



# JLE05BUD1-2L

1-Line Bi-directional TVS Diode

Jialan-Microelectronics

## Description

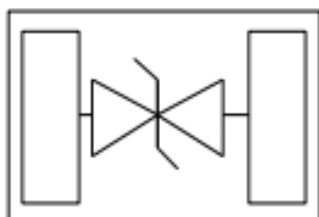
The JLE05BUD1-2L is a bi-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The

JLE05BUD1-2L complies with the IEC 61000-4-2 (ESD) with  $\pm 30$  kV air and  $\pm 30$  kV 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 JLE05BUD1-2L an ideal choice to protect cell phone, digital , audio players and many other portable applications.

## Features

- \* 40W peak pulse power (8/20us)
- \* Low leakage:nA level
- \* Operating voltage: 5V
- \* Low clamping voltage
- \* One power line protects
- \* Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge:  $\pm 30$ kV
    - Contact discharge:  $\pm 30$ kV
  - IEC61000-4-5 (Lightning) 4A (8/20 $\mu$ s)
- \* RoHS Compliant
- \* Package: DFN0603-2

## Circuit Diagram



Circuit and Pin Schematic

## Marking Diagram



Transparent top view

G:Device Marking Code

## Applications

- \* Notebooks and Handhelds
- \* Peripherals
- \* Projection TV
- \* Cellular Handsets and Accessories
- \* Portable Instrumentation
- \* Audio Players
- \* High Speed Line : USB1.0/2.0,VGA

## Ordering Information

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



## JLE05BUD1-2L

### Absolute Maximum Ratings ( $T_A=25^{\circ}\text{C}$ unless otherwise specified)

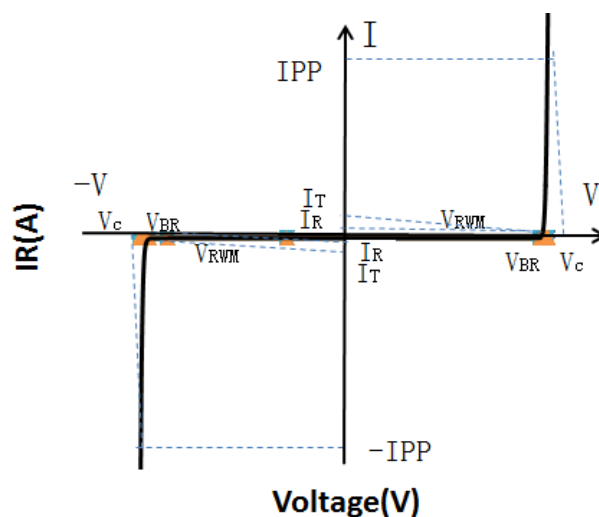
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	Ppk	40	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	IPP	4	A
ESD per IEC 61000-4-2 (Air)	VESD	$\pm 30$	kV
ESD per IEC 61000-4-2 (Contact)		$\pm 30$	
Operating Temperature Range	TJ	-55to +150	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

### Electrical Characteristics ( $T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	$V_{RWM}$				5	V
Breakdown Voltage	$V_{BR}$	$I_T = 1\text{mA}$	6		12	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5\text{V}$		0.001	0.1	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{PP} = 1\text{A}$ (8 x 20 $\mu\text{s}$ pulse)		8.7	15	V
Clamping Voltage	$V_C$	$I_{PP} = 4\text{A}$ (8 x 20 $\mu\text{s}$ pulse)		11.2	17.5	V
Junction Capacitance	$C_J$	$V_R = 0\text{V}$ , $f = 1\text{MHz}$		10.2	15	pF

### Portion Electronics Parameter

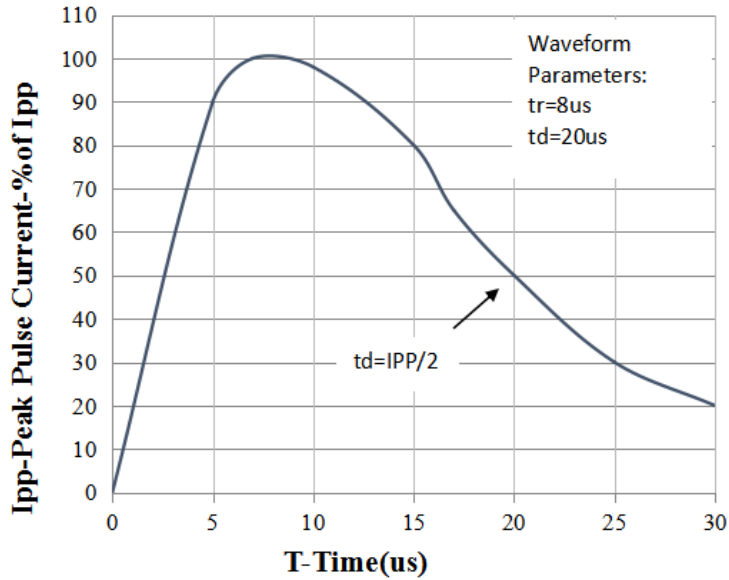
Symbol	Parameter
$I_T$	Test Current
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_C$



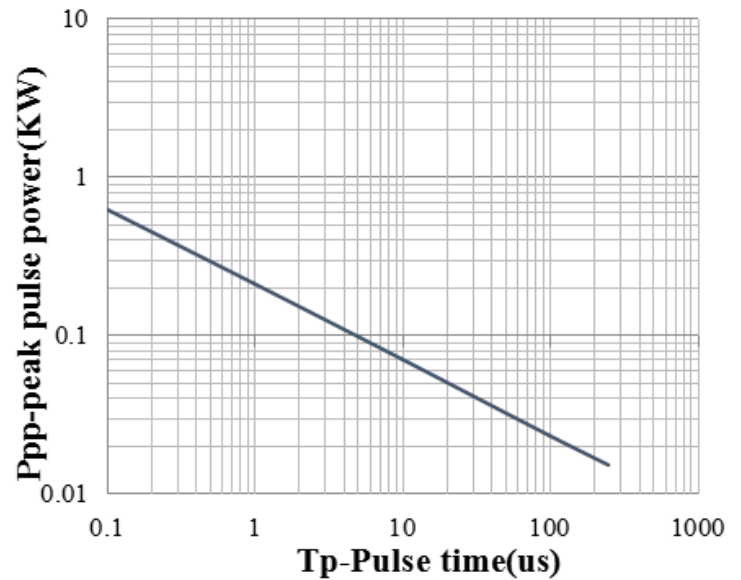


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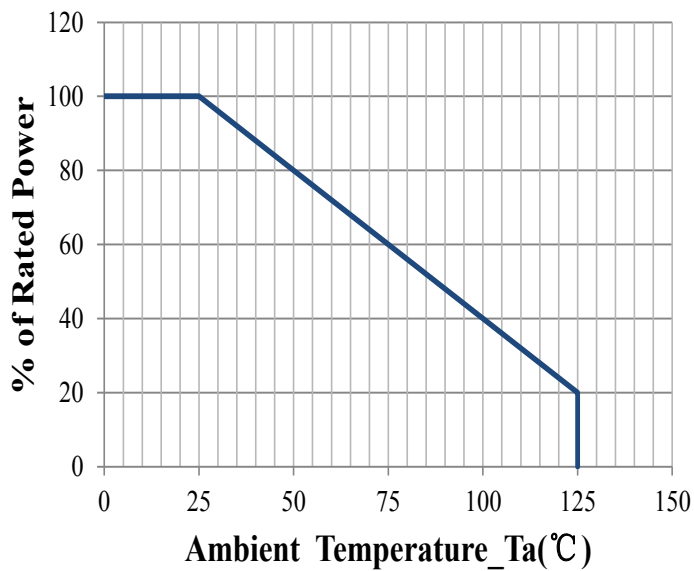
## Typical Performance Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise Specified)



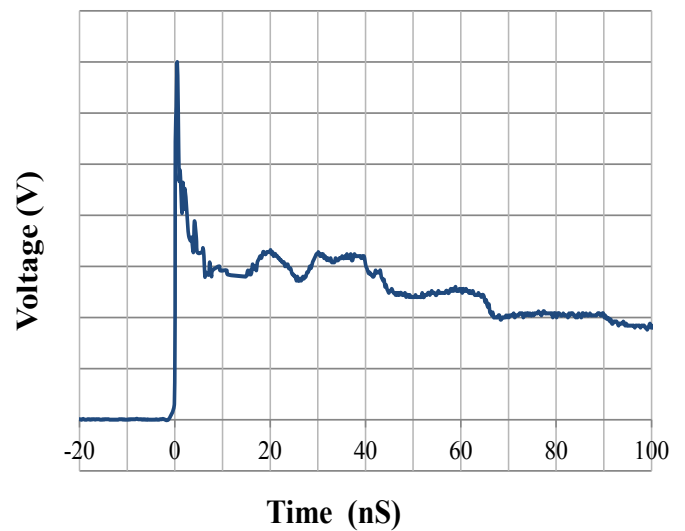
8 X 20us Pulse Waveform



Peak Pulse Power vs. Pulse Time



Power Derating Curve

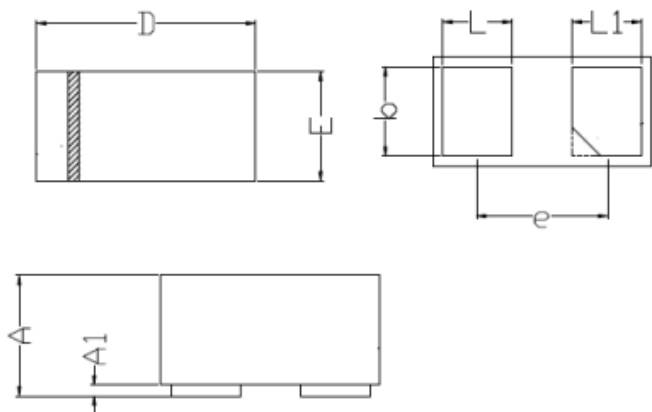


IEC61000-4-2 Pulse Waveform



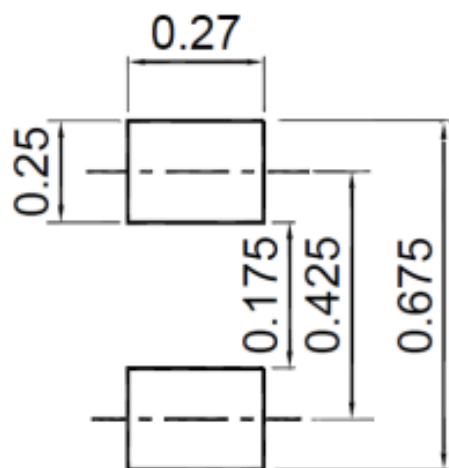
# JLE05BUD1-2L

## DFN0603-2 Package Outline Drawing (Dimensions in millimeters)



DIM	Millimeters	
	Min	Max
A	0.230	0.330
A1	0.000	0.050
D	0.550	0.650
E	0.250	0.350
b	0.215	0.295
L	0.115	0.225
L1	0.115	0.225
e	0.535BSC	

### Suggested Land Pattern



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