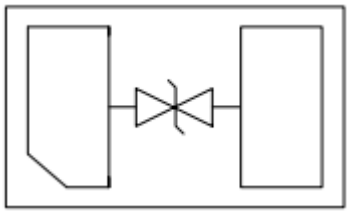
Description

The JLE05BUD1-2N is a bi-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The JLE05BUD1-2N complies with the IEC 61000-4-2 (ESD) with ±25kV air and ±22kV contact discharge. It is assembled into an ultra-small 0.6x0.3x0.3mm lead-free DFN package. The small size and high ESD surge protection make JLE05BUD1-2N an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Features

* 40W peak pulse power (8/20μs)
* Low leakage： nA level
* Low operating voltage: 5V
* Ultra low clamping voltage
* One power line protects
* Complies with following standards:
  – IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±25kV
    Contact discharge: ±22kV
  – IEC61000-4-5 (Lightning) 3.5A (8/20μs)
* Package: DFN0603-2

Circuit Diagram



Circuit and Pin Schematic

Transparent top view

Applications

* Cellular Handsets and Accessories
* Personal Digital Assistants
* Notebooks and Handhelds
* Portable Instrumentation
* Digital Cameras
* Peripherals
* Audio Players
* Keypads, Side Keys, LCD Displays

Ordering Information

Part Number	Packaging	Reel Size
JLE05BUD1-2N	10000/Tape & Reel	7 inch

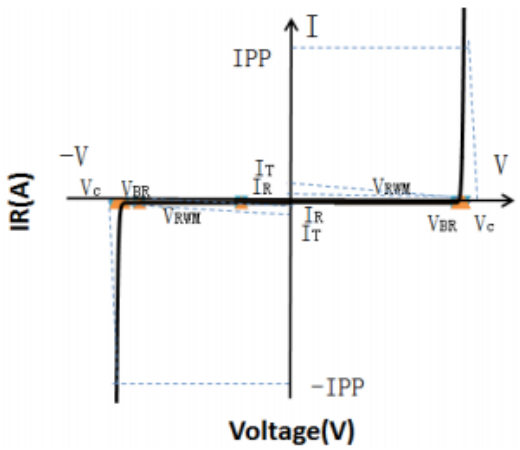
Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	40	W
Peak Pulse Current (8/20μs)	IPP	3.5	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	VESD	±25 ±22	kV
Operating Temperature Range	TJ	−55to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

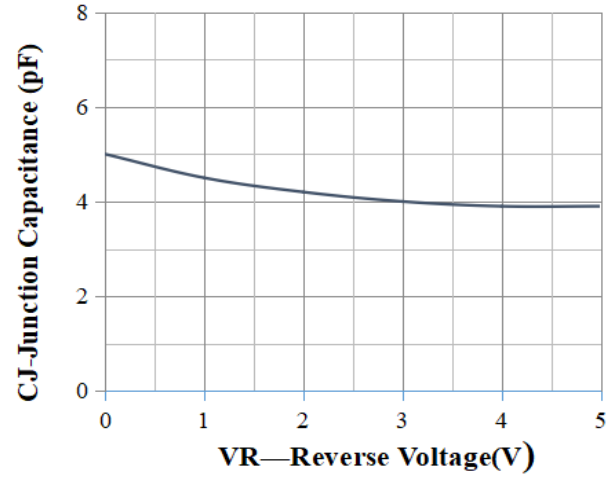
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	Pin 1 to 2 or Pin 2 to Pin 1			5	V
Breakdown Voltage	V_{BR}	I_T = 1mA,Pin 1 to Pin 2 or Pin 2 to Pin 1	6		8	V
Reverse Leakage Current	I_R	V_{RWM} = 5V,Pin 1 to Pin 2 or Pin 2 to Pin 1			0.2	μA
Clamping Voltage	V_C	I_{PP} = 1A (8 x 20μs pulse), Pin 1 to Pin 2 or Pin 2 to Pin 1			8	V
Clamping Voltage	V_C	I_{PP} =3.5A (8 x 20μs pulse), Pin 1 to Pin 2 or Pin 2 to Pin 1			12	V
Junction Capacitance	C_J	VR = 0V, f = 1MHz		5		pF

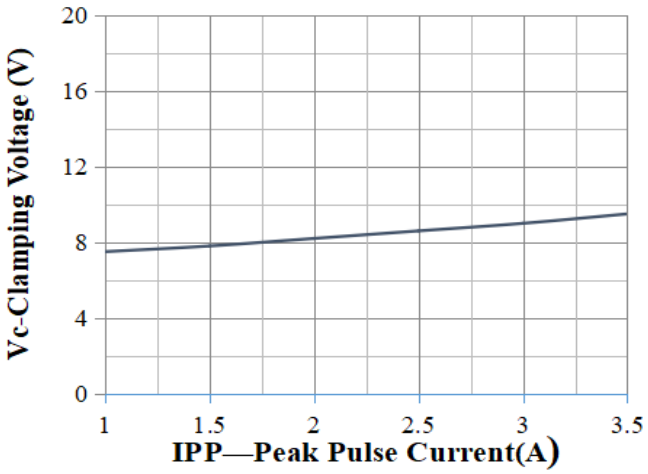
Symbol	Parameter
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
Vc	Clamping Voltage @Ic



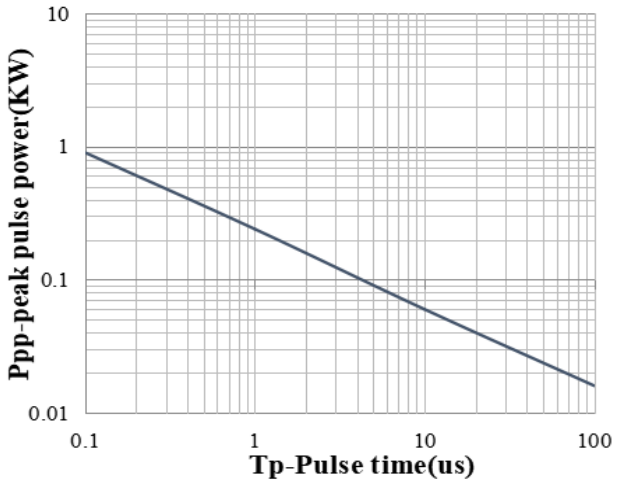
Typical Performance Characteristics (T_A=25°C unless otherwise Specified)



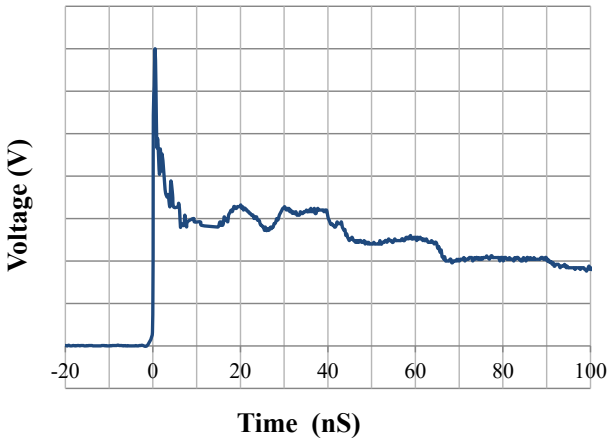
Junction Capacitance vs. Reverse Voltage



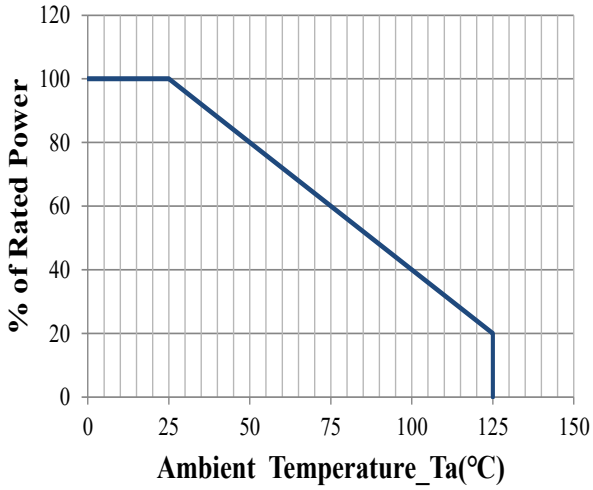
Clamping Voltage vs. Peak Pulse Current



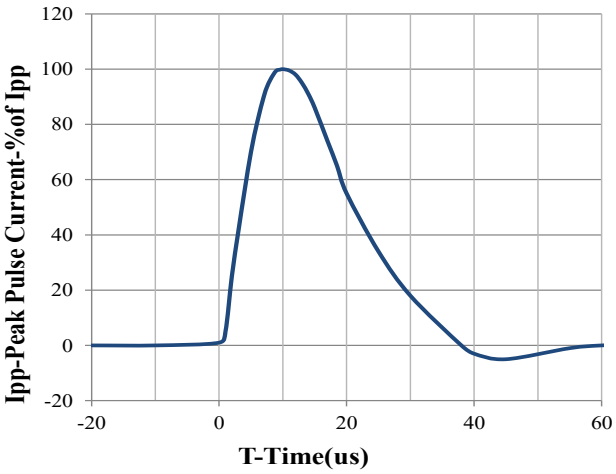
Peak Pulse Power vs. Pulse Time



IEC61000−4−2 Pulse Waveform

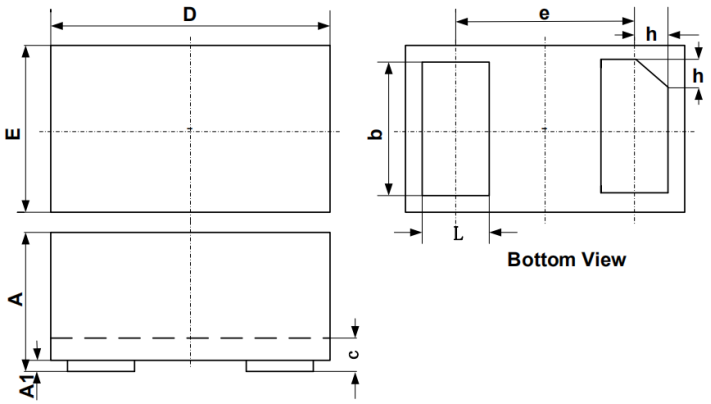


Power Derating Curve



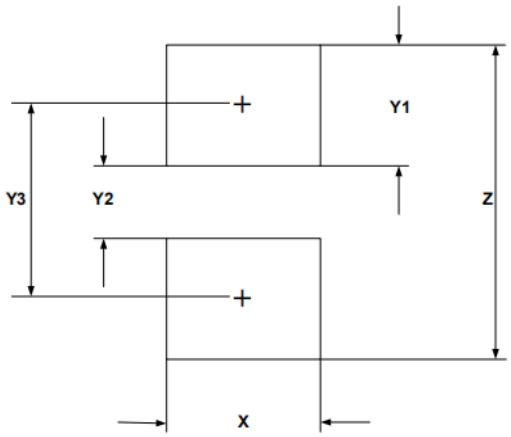
8 X 20us Pulse Waveform

DFN0603-2 Package Outline Drawing (Dimensions in millimeters)



SYM	DIMENSIONS		
	MILLIMETERS		
	MIN	NOM	MAX
A	0.230		0.330
A1	0.000	0.020	0.050
b	0.215	0.245	0.275
c	0.120	0.150	0.180
D	0.550	0.600	0.650
e	0.355 BSC		
E	0.250	0.300	0.350
L	0.160	0.190	0.220
h	0.079 BSC		

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	0.30	0.012
Y1	0.25	0.010
Y2	0.15	0.006
Y3	0.40	0.016
Z	0.65	0.026

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