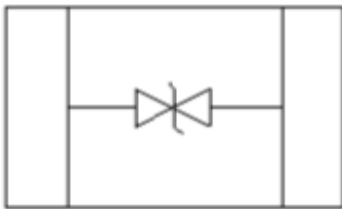


Description

The JE05B1UD80-2 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 JE05B1UD80-2 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 0201 package. The small size and high ESD surge protection make JE05B1UD80-2 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Circuit Diagram



Package Outline



Features

- * Protects one data or power line
- * Low leakage: nA level
- * Operating voltage: 5V
- * Low clamping voltage
- * 2-pin leadless package
- * Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: ± 30 kV
 - Contact discharge: ± 30 kV
 - IEC 61000-4-5 (Lightning) 7A (8/20 μ s)
- * RoHS Compliant
- * Package: 0201

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
JE05B1UD80-2	15000/Tape & Reel	7 inch

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

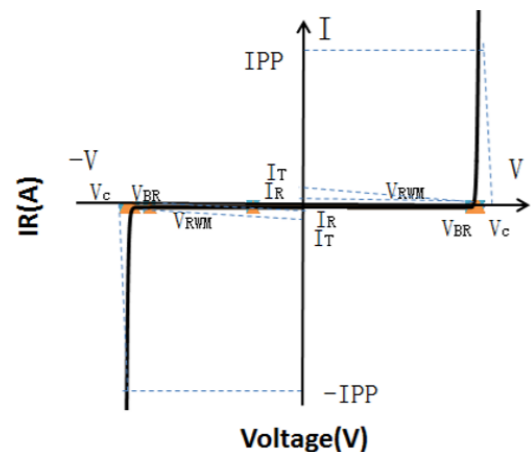
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	70	W
Peak Pulse Current (8/20 μs)	IPP	7	A
ESD per IEC 61000-4-2 (Air)	VESD	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	TJ	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

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

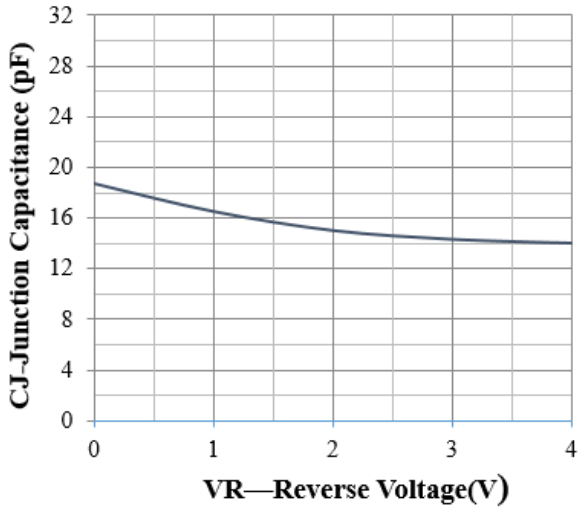
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				5	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	6			V
Reverse Leakage Current	I_R	$V_{RWM} = 5.0\text{V}$			0.2	μA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$ (8 x 20 μs pulse)			8	V
Clamping Voltage	V_C	$I_{PP} = 7\text{A}$ (8 x 20 μs pulse)			10	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$			20	pF

Portion Electronics Parameter

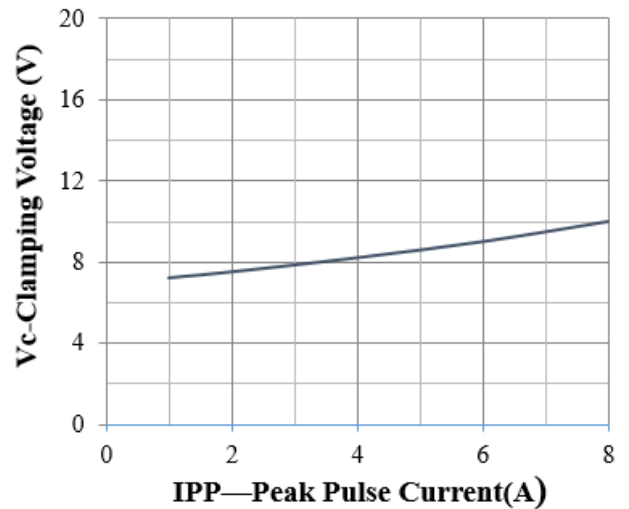
Symbol	Parameter
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_C



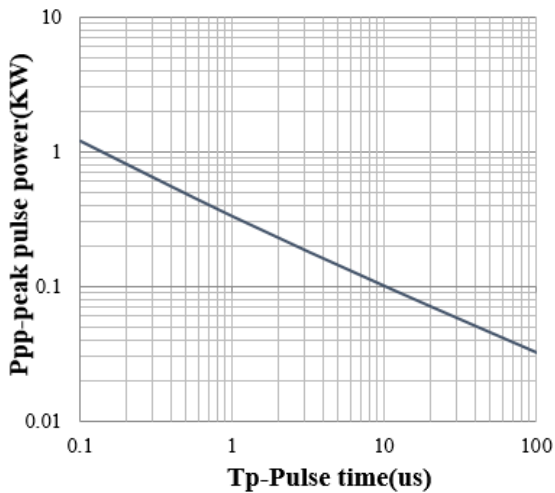
Typical Performance Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise Specified)



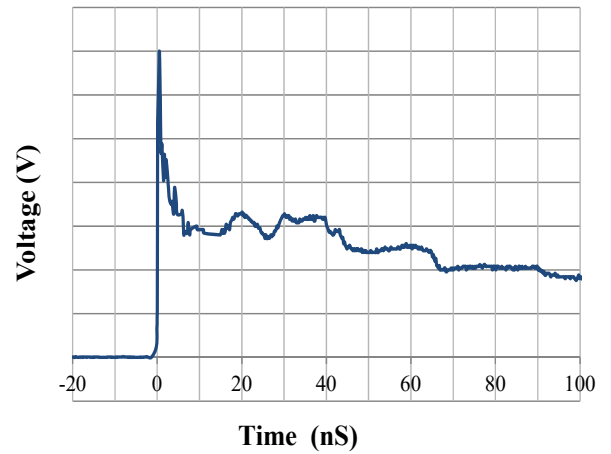
Junction Capacitance vs. Reverse Voltage



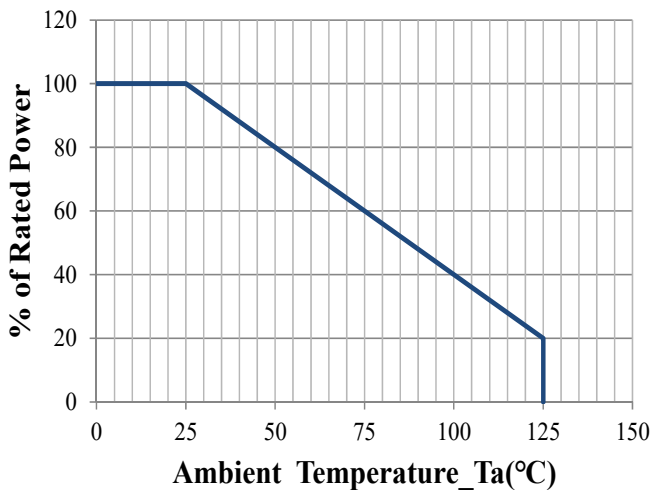
Clamping Voltage vs. Peak Pulse Current



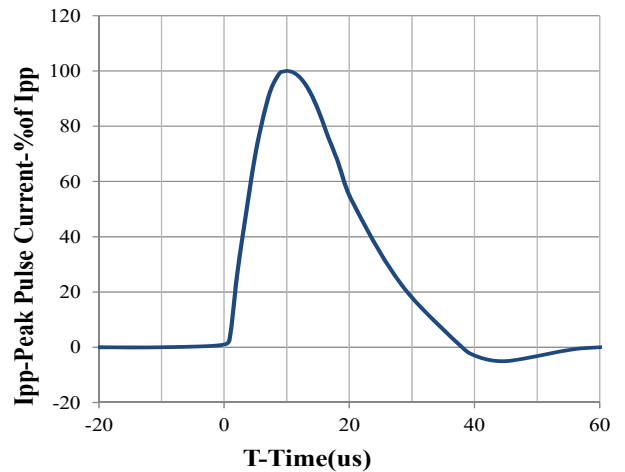
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform

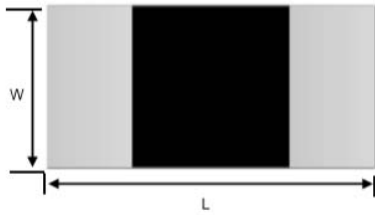


Power Derating Curve

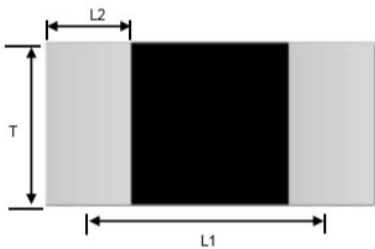


8 X 20us Pulse Waveform

0201 Package Outline Drawing



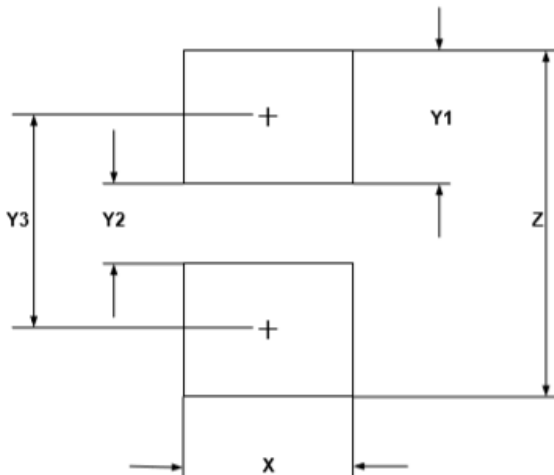
Top View



Side View

SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
W	0.25	0.30	0.35	0.010	0.012	0.014
L	0.55	0.60	0.65	0.022	0.024	0.026
T	0.25	0.30	0.35	0.010	0.012	0.014
L1	0.30 BSC			0.012 BSC		
L2	0.10	0.15	0.20	0.004	0.006	0.008

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	0.30	0.012
Y1	0.25	0.010
Y2	0.30	0.012
Y3	0.55	0.022
Z	0.80	0.032

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