SZCJ

Shenzhen Changji Semiconductor Co., LTD.

DFN1006-3L Plastic-Encapsulate Diodes

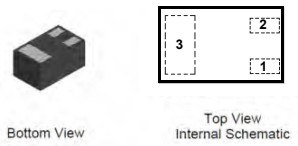
ESDBLD5V0B2 Bi-direction ESD Protection Diode

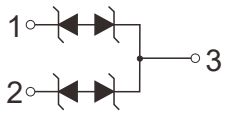
DESCRIPTION

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

The combination of small size, 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.

DFN1006-3L





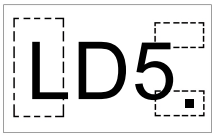
FEATURES

- Bi-directional ESD protection of two lines
- Reverse stand−off voltage: 5V
- Low reverse clamping voltage
- Low leakage current
- Excellent package:1.0mm×0.6mm×0.47mm
- Fast response time
- JESD22-A114-B ESD Rating of class 3B per human body model
- IEC 61000-4-2 Level 4 ESD protection

APPLICATIONS

- Computers and peripherals
- Audio and video equipment
- Cellular handsets and accessories
- Portable electronics
- Other electronics equipments communi-cation systems

MARKING



Front side

LD5= Device code

Solid dot=Pin1 indicator

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter		Symbol	Limit	Unit
IEC 61000-4-2 ESD Voltage	Air Model	V_{ESD}(1)	±20	kV
	Contact Model		±20	
JESD22-A114-B ESD Voltage	Per Human Body Model		±30	
ESD Voltage	Machine Model		±0.4	
Peak Pulse Power		P_{PP}(2)	55	W
Peak Pulse Current		I_{PP}(2)	3.5	A
Lead Solder Temperature − Maximum (10 Second Duration)		T_L	260	℃
Operation Junction and Storage Temperature Range		T_J,T_{stg}	-55 ~ +150	℃

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

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

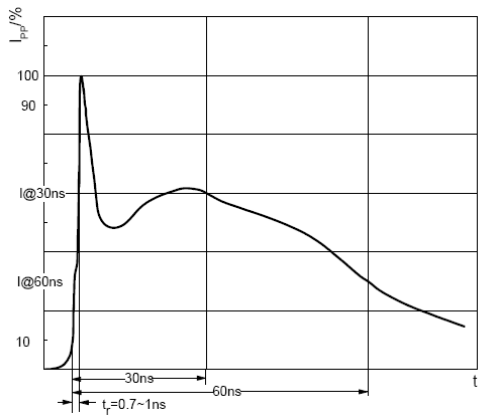
ESD standards compliance

IEC61000-4-2 Standard

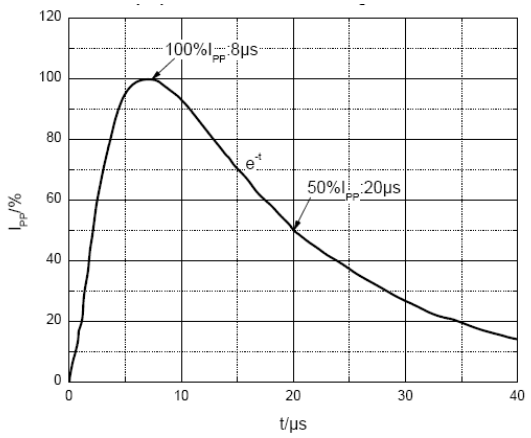
Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

JESD22-A114-B Standard

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



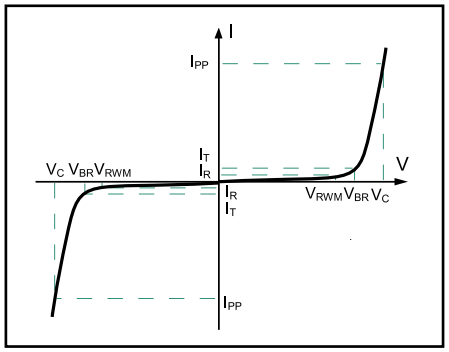
ESD pulse waveform according to IEC61000-4-2



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

ELECTRICAL PARAMETER

Symbol	Parameter
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Peak Pulse Current
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_R	Reverse Leakage Current @ V_{RWM}
V_{RWM}	Reverse Standoff Voltage



V-I characteristics for a Bi-direction ESD Protection Diode

ELECTRICAL CHARACTERISTICS(T_a=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse stand off voltage	V_{RWM} (1)				5	V
Reverse leakage current	I_R	V_{RWM}=5V			0.1	μA
Breakdown voltage	$V_{(BR)}$	I_T=1mA	6.0		9.0	V
Clamping voltage	V_C	I_{PP}=3.5A		14.4	17	V
TLP clamping voltage	V_C	I_{TLP} =8A, Pulse Width=100ns		12.7		V
		I_{TLP} =16A, Pulse Width=100ns		14.6		V
Dynamic resistance	R_{DYN} (3)	Pulse Width=100ns		0.24		Ω
Junction capacitance	C_J	V_R=0V,f=1MHz		3	4	pF

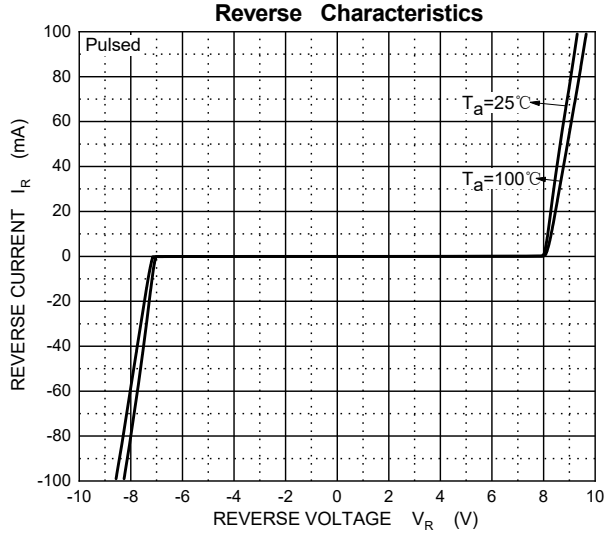
(1).Other voltages available upon request.

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

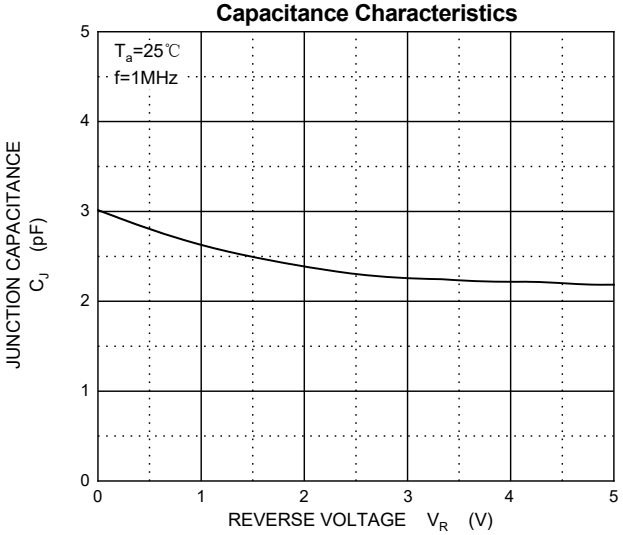
(3).R_{DYN} is calculated from 8A to 16A.

TYPICAL CHARACTERISTICS

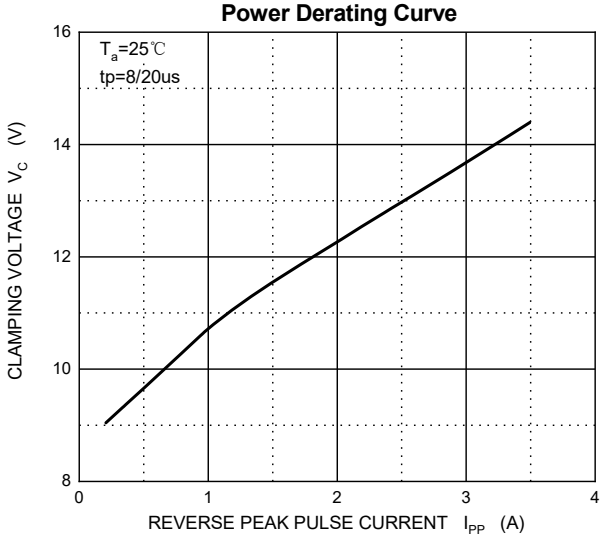
Reverse Characteristics



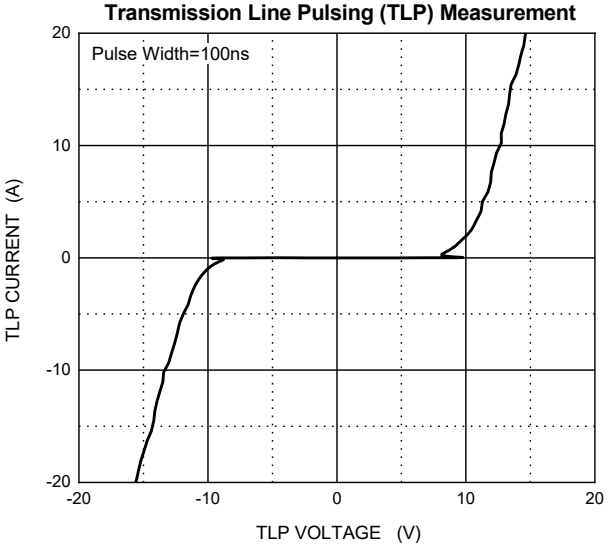
Capacitance Characteristics



Power Derating Curve

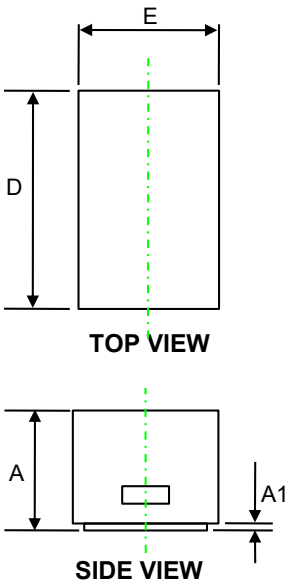


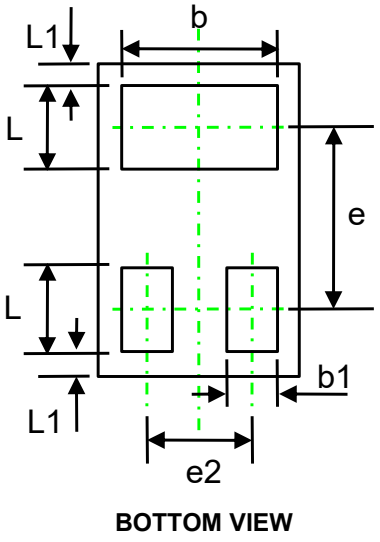
Transmission Line Pulsing (TLP) Measurement



PACKAGE OUTLINE AND PAD LAYOUT INFORMATION

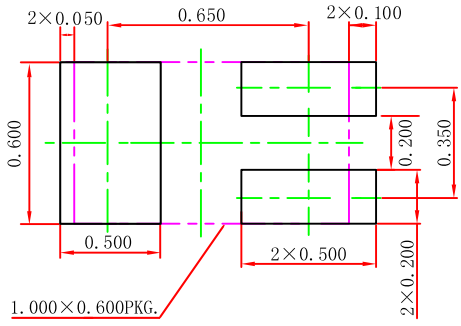
DFN1006-3L Package Outline Dimensions





Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.400	0.550	0.016	0.022
A1	0.000	0.050	0.000	0.002
D	0.950	1.050	0.037	0.041
E	0.550	0.650	0.022	0.026
b	0.450	0.550	0.018	0.022
e	0.650 REF.		0.026 REF.	
e2	0.350 REF.		0.014 REF.	
L1	0.050 REF.		0.002 REF.	
L	0.200	0.300	0.008	0.012
b1	0.100	0.200	0.004	0.008

DFN1006-3L Suggested Pad Layout

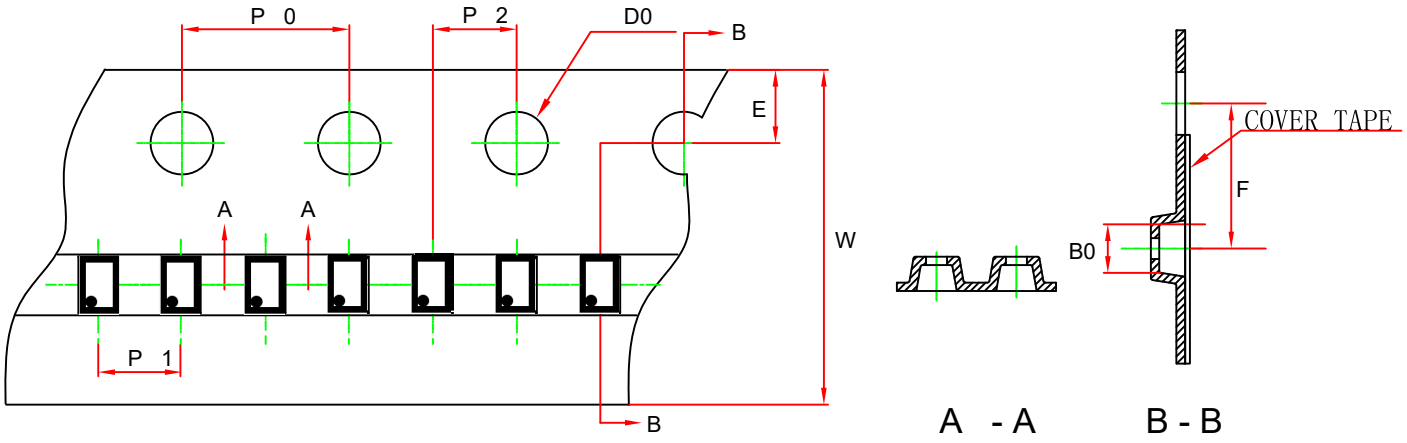


Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.050mm.
3.The pad layout is for reference purposes only.

NOTICE
SZCJ reserves the right to make modifications,enhan nts,improvements,corrections or other es without further notice to any product herein. SZCJ does not assume any liability arising out of the application or use of any product described h

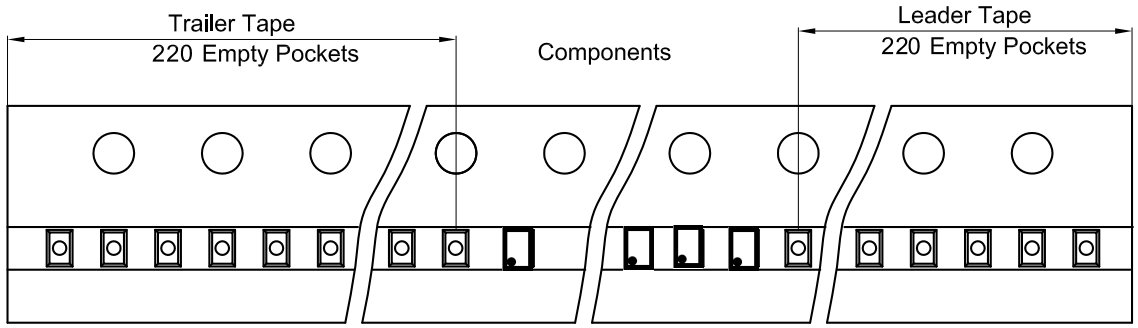
TAPE AND REEL INFORMATION

DFN1006-3L Embossed Carrier Tape

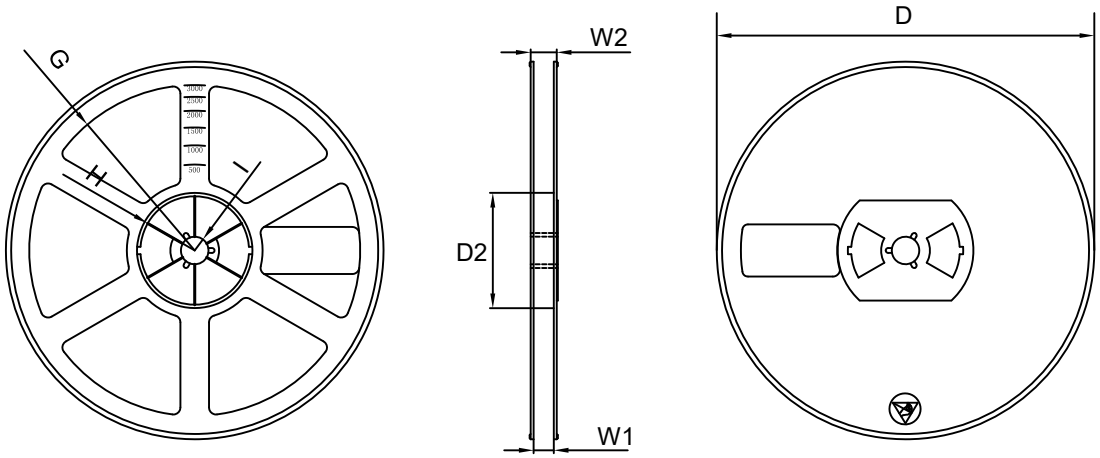


Dimensions In Millimeters (mm)								
Pkg type	B0	P0	P1	P2	E	F	W	D0
DFN1006-3L	1.11	4.00	2.00	2.00	1.75	3.50	8.00	1.55
Tolerance	+/-0.06	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.3	+/-0.1

DFN1006-3L Tape Leader and Trailer



DFN1006-3L Reel



Symbol	Dimensions In Millimeters (mm)						
	D	D2	G	H	I	W1	W2
7" Dia	Φ178.00	54.50	R78.00	R25.6	R6.5	9.50	12.30
Tolerance	+/-2	+/-1	+/-1	+/-1	+/-1	+/-2	+/-1.5

REEL	Reel Size	Box	Box size(mm)	Carton	Carton Size(mm)
10000 pcs	7 inch	150000 pcs	220×220×210	600000 pcs	450×450×240