



JLE05BRS3-2

1-Line Bi-directional High Power TVS Diode

Jialan-Microelectronics

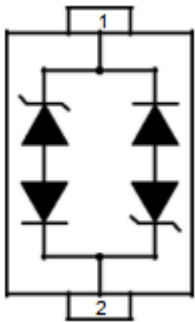
Description

The JLE05BRS3-2 is a bi-directional TVS diode, utilizing leading monolithic silicon technology to provide fast re-sponse time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high- speed data lines. The JLE05BRS3-2 has an ultra-low capacitance with a typical value at 0.5pF, and complies with the IEC 61000-4-2 (ESD) standard with ±30kV air and ±25kV contact discharge. It is assembled into a SOD-323 lead-free package. The small size, ultra - low capaci-tance and high ESD surge protection make JLE05BRS3-2 an ideal choice to protect cell phone, digital video inter-faces and other high speed ports.

Features

- * 150W peak pulse power (8/20µs)
- * Low leakage:nA level
- * Operating voltage: 5V
- * Ultra low clamping voltage
- * One power line protects
- * Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: ±30kV
 - Contact discharge: ±25kV
 - IEC61000-4-5 (Lightning) 6A (8/20µs)
- * RoHS Compliant
- * Package: SOD-323

Circuit Diagram



Circuit and Pin Schematic

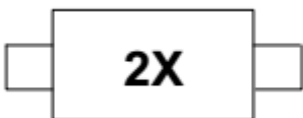
Applications

- * Fast-charge battery chargers
- * Power management system
- * Cellular Handsets and Accessories
- * Personal Digital Assistants
- * Notebooks and Handhelds
- * Portable Instrumentation
- * Digital Cameras

Ordering Information

Part Number	Packaging	Reel Size
JLE05BRS3 -2	3000/Tape & Reel	7 inch

Marking Diagram



Transparent top view

2X:Device Marking Code



JLE05BRS3 -2

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

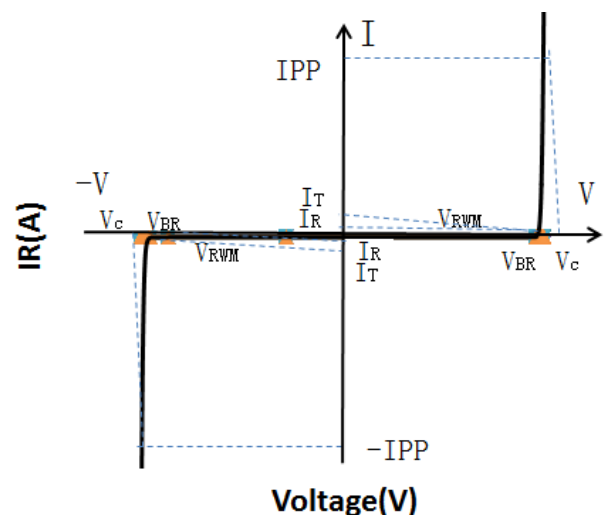
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	150	W
Peak Pulse Current (8/20 μs)	IPP	6	A
ESD per IEC 61000-4-2 (Air)	VESD	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 25	
Operating Temperature Range	TJ	-55to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				5.0	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	6.5		9.5	V
Reverse Leakage Current	I_R	$V_{RWM} = 5\text{V}$			0.2	μA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$ (8 x 20 μs pulse)			12	V
Clamping Voltage	V_C	$I_{PP} = 6\text{A}$ (8 x 20 μs pulse)			25	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$		0.3	0.5	pF

Portion Electronics Parameter

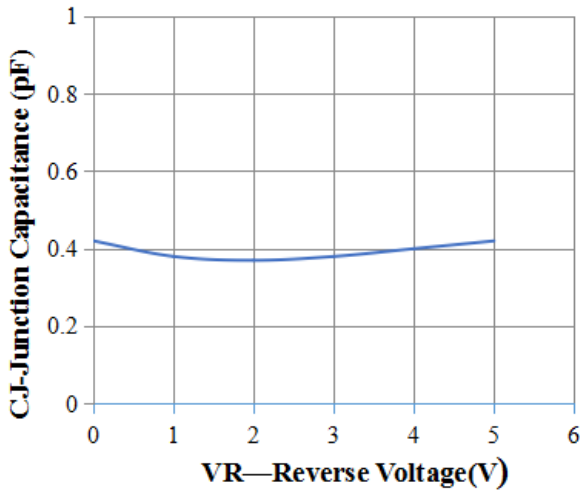
Symbol	Parameter
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_C



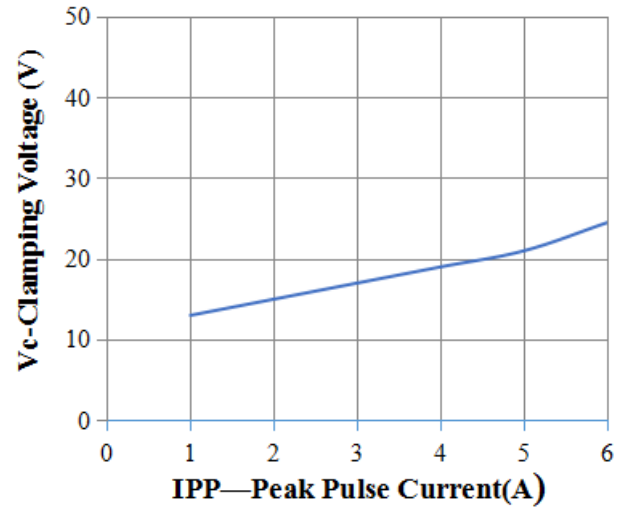


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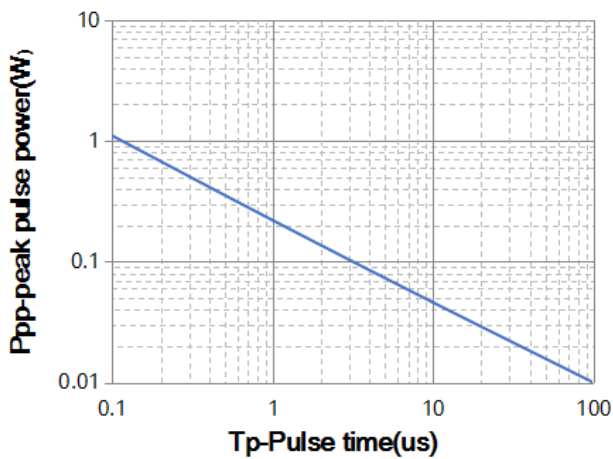
Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)



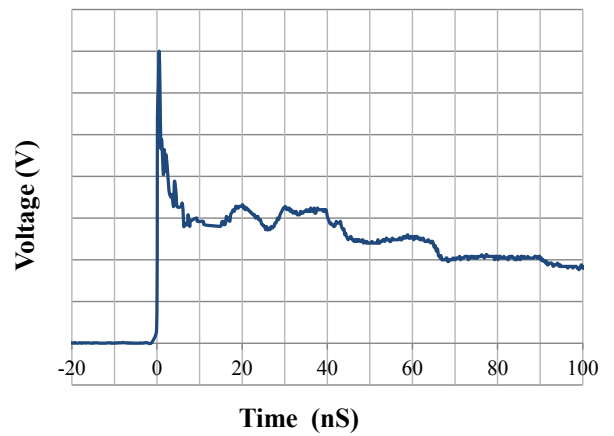
Junction Capacitance vs. Reverse Voltage



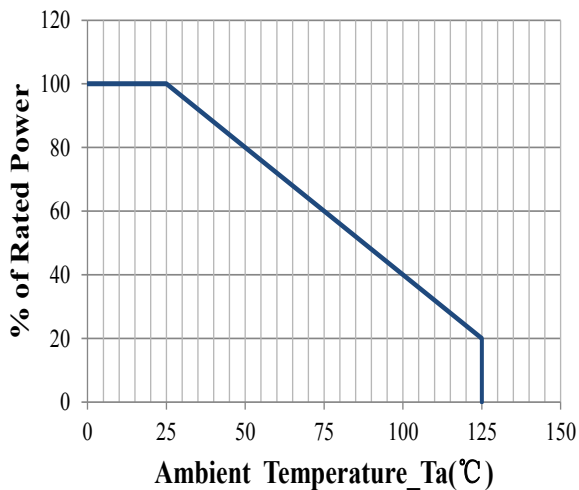
Clamping Voltage vs. Peak Pulse Current



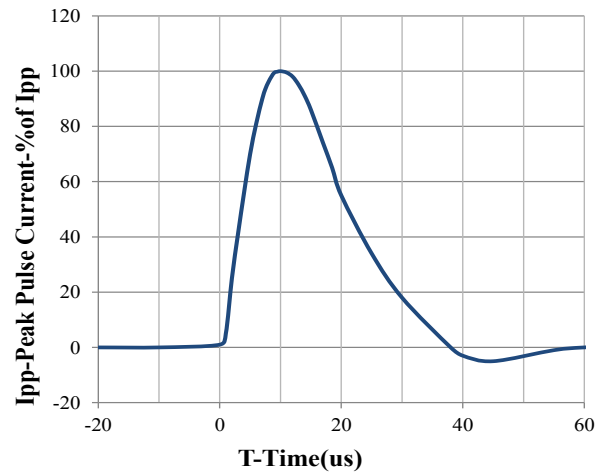
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform



Power Derating Curve

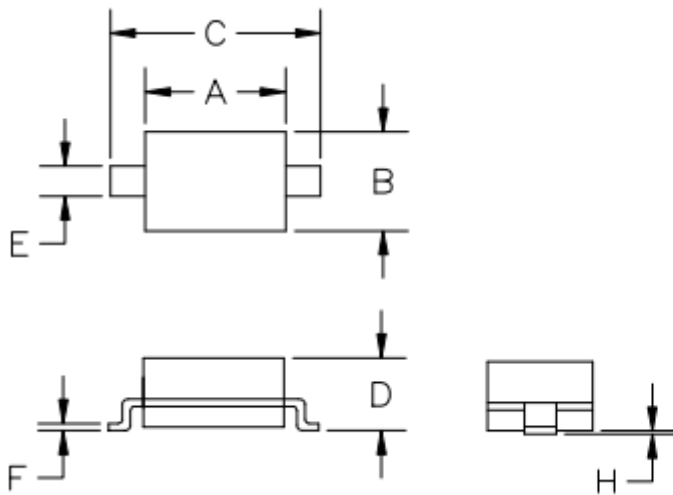


8 X 20us Pulse Waveform



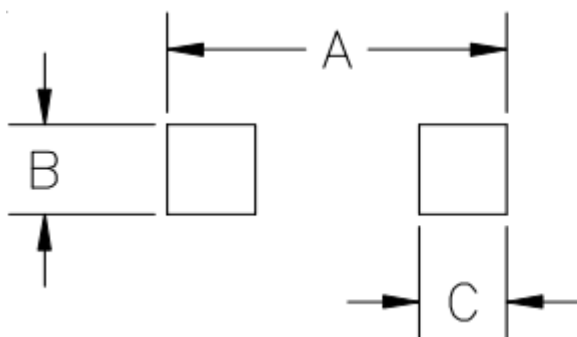
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SOD-323 Package Outline Drawing (Dimensions in millimeters)



SYM	DIMENSIONS			
	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.50	1.80	0.060	0.071
B	1.20	1.40	0.045	0.054
C	2.30	2.70	0.090	0.107
D	-	1.10	-	0.043
E	0.30	0.40	0.012	0.016
F	0.10	0.25	0.004	0.010
H	-	0.10	-	0.004

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
A	3.15	0.120
B	0.80	0.031
C	0.80	0.031

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