

JE05B1UD10-2L

1-Line Bi-directional TVS Diode



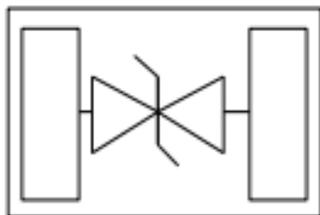
Description

The JE05B1UD10-2L 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 JE05B1UD10-2L complies with the IEC 61000-4-2 (ESD) with ± 30 kV air and ± 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 JE05B1UD10-2L 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: ± 30 kV
 - Contact discharge: ± 30 kV
 - IEC61000-4-5 (Lightning) 4A (8/20 μ s)
- * RoHS Compliant
- * Package: DFN0603-2

Circuit Diagram



Circuit and Pin Schematic

Applications

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

Marking Diagram



Transparent top view

F:Device Marking Code

Ordering Information

Part Number	Packaging	Reel Size
JE05B1UD10-2L	10000/Tape & Reel	7 inch

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

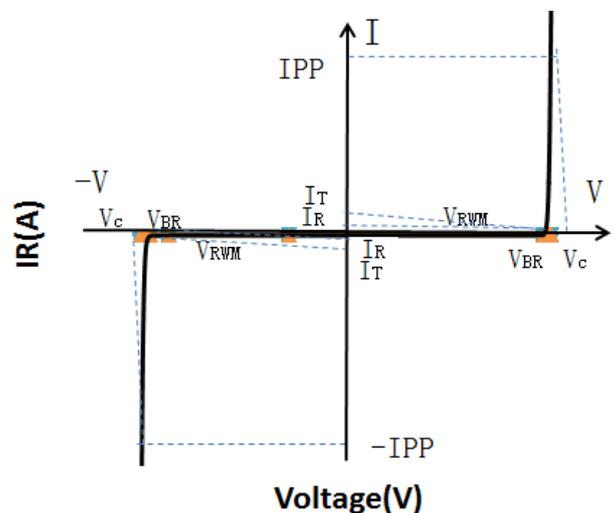
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	40	W
Peak Pulse Current (8/20 μs)	IPP	4	A
ESD per IEC 61000-4-2 (Air)	VESD	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	TJ	-55to +150	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

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

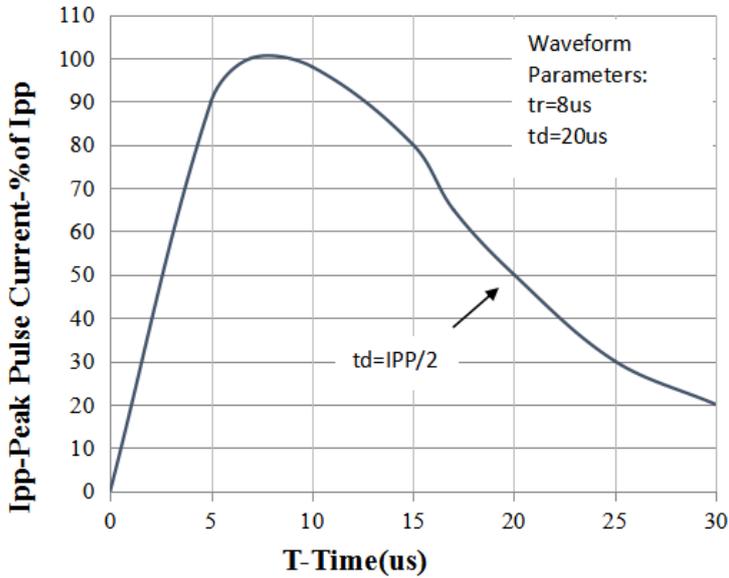
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				5	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	6		12	V
Reverse Leakage Current	I_R	$V_{RWM} = 5\text{V}$		0.001	0.1	μA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$ (8 x 20 μs pulse)		8.7	15	V
Clamping Voltage	V_C	$I_{PP} = 4\text{A}$ (8 x 20 μs 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

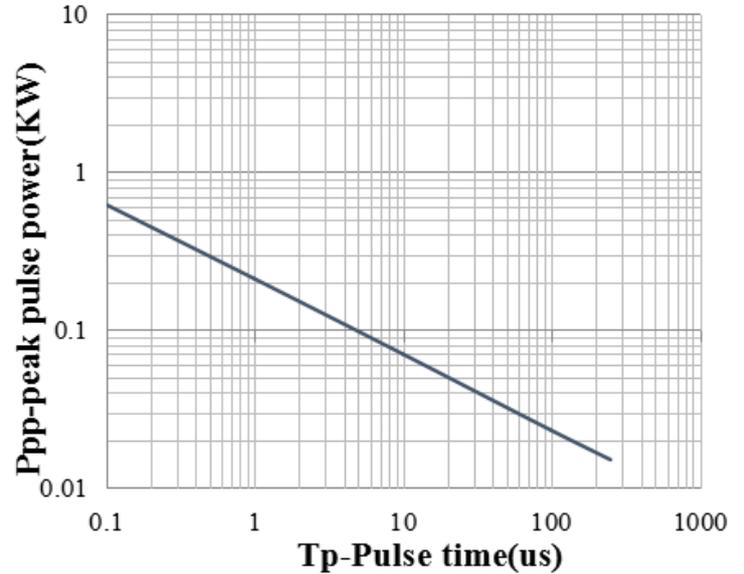
Symbol	Parameter
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_C



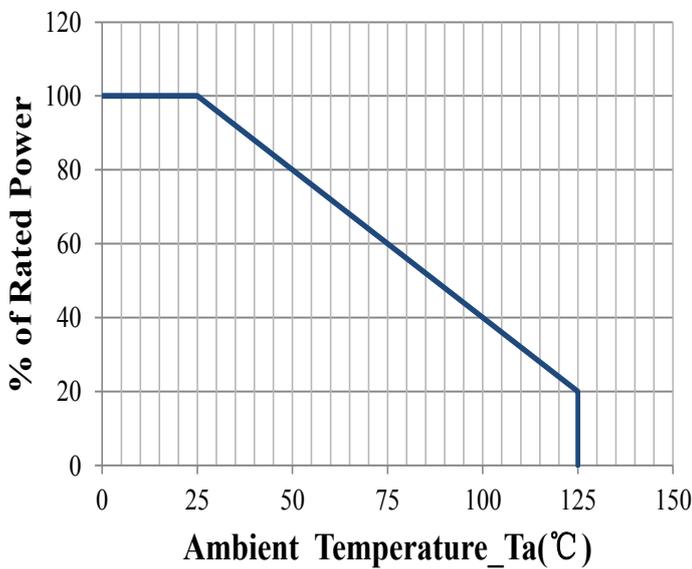
Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)



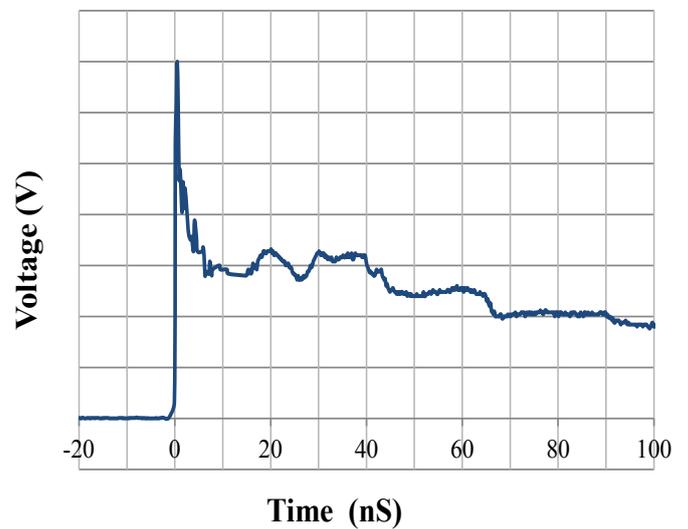
8 X 20us Pulse Waveform



Peak Pulse Power vs. Pulse Time

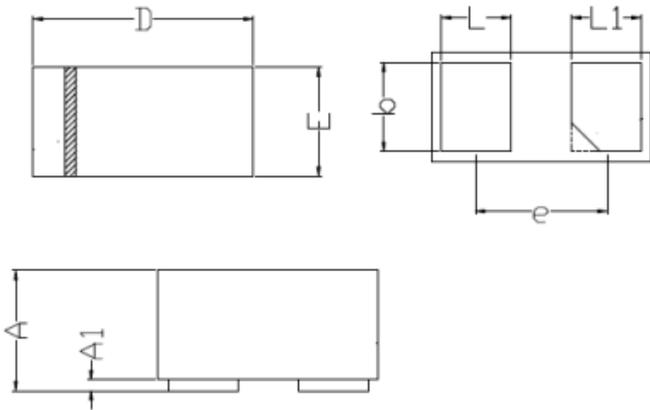


Power Derating Curve



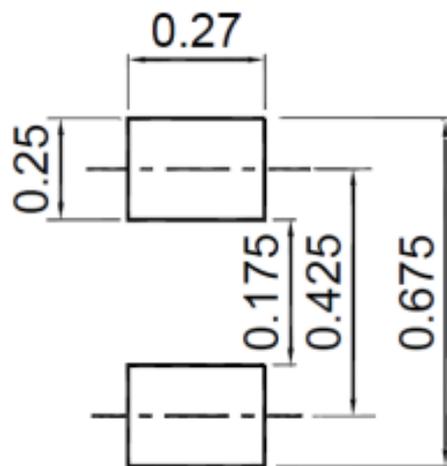
IEC61000-4-2 Pulse Waveform

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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