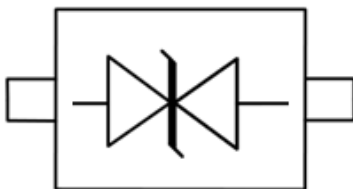


Description

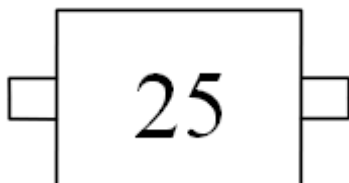
The JE05B1RS50-2 is a bi-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high-speed data lines. The JE05B1RS50-2 has an ultra-low capacitance with a typical value at 0.4pF, and complies with the IEC 61000-4-2 (ESD) standard with $\pm 20\text{kV}$ air and $\pm 15\text{kV}$ contact discharge. The small size, ultra-low capacitance and high ESD surge protection make JE05B1RS50-2 an ideal choice to protect cell phone, digital video interfaces and other high speed ports.

Circuit Diagram



Circuit Diagram

Marking Diagram



Transparent top view

25:Device Marking Code

Features

- * Ultra low capacitance: 0.4pF typical
- * Ultra 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: $\pm 20\text{kV}$
 - Contact discharge: $\pm 15\text{kV}$
 - IEC61000-4-5 (Lightning) 4A (8/20 μs)
- * RoHS Compliant
- * Package:SOD-523

Applications

- * Smart phones
- * Display Ports
- * MDDI Ports
- * USB Ports
- * Digital Video Interface (DVI)
- * PCI Express and Serial SATA Ports

Ordering Information

Part Number	Packaging	Reel Size
JE05B1RS50-2	10000/Tape & Reel	7 inch

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

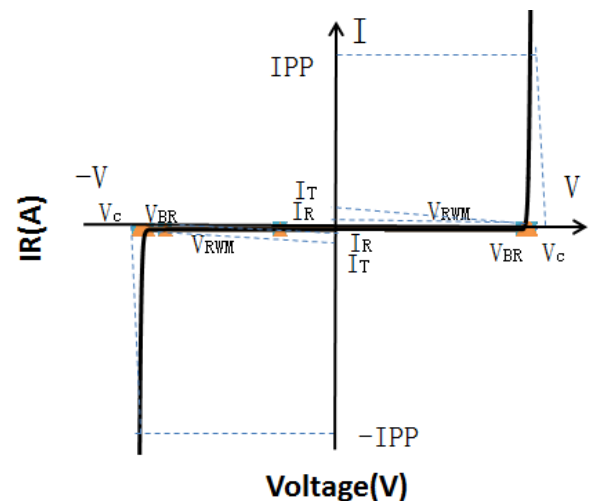
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	80	W
Peak Pulse Current (8/20 μs)	IPP	4	A
ESD per IEC 61000-4-2 (Air)	VESD	± 20	kV
ESD per IEC 61000-4-2 (Contact)		± 15	
Operating Temperature Range	TJ	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^\circ\text{C}$

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

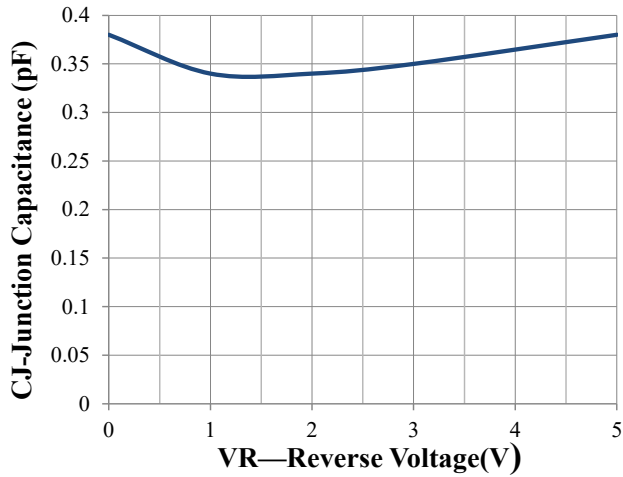
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				5.0	V
Breakdown Voltage	V_{BR}	$I_{\text{T}} = 1\text{mA}$	6.0	7.5	8.5	V
Reverse Leakage Current	I_{R}	$V_{\text{RWM}} = 5.0\text{V}$			0.5	μA
Clamping Voltage	V_{C}	$I_{\text{PP}} = 1\text{A}$ (8 x 20 μs pulse)			12	V
Clamping Voltage	V_{C}	$I_{\text{PP}} = 4\text{A}$ (8 x 20 μs pulse)			20	V
Junction Capacitance	C_{J}	$V_{\text{R}} = 0\text{V}$, $f = 1\text{MHz}$		0.4	0.5	pF

Portion Electronics Parameter

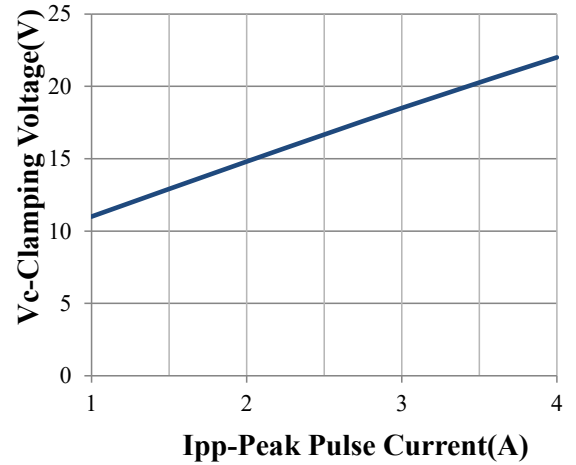
Symbol	Parameter
I_{T}	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_{C}	Clamping Voltage @ I_{C}



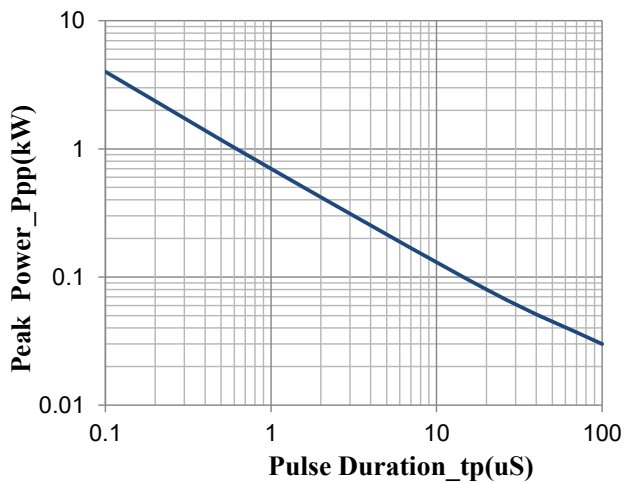
Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)



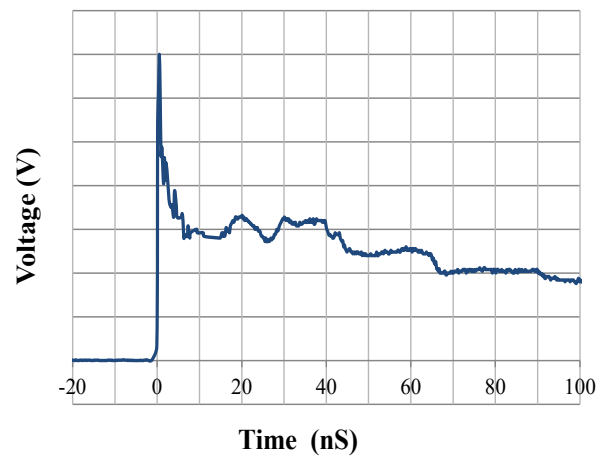
Junction Capacitance vs. Reverse Voltage



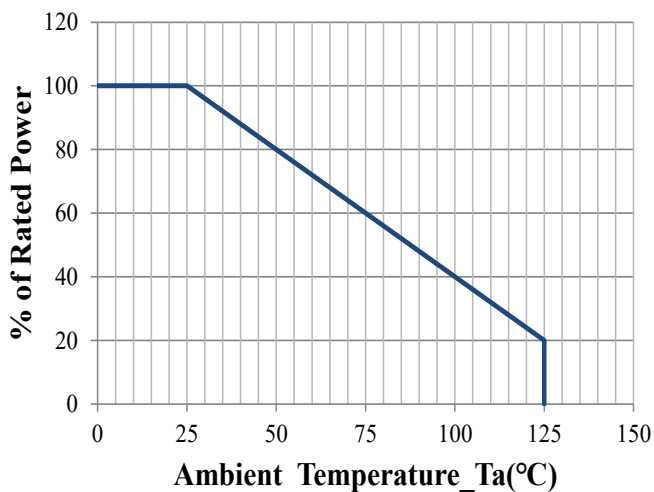
Clamping Voltage vs. Peak Pulse Current



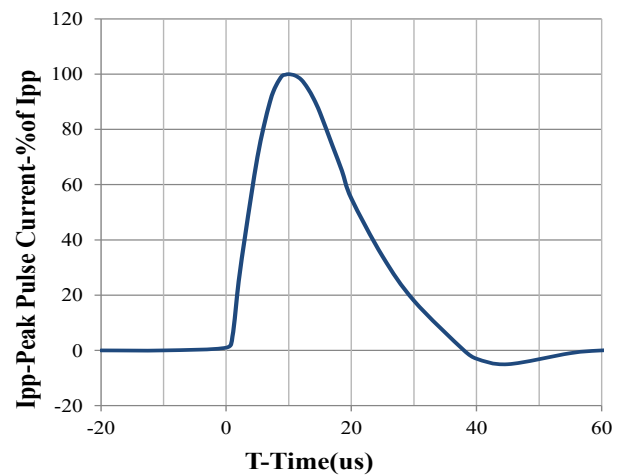
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform

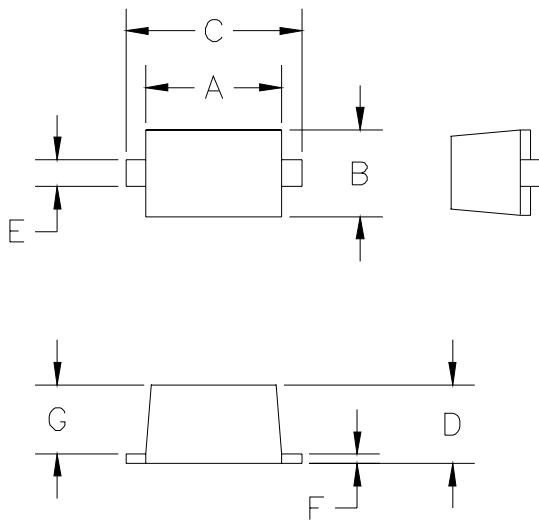


Power Derating Curve



8 X 20us Pulse Waveform

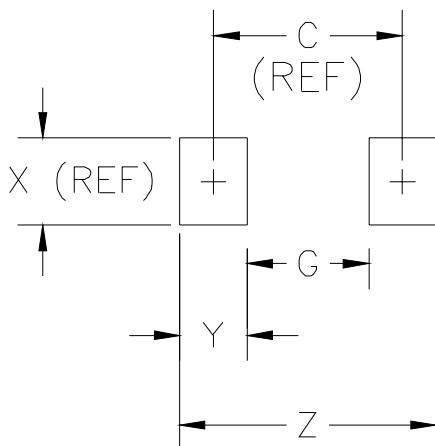
SOD-523 Package Outline Drawing



DIMENSIONS					
DIM ^N	INCHES		MM [1]		NOTE
	MIN	MAX	MIN	MAX	
A	.043	.051	1.10	1.30	—
B	.028	.035	0.70	0.90	—
C	.059	.067	1.50	1.70	—
D	.020	.028	0.50	0.70	—
E	.010	.014	0.25	0.35	—
F	.004	.008	0.10	0.20	—
G	.020	.028	0.50	0.70	—

[1] CONTROLLING DIMENSION: MILLIMETERS

Suggested Land Pattern



DIMENSIONS					
DIM ^N	INCHES		MM [1]		NOTE
	MIN	MAX	MIN	MAX	
C	—	.067	—	1.70	REF
G	—	.043	—	1.10	—
X	—	.031	—	0.80	REF
Y	—	.024	—	0.60	—
Z	—	.091	—	2.30	—

[1] CONTROLLING DIMENSION: MILLIMETERS

NOTICE

Jelan-Link reserves the right to make changes without further notice to any products here in.

Only obligations are those in the Jelán-Link Standard Terms and Conditions of Sale and in no case will Jelán-Link be liable for any incidental, indirect, or consequential damages arising from the sale, resale, use, or misuse of its products.