



# JLE05BUD1-2H

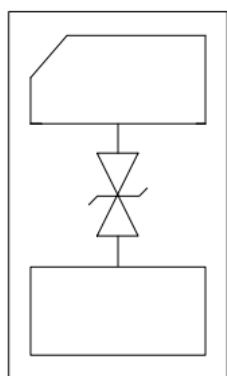
## 1-Line Bi-directional Low Capacitance TVS Diode

Jalan-Microelectronics

### Description

The JLE05BUD1-2H is a bi-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time, very low capacitance and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The JLE05BUD1-2H complies with the IEC 61000-4-2 (ESD) with  $\pm 15\text{kV}$  air and  $\pm 8\text{kV}$  contact discharge. It is assembled into an ultra- small lead-free package. The small size and very low capacitance make JLE05BUD1-2H an ideal choice to protect cell phone, digital cameras, audio players, data interface and many other portable applications.

### Circuit Diagram



Circuit and Pin Schematic

### Features

- \* Very low capacitance: 2.5pF typical
- \* 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:  $\pm 15\text{kV}$
    - Contact discharge:  $\pm 8\text{kV}$
  - IEC61000-4-5 (Lightning) 2A (8/20 $\mu\text{s}$ )
- \* RoHS Compliant
- \* Package: DFN0603-2

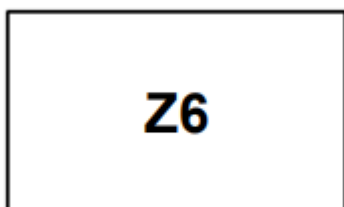
### Applications

- \* Cellular Handsets and Accessories
- \* Personal Digital Assistants
- \* Notebooks and Handhelds
- \* Portable Instrumentation
- \* Digital Cameras
- \* Peripherals
- \* Audio Players

### Ordering Information

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

### Marking Diagram



Transparent top view

Z6:Device Marking Code



## JLE05BUD1-2H

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

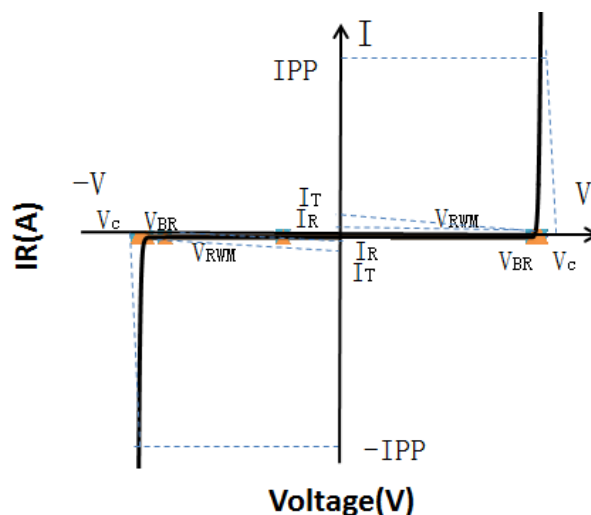
Parameter	Symbol	Value	Unit
ESD per IEC 61000-4-2 (Air)	VESD	$\pm 15$	kV
ESD per IEC 61000-4-2 (Contact)		$\pm 8$	
Operating Temperature Range	TJ	-55to +125	$^\circ\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^\circ\text{C}$

### 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			V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5\text{V}$			0.2	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{PP} = 1\text{A}$ (8 x 20 $\mu\text{s}$ pulse)			10	V
Junction Capacitance	$C_J$	$V_R = 0\text{V}$ , $f = 1\text{MHz}$		2.5	3	pF

### Portion Electronics Parameter

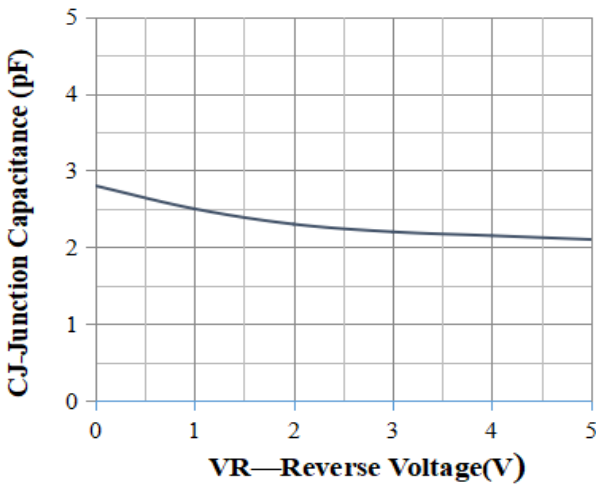
Symbol	Parameter
$I_T$	Test Current
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_C$



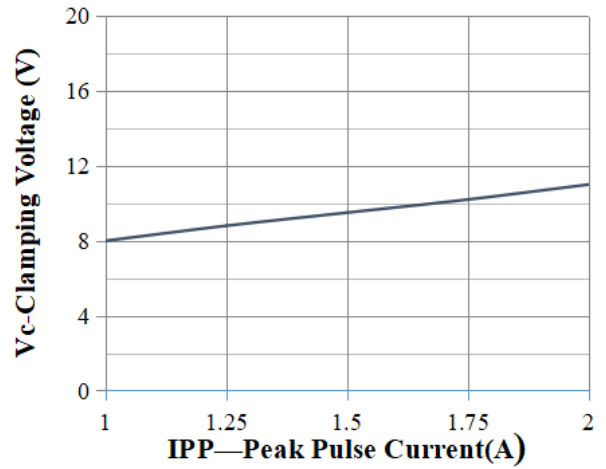


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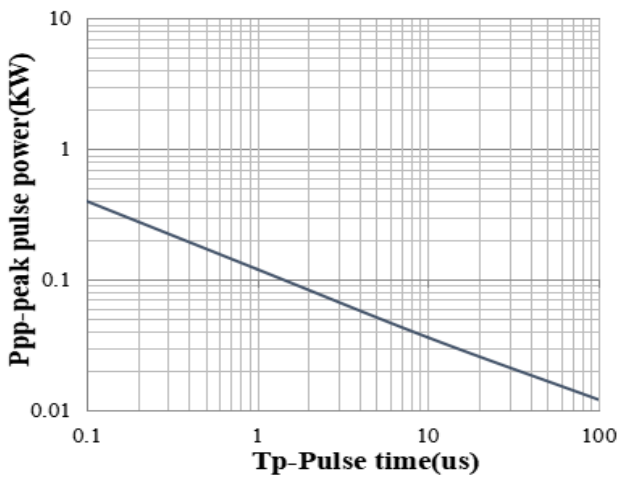
## Typical Performance Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise Specified)



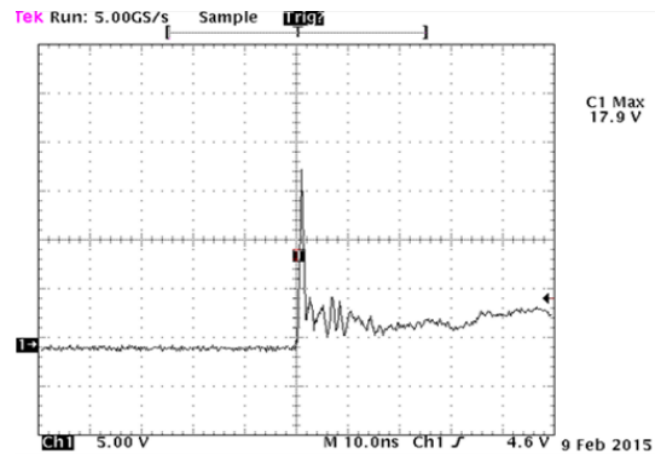
Junction Capacitance vs. Reverse Voltage



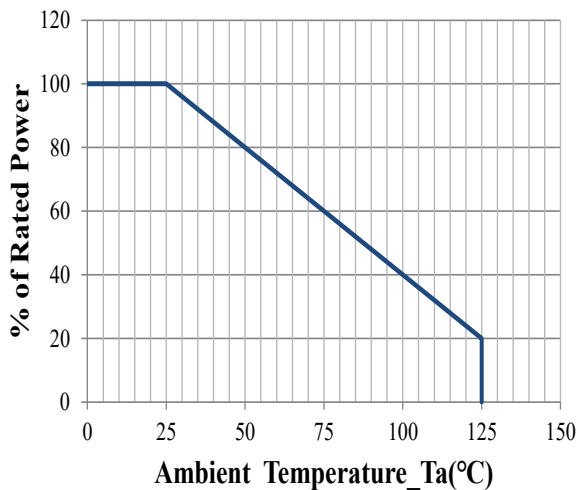
Clamping Voltage vs. Peak Pulse Current



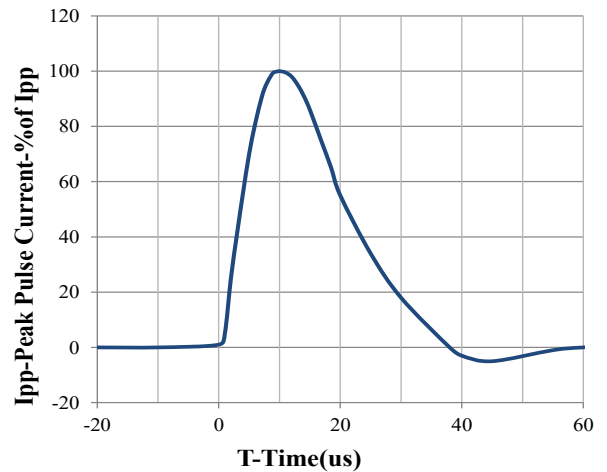
Peak Pulse Power vs. Pulse Time



Note: Data is taken with a 10x attenuator  
IEC61000-4-2 Pulse Waveform



Power Derating Curve

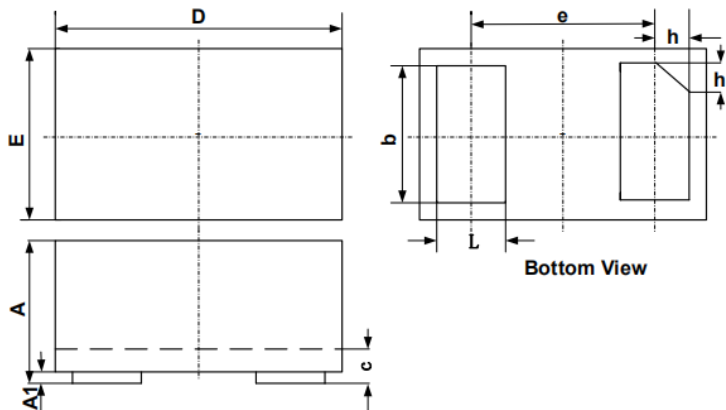


8 X 20us Pulse Waveform



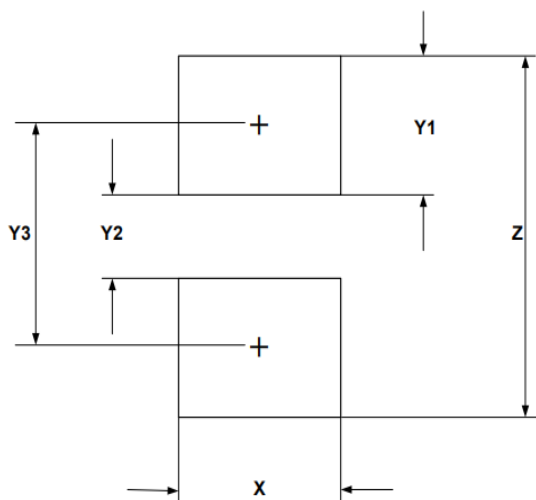
# JLE05BUD1-2H

## 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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