



JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

DFNWB2.5×1-10L Plastic-Encapsulate Diodes

ESDU5V0AG4C Uni-direction ESD Protection Array

DESCRIPTION

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

The combination of small size, low 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.

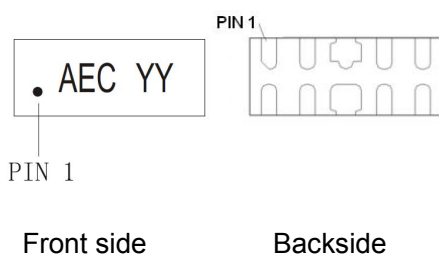
FEATURES

- Uni-directional ESD protection of four lines
- Low capacitance: 0.8pF
- Low reverse stand-off voltage: 5V
- Low reverse clamping voltage
- Low leakage current
- Excellent package: 2.5mm×1.0mm×0.5mm
- Fast response time
- JESD22-A114-B ESD Rating of class 3B per human body model
- IEC 61000-4-2 Level 3 ESD protection

APPLICATIONS

- Computers and peripherals
- Audio and video equipment
- High speed data lines
- Mobile phone
- High Definition Multi-Media Interface (HDMI)
- Digital Visual Interface (DVI)
- LVDS
- PAD
- Other electronics equipments
- Communication systems

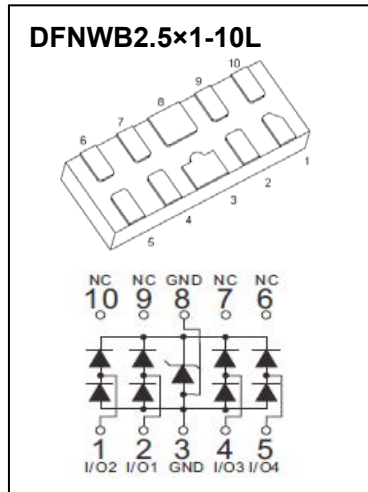
MARKING



AEC = Device code

YY=Date 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	$V_{\text{ESD}}^{(1)}$	± 10	kV
Air Model			
Contact Model		± 10	
JESD22-A114-B ESD Voltage		± 15	
ESD Voltage	Machine Model	± 0.4	
Peak Pulse Power	$P_{\text{PP}}^{(2)}$	19	W
Peak Pulse Current	$I_{\text{PP}}^{(2)}$	5	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,per channel(I/O to GND).

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

ESD standards compliance**IEC61000-4-2 Standard**

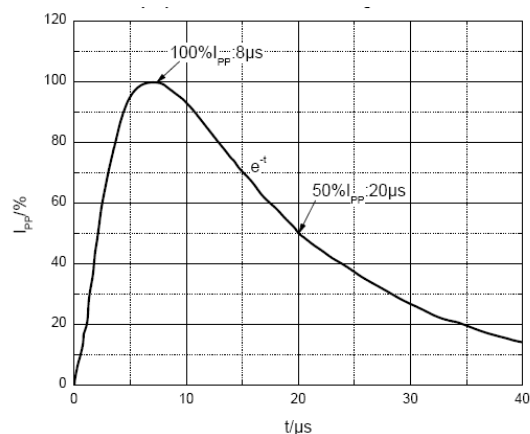
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

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

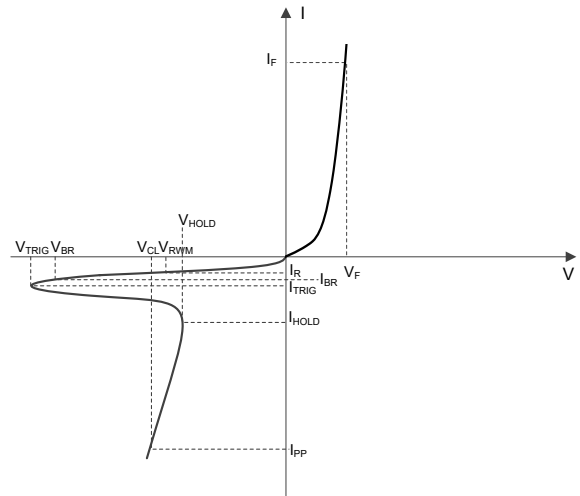


ESD pulse waveform according to IEC61000-4-2

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

ELECTRICAL PARAMETER

Symbol	Parameter
V_{CL}	Clamping Voltage @ IPP
I_{PP}	Peak Pulse Current
V_{TRIG}	Reverse trigger voltage
I_{TRIG}	Reverse trigger current
V_{BR}	Reverse breakdown Voltage
I_{BR}	Reverse breakdown current
V_{RWM}	Reverse Standoff Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{HOLD}	Reverse Holding Voltage
I_{HOLD}	Reverse Holding Current
V_F	Forward Voltage@ I_F
I_F	Forward Current

**V-I characteristics for a Bi-direction TVS****ELECTRICAL CHARACTERISTICS($T_a=25^{\circ}\text{C}$ unless otherwise specified)**

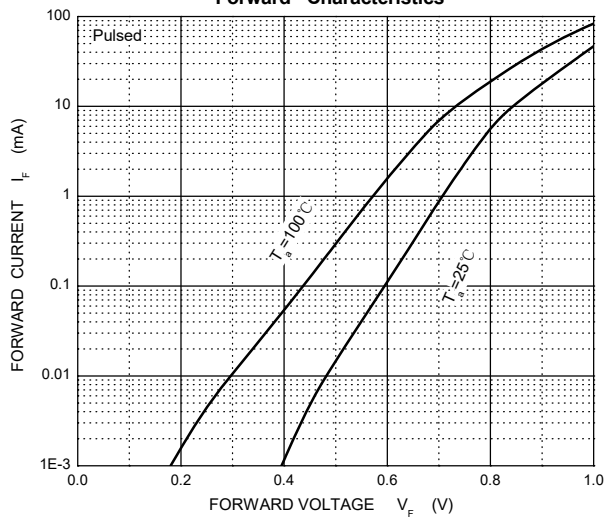
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Per channel(I/O to GND unless otherwise specified)						
Reverse stand off voltage	$V_{RWM}^{(1)}$				5	V
Breakdown voltage	$V_{(BR)}$	$I_T=1\text{mA}$	5.6			V
Reverse leakage current	I_R	$V_{RWM}=5\text{V}$			1	μA
Forward voltage	V_F	$I_F=10\text{mA}$	0.4		1.5	V
Clamping voltage	$V_C^{(2)}$	$I_{PP}=5\text{A}$		3.88		V
TLP clamping voltage	V_C	$I_{TLP}=16\text{A}$, Pulse Width=100ns		6.6		V
		$I_{TLP}=\pm 16\text{A}$, Pulse Width=100ns, I/O to I/O		± 12		V
Junction capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$			0.8	pF
		$V_R=0\text{V}$, $f=1\text{MHz}$, I/O to I/O			0.5	pF

(1).Other voltages available upon request.

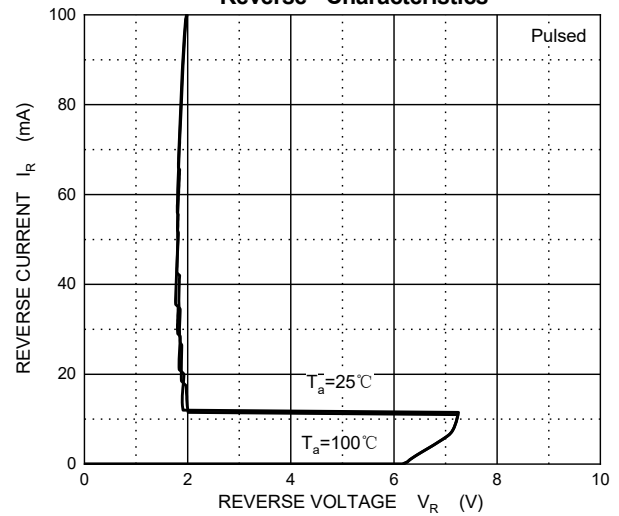
(2).Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5

TYPICAL CHARACTERISTICS

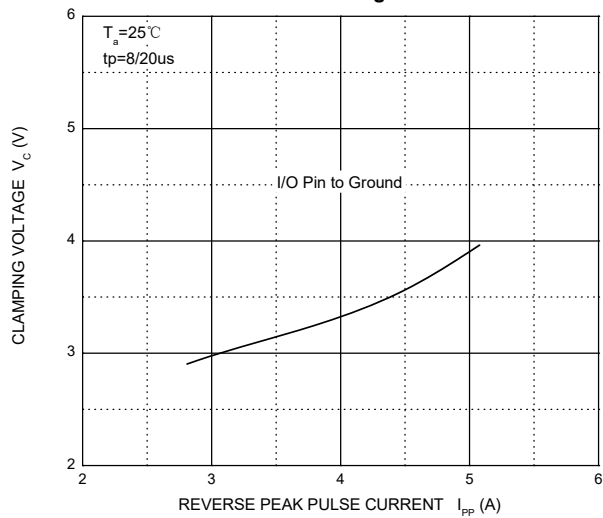
Forward Characteristics



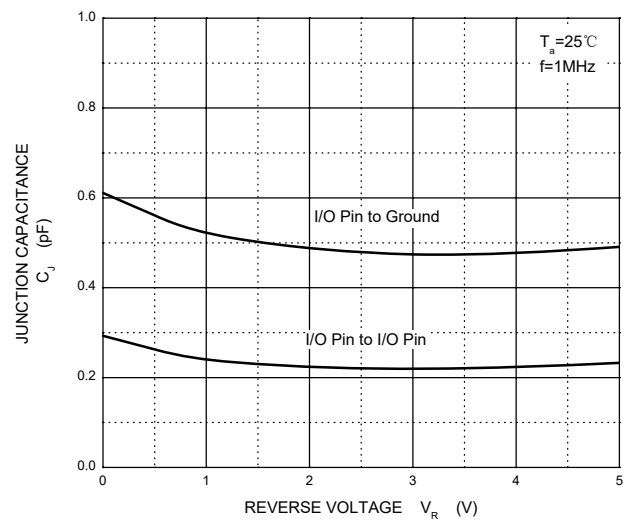
Reverse Characteristics



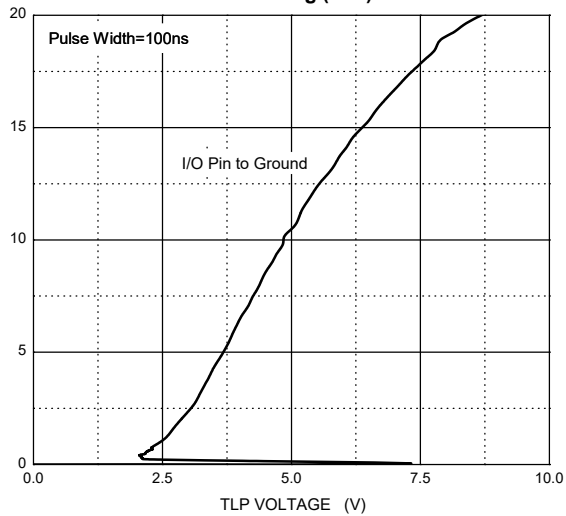
Power Derating Curve



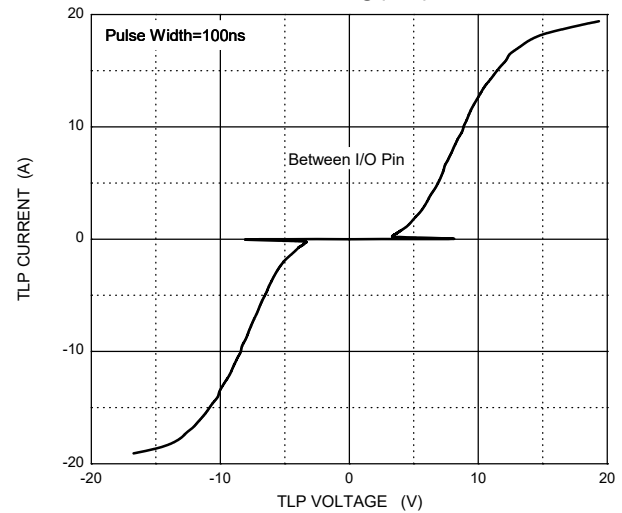
Capacitance Characteristics

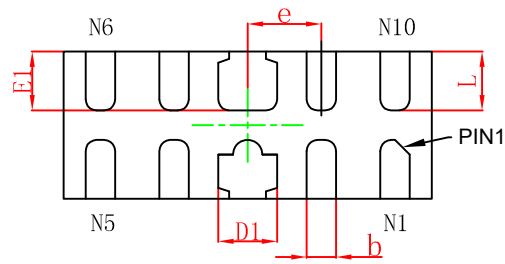
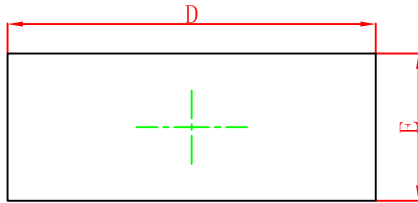
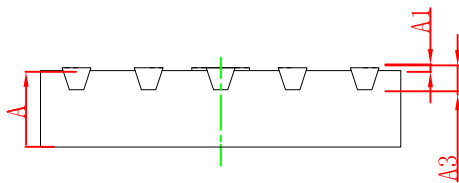


Transmission Line Pulsing (TLP) Measurement

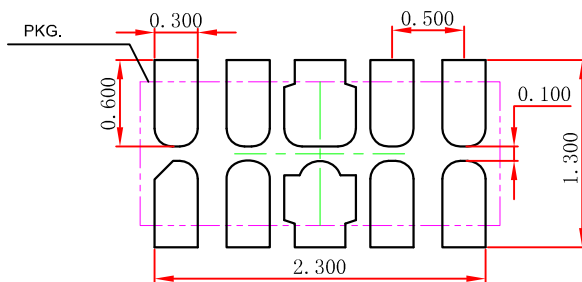


Transmission Line Pulsing (TLP) Measurement



PACKAGE OUTLINE AND PAD LAYOUT INFORMATION**DFNWB2.5×1-10L** Package Outline Dimensions(Unit:mm)**Bottom View****Side View**

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.450	0.550	0.017	0.022
A1	0.000	0.050	0.000	0.002
A3	0.152REF.		0.006REF.	
D	2.450	2.550	0.096	0.100
E	0.950	1.050	0.037	0.041
D1	0.350	0.450	0.014	0.018
E1	0.350	0.450	0.014	0.018
b	0.150	0.250	0.006	0.010
e	0.500TYP.		0.020TYP.	
L	0.350	0.450	0.014	0.018

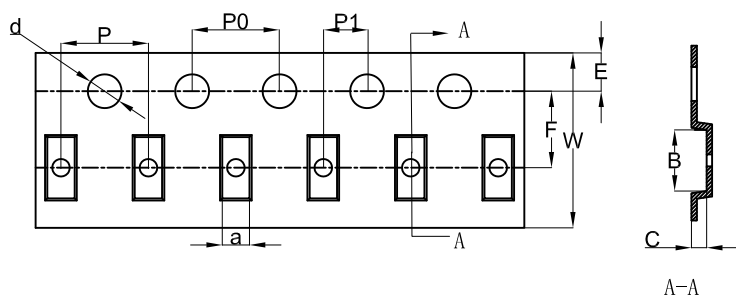
DFNWB2.5×1-10L Suggested Pad Layout**Note:**

- 1.Controlling dimension:in millimeters.
- 2.General tolerance:± 0.050mm.
- 3.The pad layout is for reference purposes only.

NOTICE

JSCJ reserves the right to make modifications,enhancements,improvements,corrections or other changes without further notice to any product herein. JSCJ does not assume any liability arising out of the application or use of any product described herein.

TAPE AND REEL INFORMATION

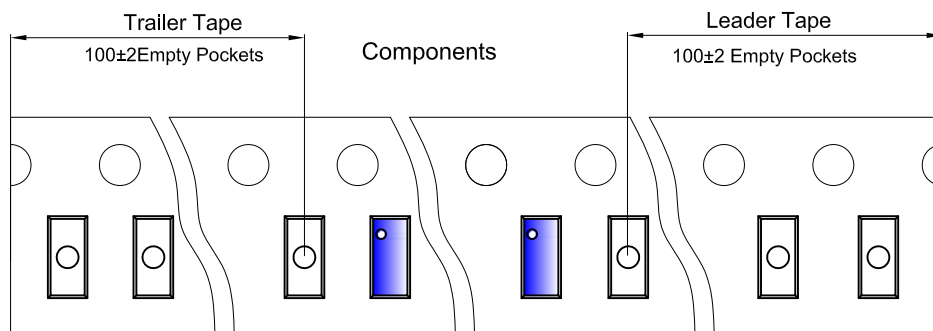
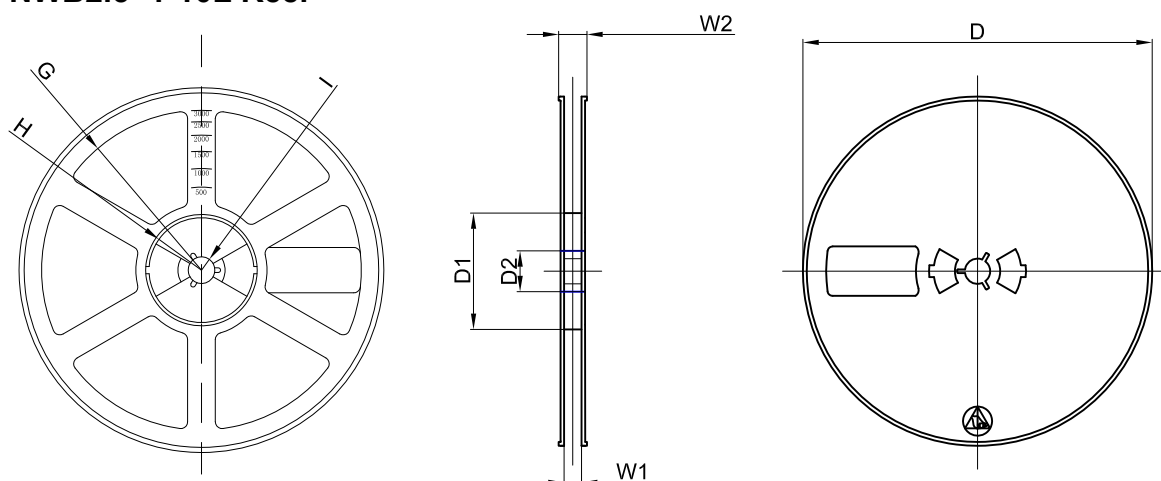
DFNWB2.5×1-10L Embossed Carrier Tape

Packaging Description:

DFNWB2.5×1.0-10L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

ALL DIM IN mm

Dimensions are in millimeter										
Pkg type	a	B	C	d	E	F	P0	P	P1	W
DFNWB2.5×1.0-10L	1.23	2.70	0.7	Ø1.55	1.75	3.50	4.00	4.00	2.00	8.00

DFNWB2.5×1-10L Tape Leader and Trailer**DFNWB2.5×1-10L** 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	