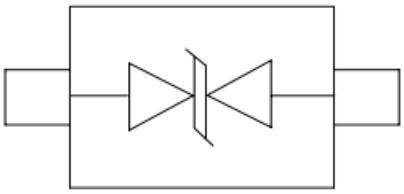
Description

The JLS05BGS3-2 is a bi-directional high power 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 JLS05BGS3 -2 complies with the IEC 61000-4-2 (ESD) with ±30kV air and ±30kV contact discharge. It is assembled into an ultra-small lead-free SOD-323 package. The small size and high ESD surge protection make JLS05BGS3-2 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Features

* 1600W peak pulse power (8/20μs)
* 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: ±30kV
    Contact discharge: ±30kV
  – IEC61000-4-5 (Lightning) 120A (8/20μs)
* RoHS Compliant
* Package: SOD-323

Circuit Diagram



Circuit and Pin Schematic

Applications

* Mobile Phones and Accessories
* Battery Protection
* USB VBus
* Power Line Protection
* Hand Held Portable Applications

Marking Diagram

Transparent top view

58:Device Marking Code

Ordering Information

Part Number	Packaging	Reel Size
JLS05BGS3-2	3000/Tape & Reel	7 inch

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

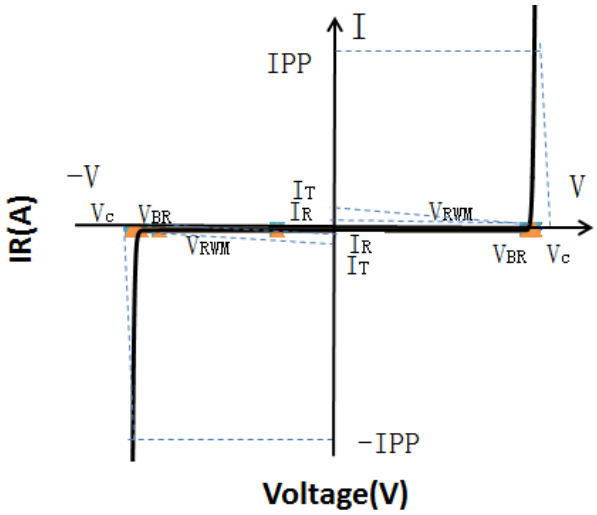
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	1600	W
Peak Pulse Current (8/20μs)	IPP	120	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	VESD	±30 ±30	kV
Operating Temperature Range	TJ	−55to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

Electrical Characteristics (T_A=25°C unless otherwise specified)

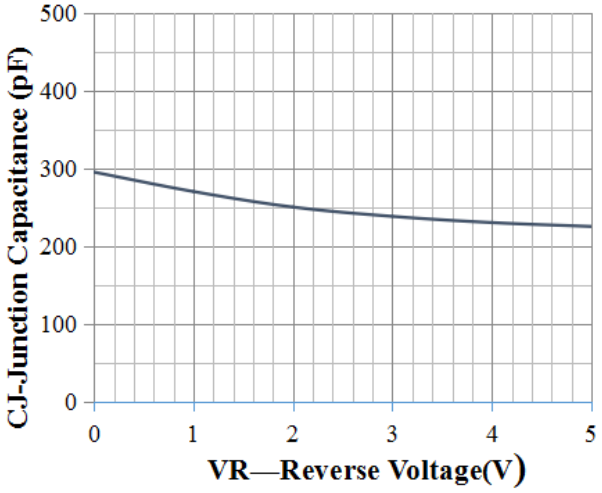
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				5	V
Breakdown Voltage	V_{BR}	I_T = 1mA	6			V
Reverse Leakage Current	I_R	V_{RWM} = 5V			0.5	uA
Clamping Voltage	V_C	I_{PP} = 20A (8 x 20μs pulse)			8.5	V
Clamping Voltage	V_C	I_{PP} = 120A (8 x 20μs pulse)			13.5	V
Junction Capacitance	C_J	VR = 0V, f = 1MHz			300	pF

Portion Electronics Parameter

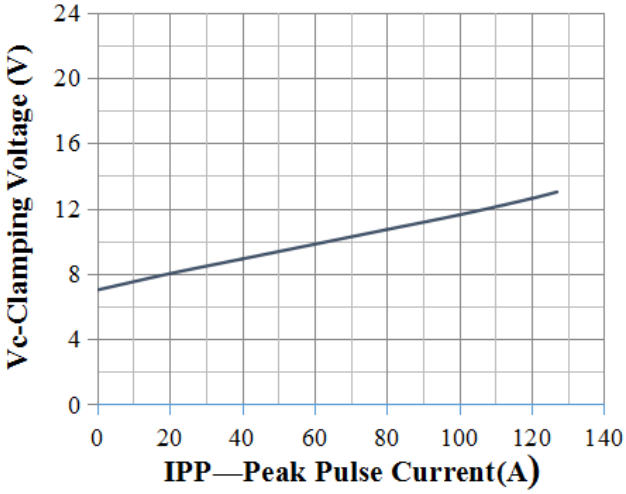
Symbol	Parameter
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
Vc	Clamping Voltage @Ic



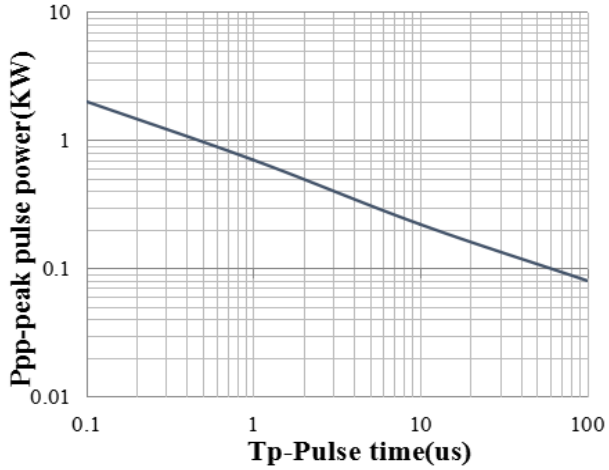
Typical Performance Characteristics (T_A=25°C unless otherwise Specified)



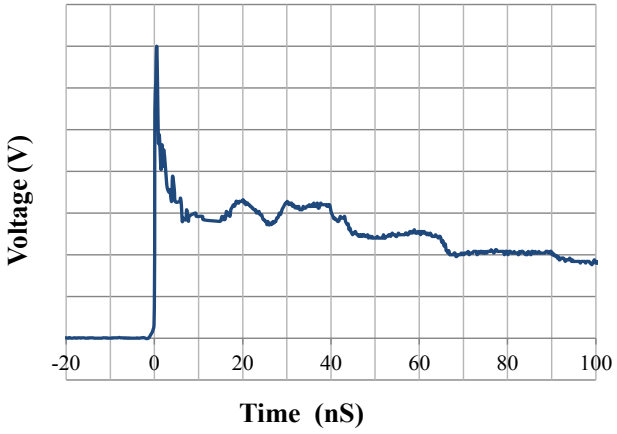
Junction Capacitance vs. Reverse Voltage



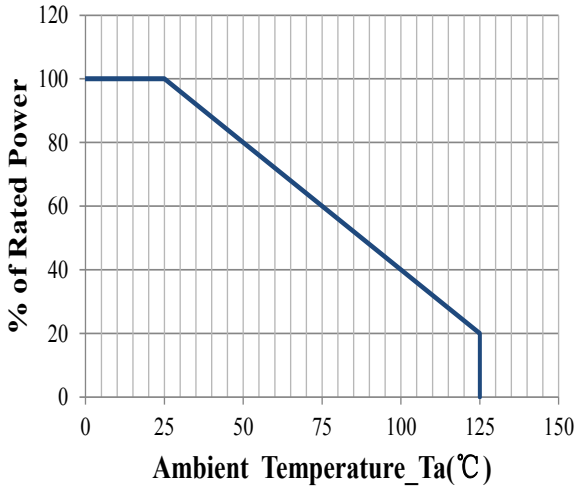
Clamping Voltage vs. Peak Pulse Current



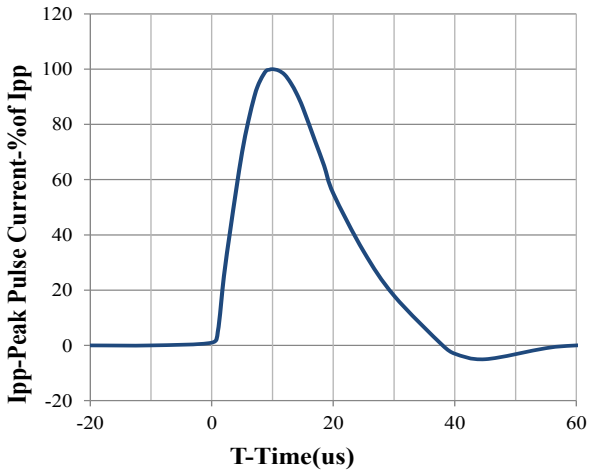
Peak Pulse Power vs. Pulse Time



IEC61000−4−2 Pulse Waveform

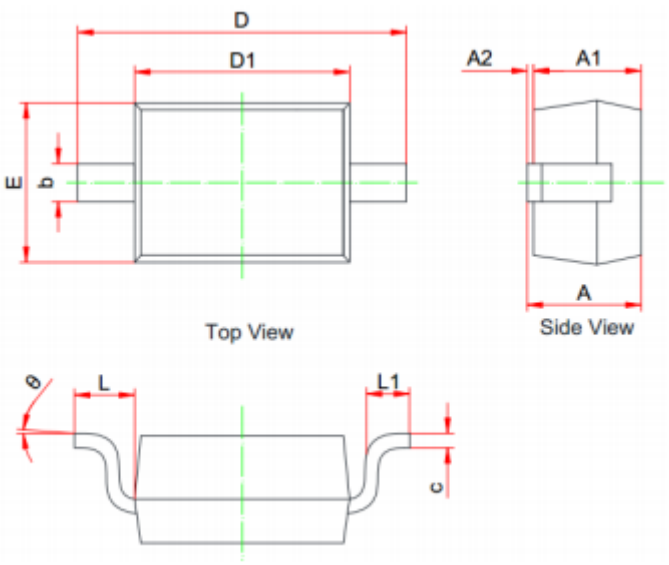


Power Derating Curve



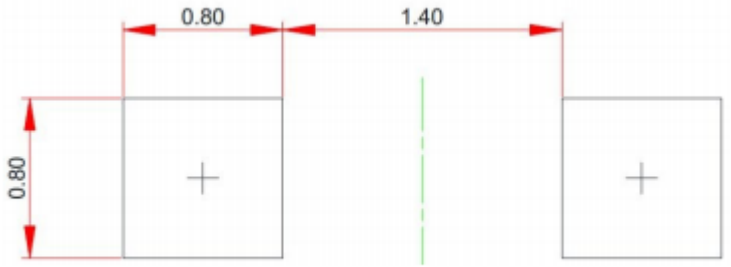
8 X 20us Pulse Waveform

SOD-323 Package Outline Drawing (Dimensions in millimeters)



	MILLIMETERS		
	MIN	NOM	MAX
A	0.800	- -	1.100
A1	0.800	- -	0.900
A2	0.000	- -	0.100
b	0.250	- -	0.400
c	0.080	- -	0.177
D1	1.600	1.700	1.800
D	2.300	- -	2.800
E	1.150	- -	1.400
L	0.475REF		
L1	0.100	- -	0.500
Θ	0°	- -	8°

Suggested Land Pattern



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