Discription

The HPESD5V0U1BL 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

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)
HPESD5V0U1BL	DFN1006-2L	10000

Absolute Ratings(Tamb = 25°C)

Symbol	Parameter	Value	Units
P_{PP}	Peak Pulse Power (t_p = 8/20 μ s)	30	W
T_L	Maximum lead temperature for soldering during 10s	260	°C
T_{stg}	Storage Temperature Range	-55 to +150	°C
T_{op}	Operating Temperature Range	-55 to +150	°C
T_j	Maximum junction temperature	150	°C
	IEC61000-4-2 (ESD) air discharge contact discharge	±10 ±15	KV

Electrical Characteristics (T_A = 25°C unless otherwise noted)

Device	V_{RWM} (V)	I_R (μ A) @ V_{RWM}	V_{BR} (V) * @ I_T = 1mA		I_{PP} (A)**	V_C (V) ** @ I_{PP} = 1A	P_{PK} (W)**	C (pF) VR=0V, f=1MHz;
	Max	Max	Min	Max	Max	Max	Max	Typ
HPESD5V0U1BL	5.0	1.0	5.5	8.5	2.5	10	30	2.5

* V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25°C.

** Surge current waveform per Figure 1.

Typical Characteristics

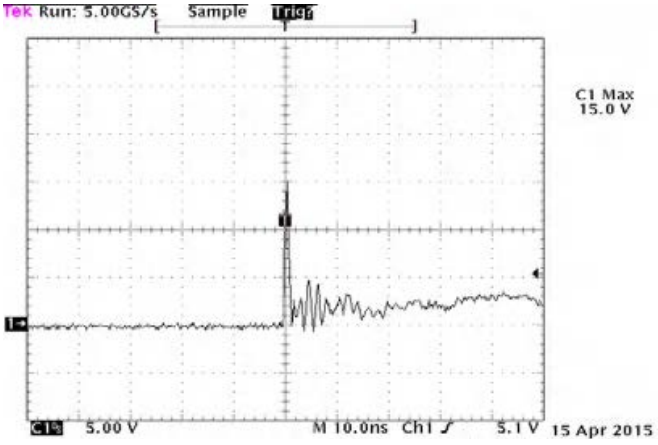


Figure 1. ESD Clamping Voltage Screenshot Positive 8 kV Contact per IEC61000−4−2

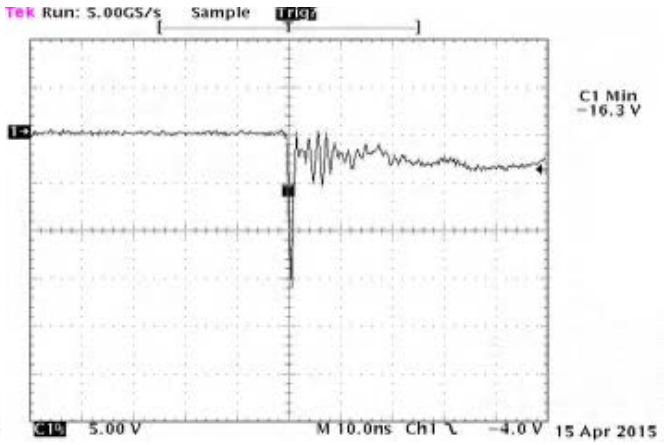


Figure 2. ESD Clamping Voltage Screenshot Negative 8 kV Contact per IEC61000−4−2

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

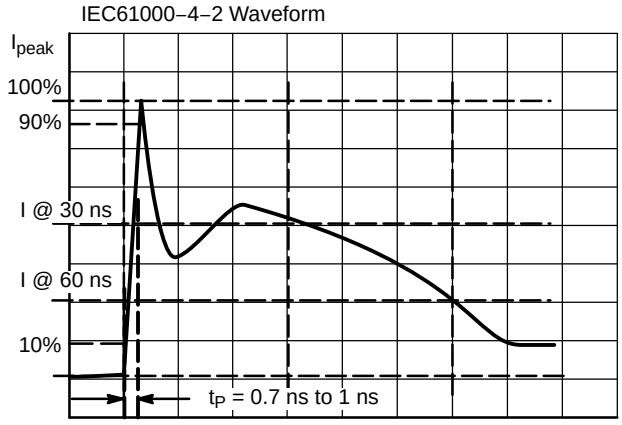


Figure 3. IEC61000−4−2 Spec

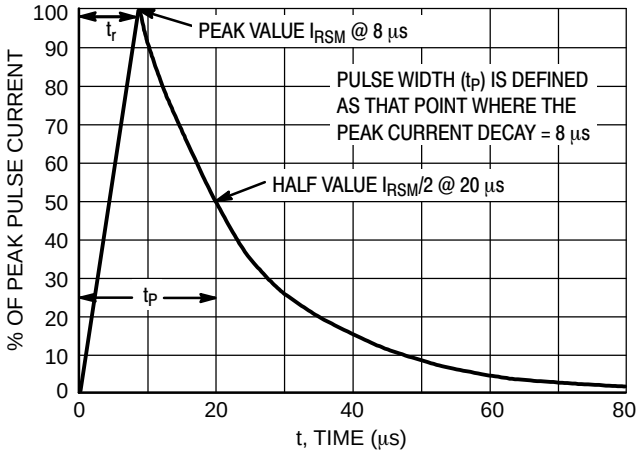
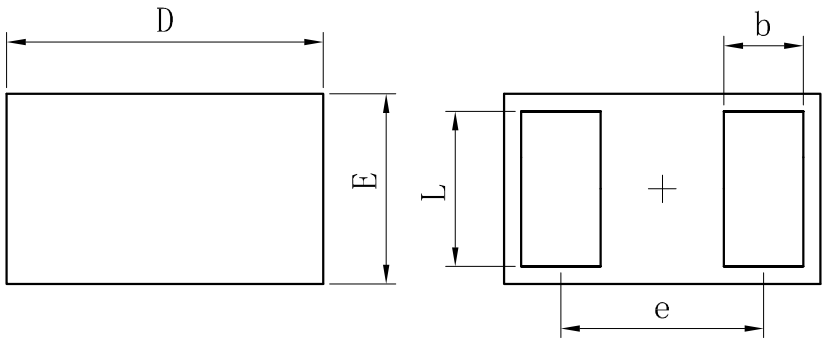
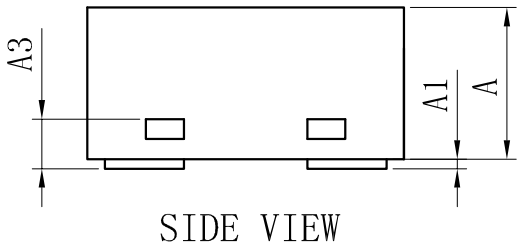


Figure 4. 8 X 20 μs Pulse Waveform

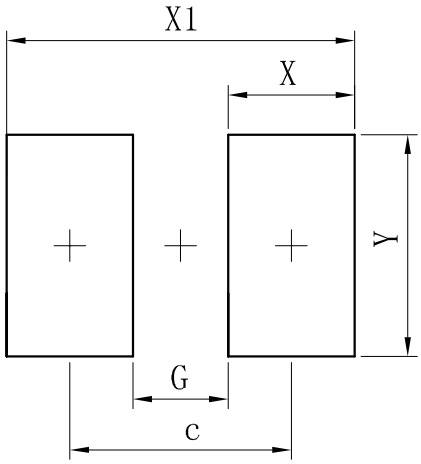
Outline And Dimensions



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			



Soledering Footprint



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

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