



## Description

Low capacitance bidirectional ElectroStatic Discharge (ESD) protection diode in a DFN1006-2L(SOD-882) leadless ultra small Surface-Mounted Device (SMD) plastic package designed to protect one signal line from the damage caused by ESD and other transients.



DFN1006-2L

## Features

- ★ Bidirectional ESD protection of oneline
- ★ Low operating voltage:5.0V
- ★ Low clamping voltage  $V_C = 10.5V$  @100A
- ★ Response time is typically<1ns
- ★ Ultra Low Leakage:nA Level
- ★ IEC 61000-4-2: level 4 (ESD)
- ★ IEC 61000-4-5 (surge): IPPMQ100 A



## Applications

- ★ Portable electronics
- ★ Computers and peripherals
- ★ Audio and video equipment
- ★ Cellular handsets and accessories
- ★ Communication systems
- ★ Power supplies

Circuit Diagram

## Ordering Information

Product ID	Pack	Qty(PCS)
HESDNC5VB1AF-F	DFN1006-2L	10000

## Absolute Ratings( $T_{amb} = 25^{\circ}C$ )

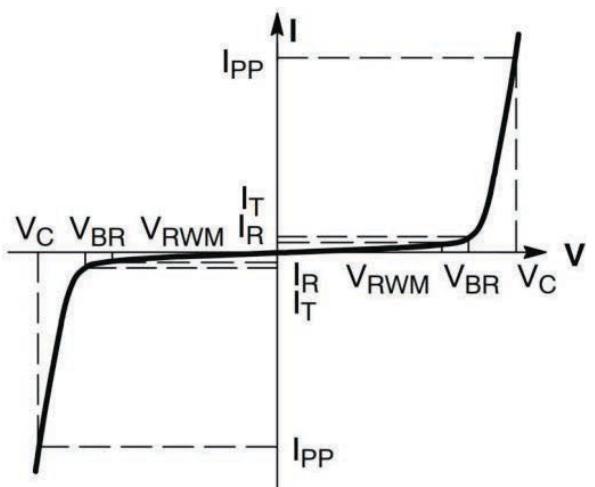
Parameter	Symbol	Value	Unit
Peak Pulse Power ( $tp = 8/20\mu s$ )	$P_{PPM}$	1000	W
Peak Pulse Current( $tp = 8/20\mu s$ )	$I_{PPM}$	100	A
Maximum lead temperature for soldering during 10s	$T_L$	260	$^{\circ}C$
Storage Temperature Range	$T_{stg}$	-55 to +150	$^{\circ}C$
Operating Temperature Range	$T_{OP}$	-40 to +125	$^{\circ}C$
Maximum junction temperature	$T_j$	150	$^{\circ}C$
ESD voltage IEC 61000-4-2 (air discharge)	$V_{ESD}$	30	kV
ESD voltage IEC 61000-4-2 (contact discharge)	$V_{ESD}$	30	kV



## Electrical Characteristics

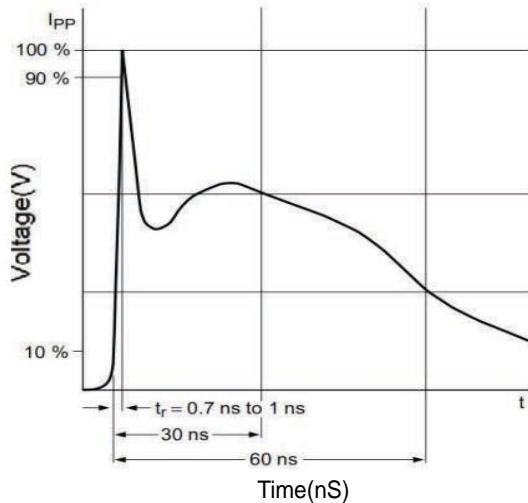
Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	$V_{RWM}$	--	--	5.0	V	
Breakdown Voltage	$V_{BR}$	5.8	--	7.0	V	$I_T=1\text{mA}$
Leakage Current $I_{\text{Leak}}$	$I_R$	--	--	100	nA	$V_{RWM}=5.0\text{V}$
Clamping Voltage	$V_c$	--	7.5	9.0	V	$I_{PP}=50\text{A}, T_p=8/20\mu\text{s}$
Clamping Voltage	$V_c$	--	9.0	10.5	V	$I_{PP}=100\text{A}, T_p=8/20\mu\text{s}$
Junction Capacitance	$C_J$	--	200	250	pF	$V_R=0\text{V}, f=1\text{MHz}$

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

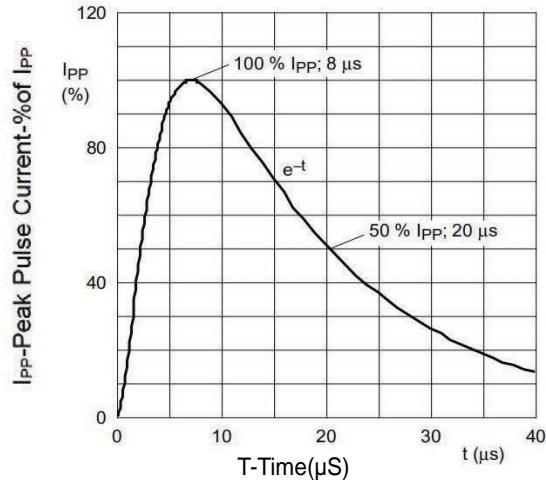




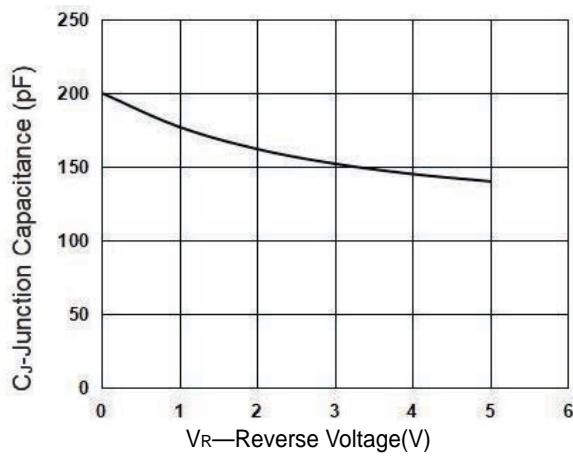
## Typical Characteristics



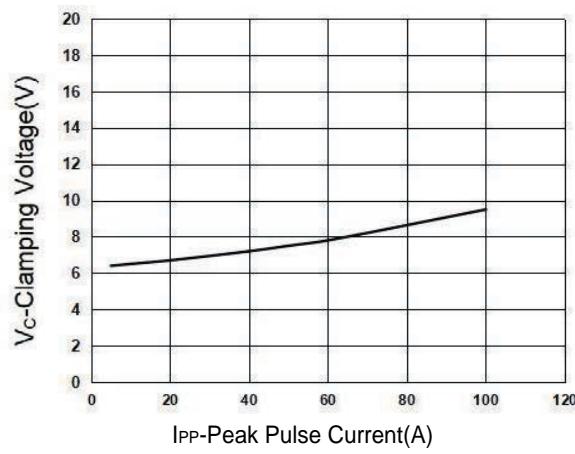
IEC61000-4-2 Pulse Waveform



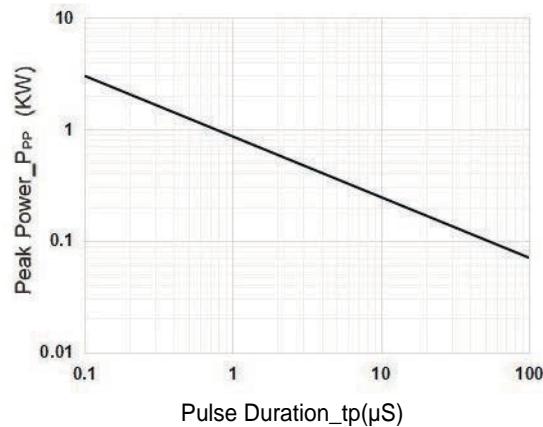
IEC61000-4-5 8X20μs Pulse Waveform



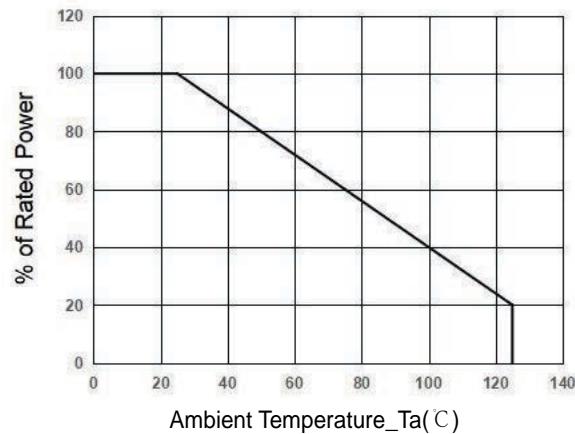
Junction Capacitance vs. Reverse Voltage



Clamping Voltage vs. Peak Pulse Current



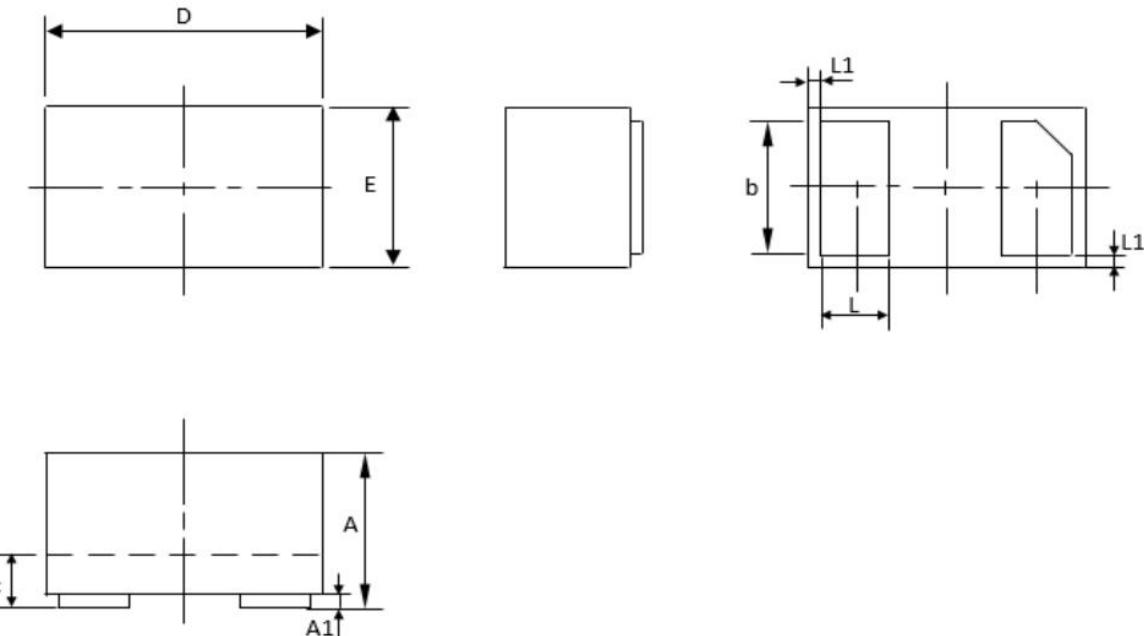
Peak Pulse Power vs. Pulse Time



Power Derating Curve



## Outline And Dimensions



DFN1006-2L			
Dim	Min	Typ.	Max
A	0.46	0.48	0.50
A1	0	0.02	0.05
b	0.45	0.5	0.55
c	0.1	0.12	0.14
D	0.95	1.00	1.05
E	0.55	0.60	0.65
L	0.20	0.25	0.30
L1	0.035	0.05	0.065
h	0.07	0.12	0.17

All Dimensions in mm



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