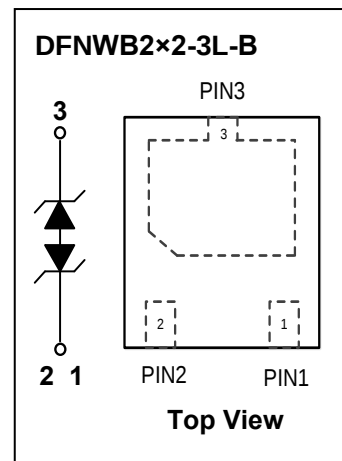


DFNWB2×2-3L-B Plastic-Encapsulate Diodes

DESCRIPTION

Designed to protect voltage sensitive electronic components from ESD and other transients. Excellent clamping capability, low leakage, high capacitance, and fast response time provide best in class protection on designs that are exposed to ESD.

The combination of small size, high capacitance, and high level of ESD protection makes them a flexible solution for applications such as HDMI, Display Port TM, and MDDI interfaces. It is designed to replace multiplayer varistors (MLV) in consumer equipments applications such as mobile phone, notebook, PAD, STB, LCD TV etc.



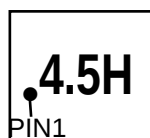
FEATURES

- Bi-directional ESD protection of one line
- Low reverse stand-off voltage: 4.5V
- Low reverse clamping voltage
- Low leakage current
- Excellent package: 2.0mm×2.0mm×0.6mm
- Peak pulse power: 5750W (IEC61000-4-5 8/20μs)
- Fast response time
- JESD22-A114-B ESD Rating of class 3B per human body model
- IEC 61000-4-2 Level 4 ESD protection
- Surge protection according to IEC61000-4-5 8/20μs waveform: IPPM 220A

APPLICATIONS

- Computers and peripherals
- Low speed bus lines
- Audio and video equipment
- Cellular handsets and accessories
- Portable electronics
- Other electronics equipments communication systems

MARKING



Front side

4.5H = Device code
Solid dot=Pin1 indicator

MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
IEC 61000-4-2 ESD Voltage	$V_{\text{ESD}}^{(1)}$	± 30	kV
Air Model			
Contact Model		± 30	
JESD22-A114-B ESD Voltage		± 20	
ESD Voltage	Machine Model	± 0.4	
Peak Pulse Power	$P_{\text{PP}}^{(2)}$	5750	W
Peak Pulse Current	$I_{\text{PP}}^{(2)}$	220	A
Lead Solder Temperature – Maximum (10 Second Duration)	T_L	260	$^{\circ}\text{C}$
Operation Junction and Storage Temperature Range	T_J, T_{stg}	-55 ~ +150	$^{\circ}\text{C}$

(1).Device stressed with ten non-repetitive ESD pulses.

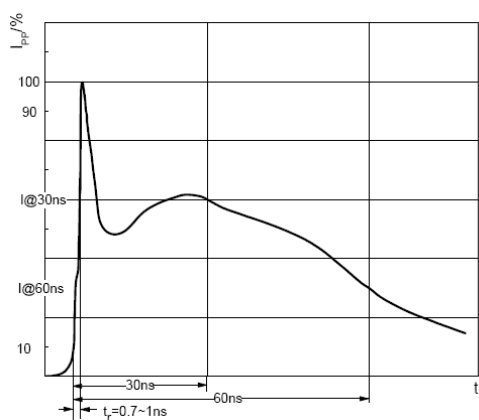
(2).Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5.

ESD standards compliance
IEC61000-4-2 Standard

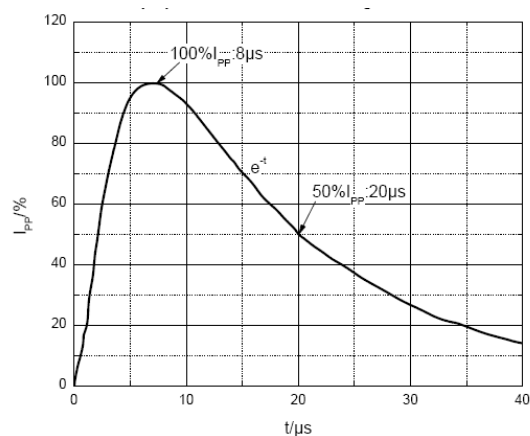
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

JESD22-A114-B Standard

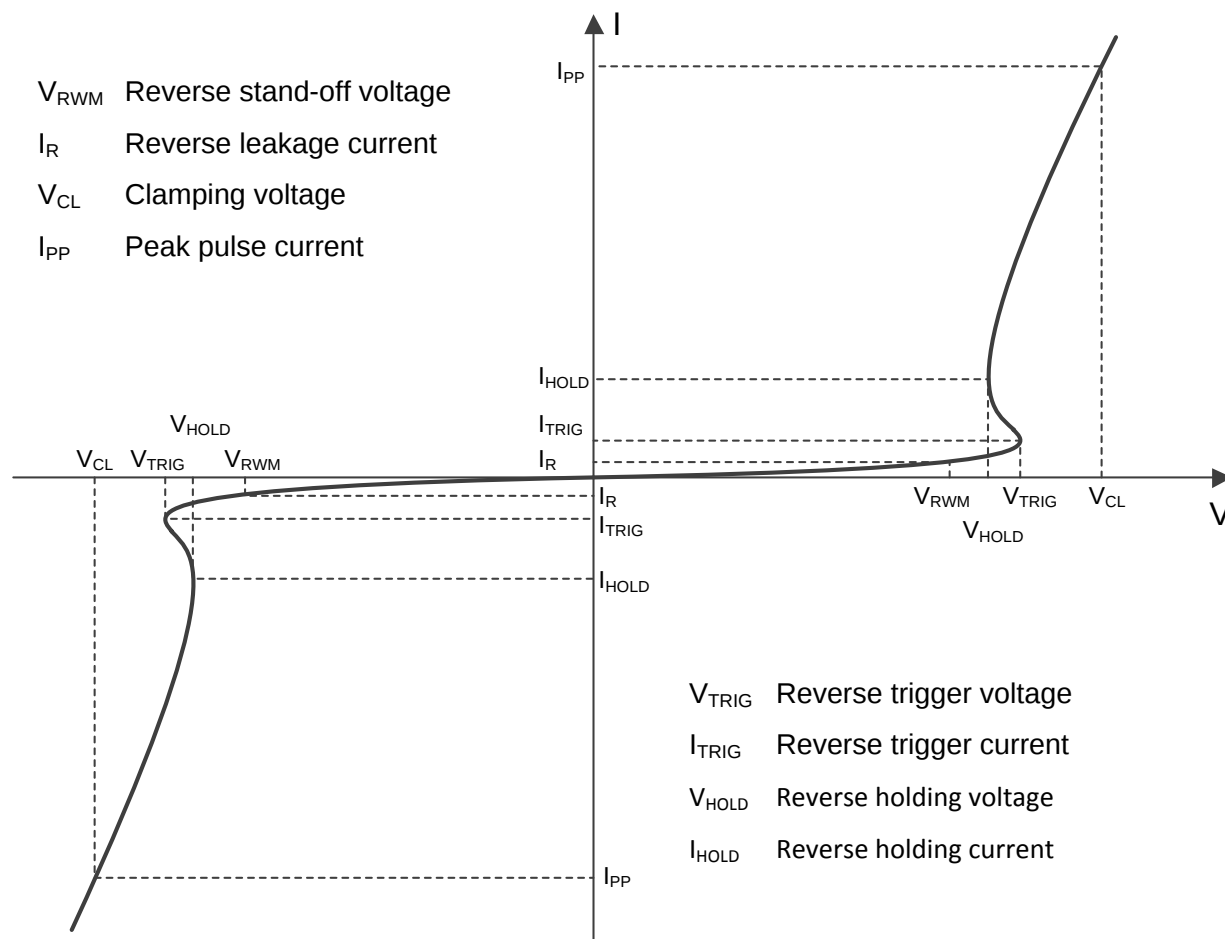
ESD Class	Human Body Discharge V
0	0~249
1A	250~499
1B	500~999
1C	1000~1999
2	2000~3999
3A	4000~7999
3B	8000~15999



ESD pulse waveform according to IEC61000-4-2



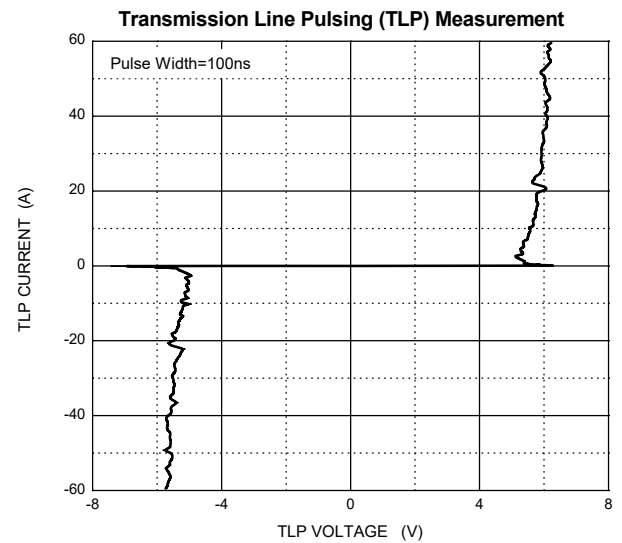
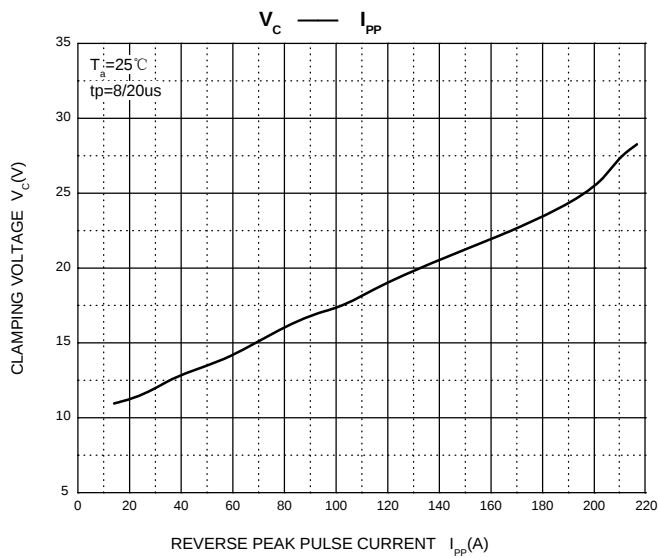
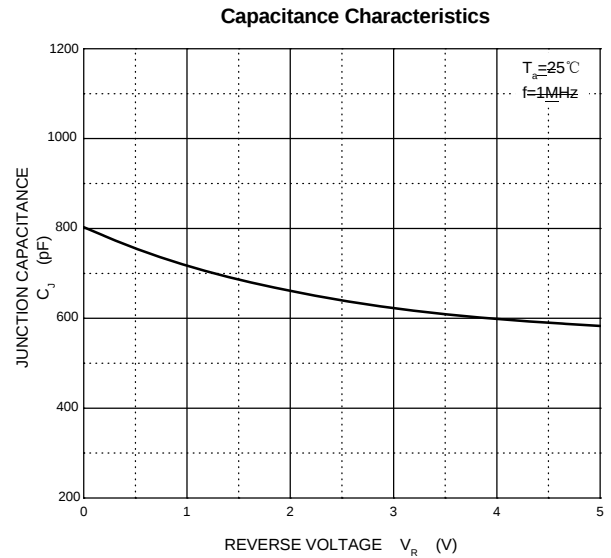
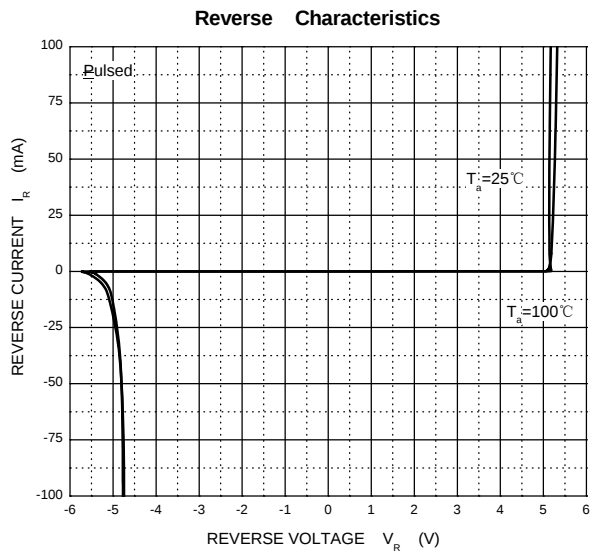
8/20 μs pulse waveform according to IEC 61000-4-5

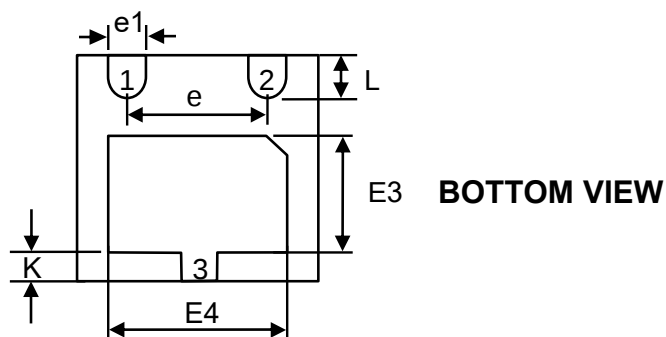
ELECTRICAL PARAMETER

ELECTRICAL CHARACTERISTICS($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse stand off voltage	$V_{RWM}^{(1)}$				4.5	V
Reverse leakage current	I_R	$V_{RWM}=4.5\text{V}$			1	μA
Breakdown voltage	$V_{(BR)}$	$I_T=1\text{mA}$	4.6			V
Clamping voltage	$V_C^{(2)}$	$I_{PP}=200\text{A}$		26		V
Junction capacitance	C_J	$V_R=0\text{V}, f=1\text{MHz}$		800		pF

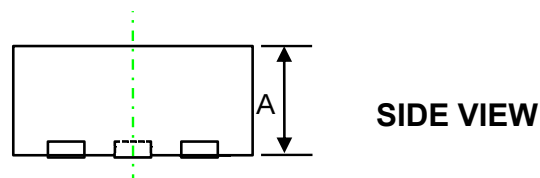
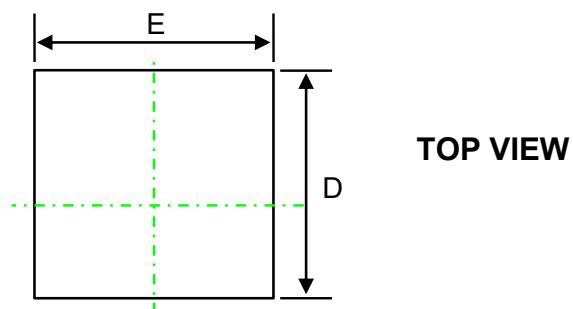
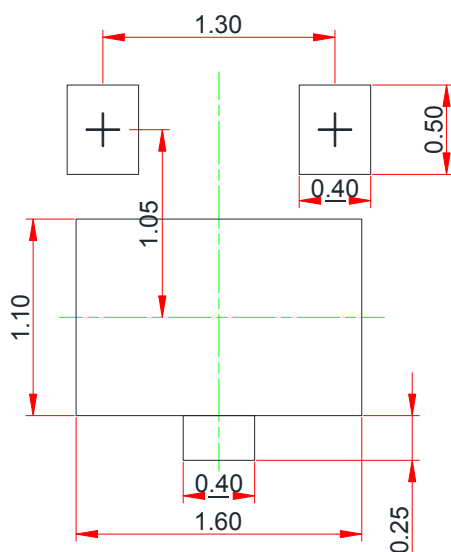
(1).Other voltages available upon request.

(2).Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5

TYPICAL CHARACTERISTICS


PACKAGE OUTLINE AND PAD LAYOUT INFORMATION
DFNWB2×2-3L-B PACKAGE DIMENSIONS


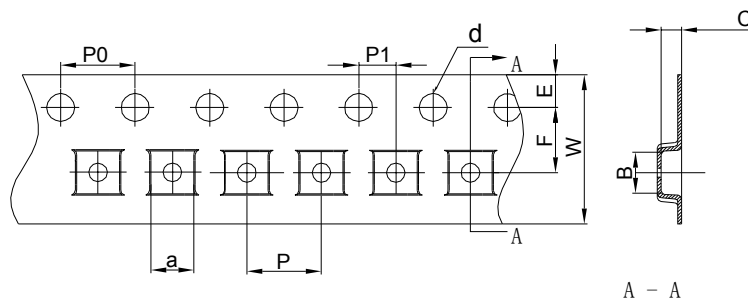
Symbol	Dimensions In Millimeters (mm)		
	Min.	Typ.	Max.
A	0.500	0.585	0.650
D	1.900	2.000	2.100
e	1.200	1.300	1.400
E	1.900	2.000	2.100
e1	0.200	0.300	0.400
L	0.300	0.400	0.500
E3	0.850	1.000	1.150
E4	1.350	1.500	1.650
K	0.150	0.250	0.350


DFNWB2×2-3L-B Suggested Pad Layout
Recommended land pattern (Unit: mm)

Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

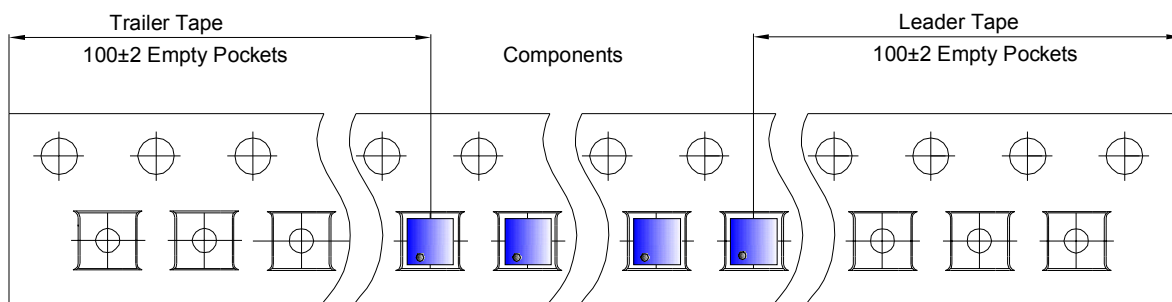
DFNWB2X2-3L-B Tape and Reel

DFNWB2×2-3L-B Embossed Carrier Tape

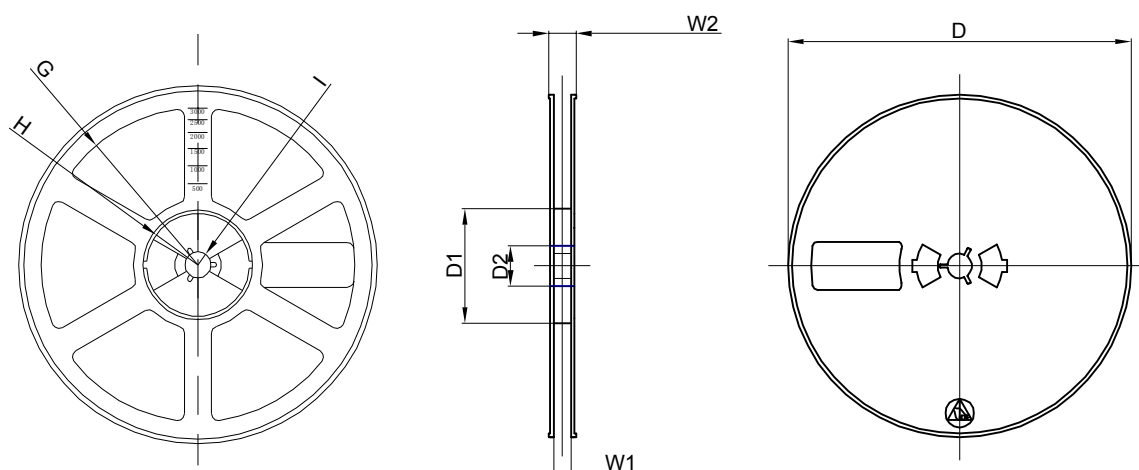


Dimensions are in millimeter										
Pkg type	a	B	C	d	E	F	P0	P	P1	W
DFNWB2×2-3L	2.20	2.20	0.75	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

DFNWB2×2-3L-B Tape Leader and Trailer



DFNWB2×2-3L-B Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	Ø180.00	60.00	13.00	R78.00	R25.60	R6.50	9.50	13.10

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	30,000 pcs	203×203×195	120,000 pcs	438×438×220	

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