



JLS15BGS1-2

1-Line Bi-directional High Power TVS Diode

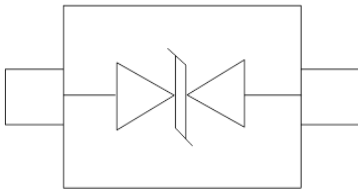
Jialan-Microelectronics

Description

The JLS15BGS1-2 is an 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 lines.

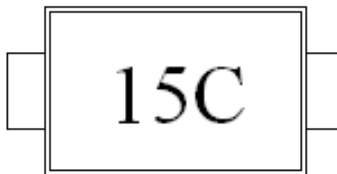
The JLS15BGS1-2 complies with the IEC 61000-4-2 (ESD) standard with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. It is assembled into a SOD-123FL lead-free package. The small size and high ESD/surge protection make JLS15BGS1-2 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Circuit Diagram



Circuit and Pin Schematic

Marking Diagram



Transparent top view

15C:Device Marking Code

Features

- * 4500W peak pulse power (8/20 μs)
- * Low leakage
- * Operating voltage: 15V
- * Ultra low clamping voltage
- * One power line protects
- * Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 30\text{kV}$
 - Contact discharge: $\pm 30\text{kV}$
 - IEC61000-4-5 (Lightning) 150A (8/20 μs)
- * RoHS Compliant
- * Package: SOD-123FL
- * Lead Finish: Matte Tin

Applications

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

Ordering Information

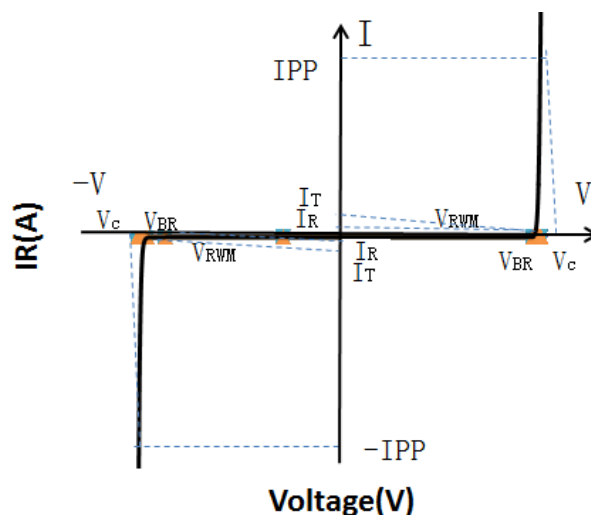
Part Number	Packaging	Reel Size
JLS15BGS1-2	3000/Tape & Reel	7 inch



Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	4500	W
Peak Pulse Current (8/20μs)	IPP	150	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	°C
Storage Temperature Range	Tstg	-55 to +150	°C

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V _{RWM}				15.0	V
Breakdown Voltage	V _{BR}	I _T = 1mA	16.5	17.5	19.5	V
Reverse Leakage Current	I _R	V _{RWM} = 15V			2.0	μA
Clamping Voltage	V _C	I _{PP} = 100A (8 x 20μs pulse)			24.0	V
Clamping Voltage	V _C	I _{PP} = 150A (8 x 20μs pulse)			30.0	V
Junction Capacitance	C _J	V _R = 0V, f = 1MHz		400	500	pF

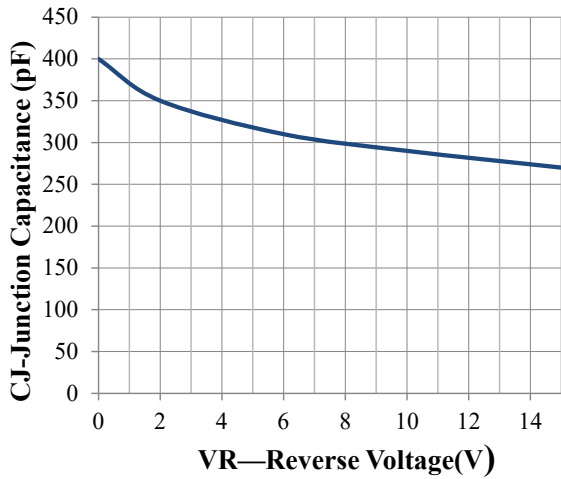
Symbol	Parameter
I _T	Test Current
I _{PP}	Maximum Reverse Peak Pulse Current
V _C	Clamping Voltage @I _C



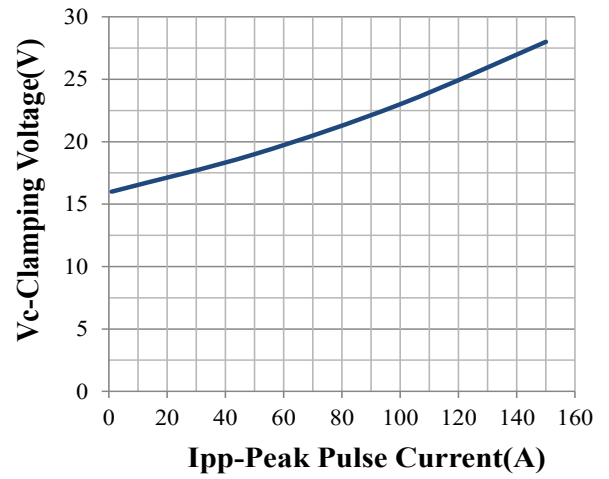


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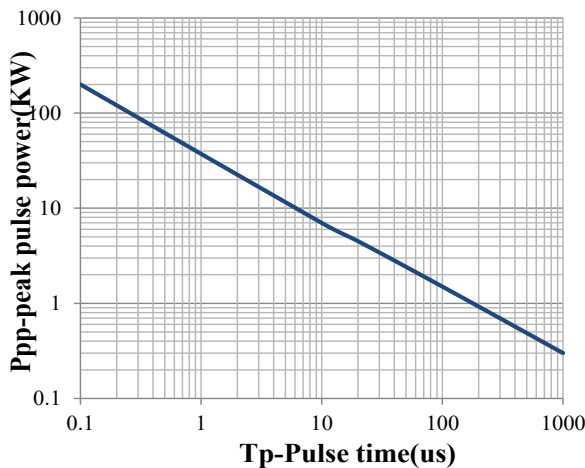
Typical Performance Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise Specified)



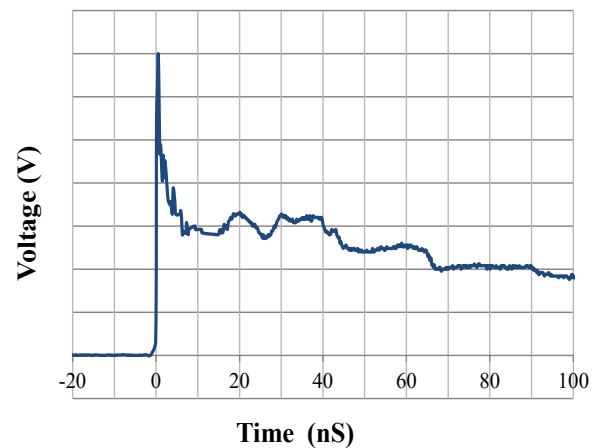
Junction Capacitance vs. Reverse Voltage



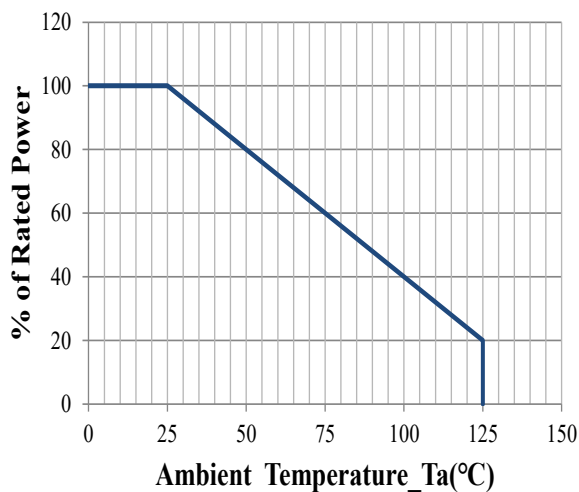
Clamping Voltage vs. Peak Pulse Current



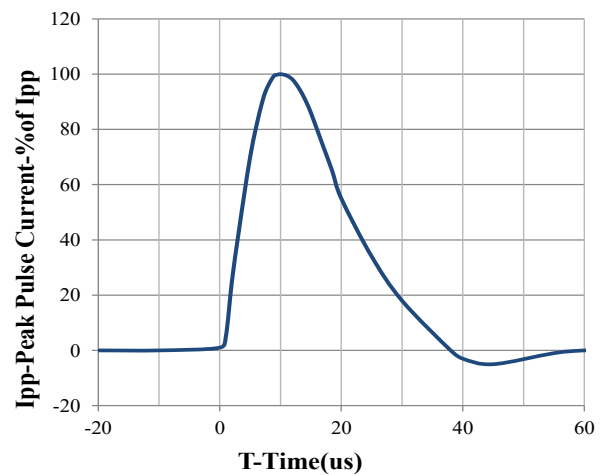
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform



Power Derating Curve

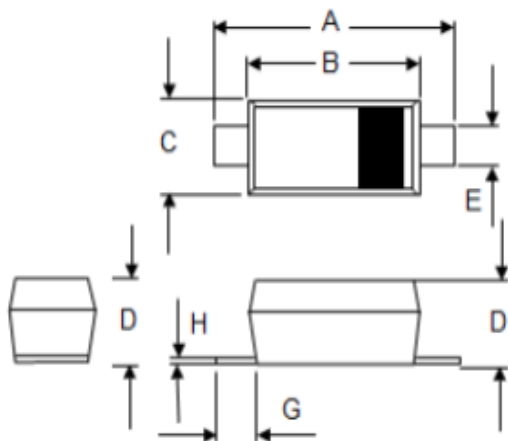


8 X 20us Pulse Waveform



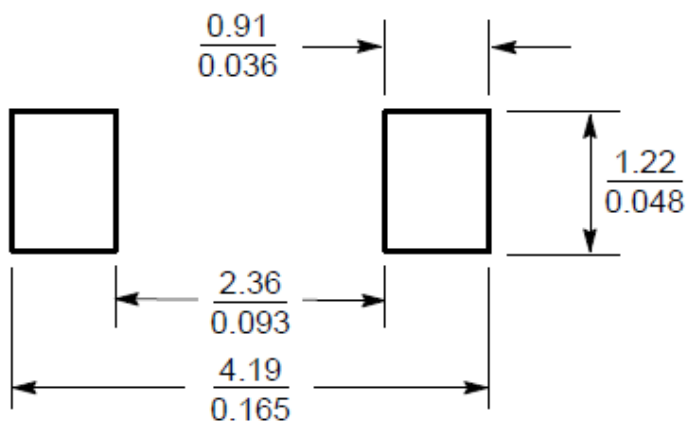
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SOD-123FL Package Outline Drawing (Dimensions in millimeters)



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	3.4	3.7	3.95	0.142	0.148	0.155
B	2.5	2.7	2.90	0.098	0.106	0.114
C	1.4	1.70	1.95	0.055	0.066	0.077
D	1.10	1.15	1.20	0.044	0.046	0.048
E	0.5	0.80	1.10	0.020	0.031	0.043
G	0.25	—	—	0.010	—	—
H	—	—	0.20	—	—	0.008

Suggested Land Pattern



SCALE 10:1 $\left(\frac{\text{mm}}{\text{inches}} \right)$

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