8/20μ s)	30	W
T <sub>L</sub>	Maximum lead temperature for soldering during 10s	260	°C
T <sub>stg</sub>	Storage Temperature Range	-55 to +150	°C
T <sub>op</sub>	Operating Temperature Range	-55 to +150	°C
T <sub>j</sub>	Maximum junction temperature	150	°C
	IEC61000-4-2 (ESD)	air discharge contact discharge	± 10 ± 15
			KV



**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

Device	$V_{\text{RWM}}$ (V)	$I_R$ ( $\mu\text{A}$ ) @ $V_{\text{RWM}}$	$V_{\text{BR}}$ (V) *		$I_{\text{PP}}$ (A) **	$V_C$ (V) ** @ $I_{\text{PP}} = 1\text{A}$	$P_{\text{PK}}$ (W) **	$C$ (pF) $VR=0\text{V}, f=1\text{MHz};$
	Max	Max	Min	Max	Max	Max	Max	Typ
HPESD5V0U1BLN	5.0	1.0	5.5	8.5	2.5	10	30	2.5

\*  $V_{\text{BR}}$  is measured with a pulse test current  $I_T$  at an ambient temperature of  $25^\circ\text{C}$ .

\*\* Surge current waveform per Figure 1.

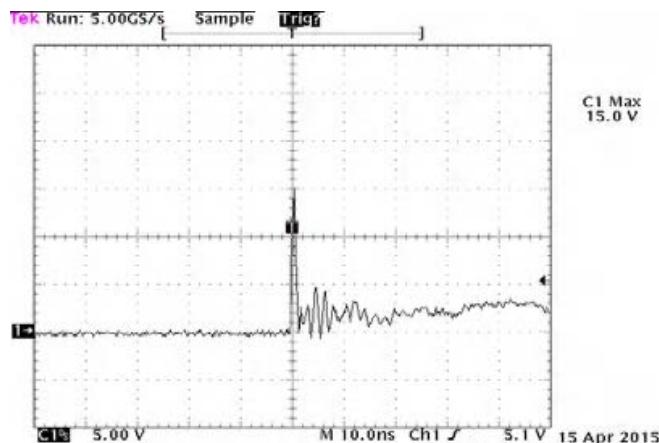


Figure 1. ESD Clamping Voltage Screenshot  
Positive 8 kV Contact per IEC61000-4-2

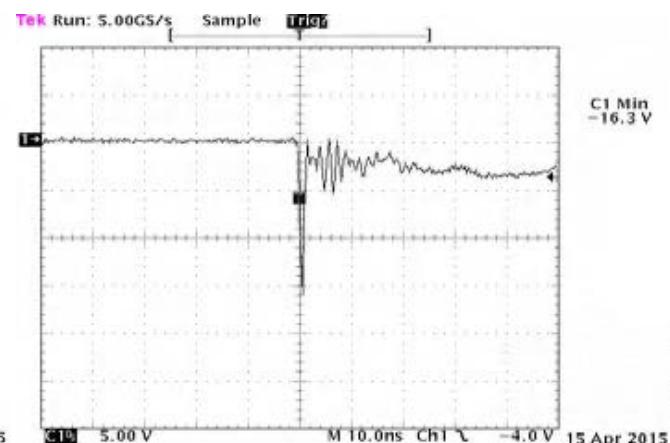


Figure 2. ESD Clamping Voltage Screenshot  
Negative 8 kV Contact per IEC61000-4-2

**IEC 61000-4-2 Spec.**

Level	Test Voltage (kV)	First Peak Current (A)	Current at 30 ns (A)	Current at 60 ns (A)
1	2	7.5	4	2
2	4	15	8	4
3	6	22.5	12	6
4	8	30	16	8

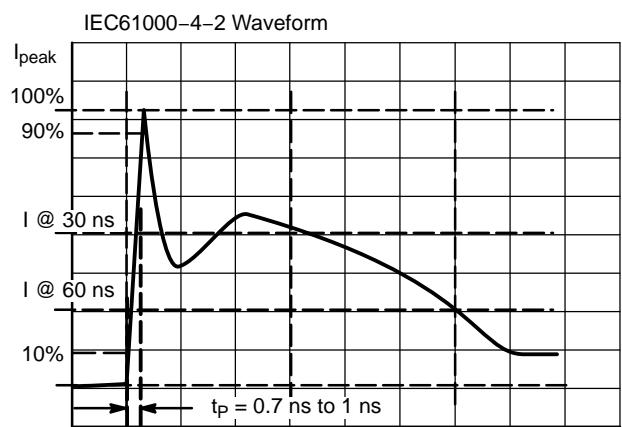


Figure 3. IEC61000-4-2 Spec

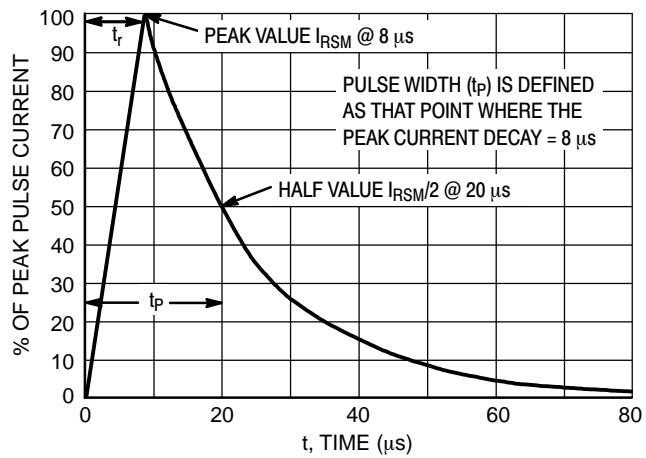
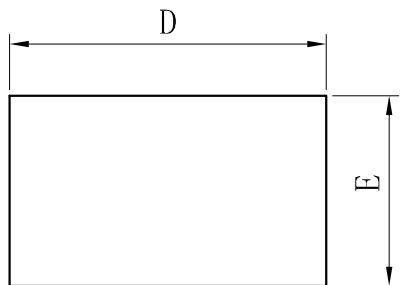


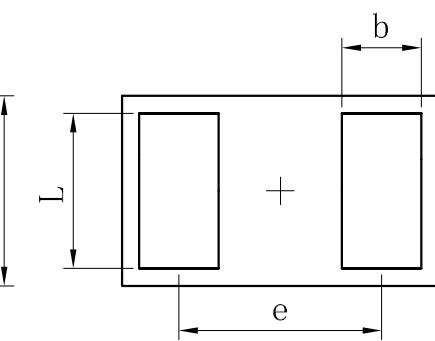
Figure 4. 8 X 20  $\mu$ s Pulse Waveform



OUTLINE AND DIMENSIONS

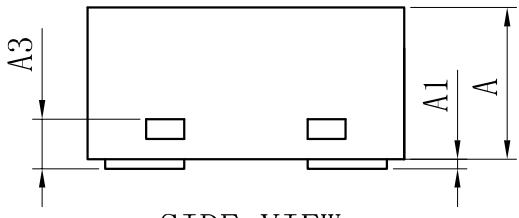


TOP VIEW



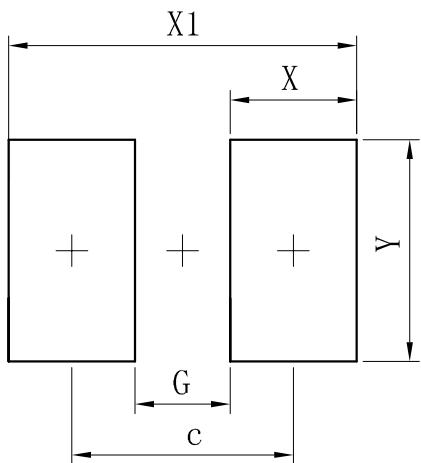
BOTTOM VIEW

DFN1006-2L			
Dim	Min	Typ	Max
D	0.95	1.00	1.05
E	0.55	0.60	0.65
e	—	0.64	—
L	0.44	0.49	0.54
b	0.20	0.25	0.30
A	0.43	0.48	0.53
A1	0	—	0.05
A3	0.127REF.		
All Dimensions in mm			



SIDE VIEW

SOLDERING FOOTPRINT



Dimensions	(mm)
c	0.70
G	0.30
X	0.40
X1	1.10
Y	0.70



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