



JLS15UGS3-2

1-Line Uni-directional TVS Diode

Jalan-Microelectronics

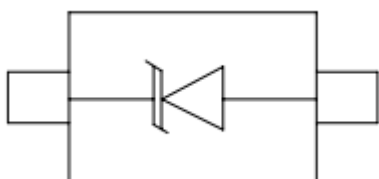
Description

The JLS15UGS3-2 is an uni-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 JLS15UGS3-2 complies with the IEC 61000-4-2 (ESD) with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. It is assembled into an ultra-small lead-free SOD-323 package. The small size and high ESD surge protection make JLS15UGS3-2 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Features

- * 2000W peak pulse power (8/20 μs)
- * Low leakage: μA level
- * Operating voltage: 15V
- * 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) 60A (8/20 μs)
- * RoHS Compliant
- * Package: SOD-323

Circuit Diagram



Circuit and Pin Schematic

Marking Diagram



Transparent top view

57D: Device Marking Code

Applications

- * Mobile Phones and Accessories
- * Hand Held Portable Applications
- * Battery Protection
- * Power Supply Protection
- * Peripherals

Ordering Information

Part Number	Packaging	Reel Size
JLS15UGS3-2	3000/Tape & Reel	7 inch



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

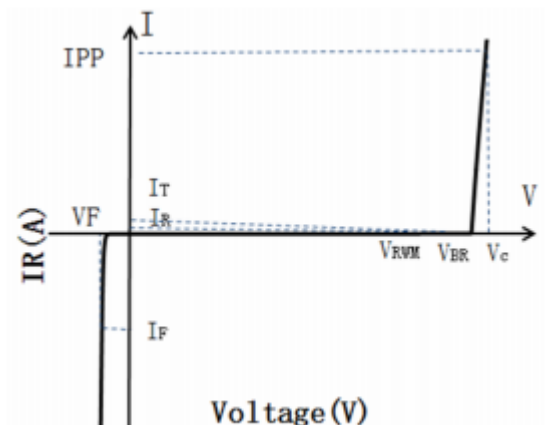
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	2000	W
Peak Pulse Current (8/20 μs)	IPP	60	A
ESD per IEC 61000-4-2 (Air)	VESD	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	TJ	-55to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				15	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	16.5			V
Reverse Leakage Current	I_R	$V_{RWM} = 15\text{V}$			1	μA
Clamping Voltage	V_C	$I_{PP} = 20\text{A}$ (8 x 20 μs pulse)			20	V
Clamping Voltage	V_C	$I_{PP} = 60\text{A}$ (8 x 20 μs pulse)			33	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$			450	pF

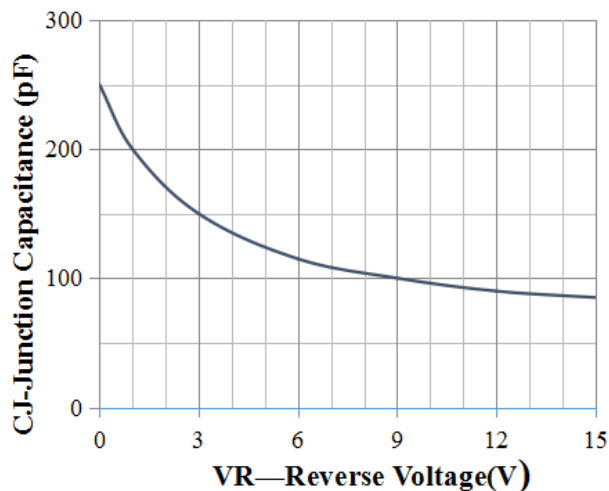
Portion Electronics Parameter

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

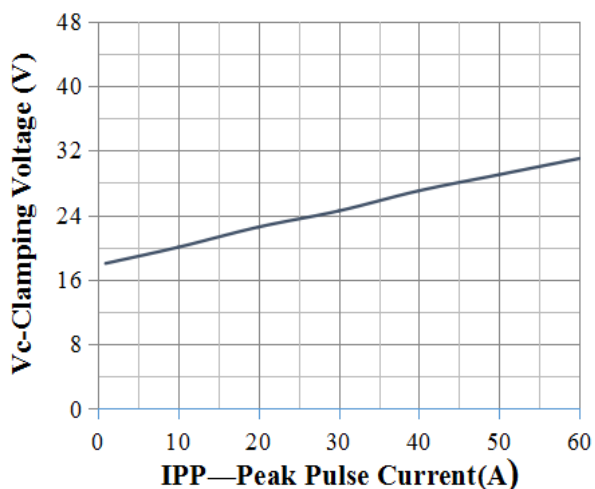




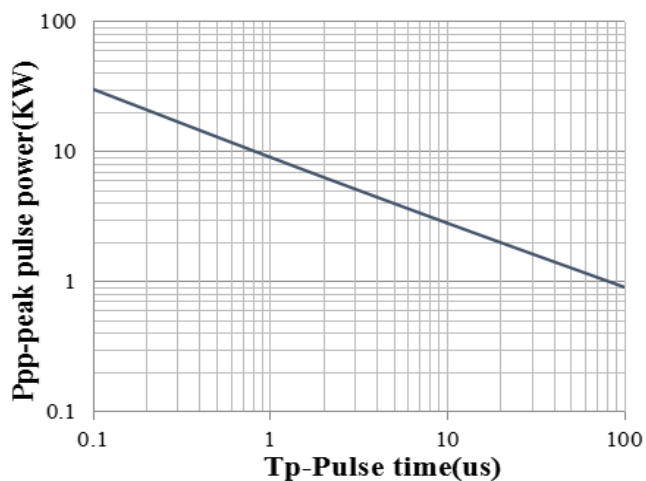
Typical Performance Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise Specified)



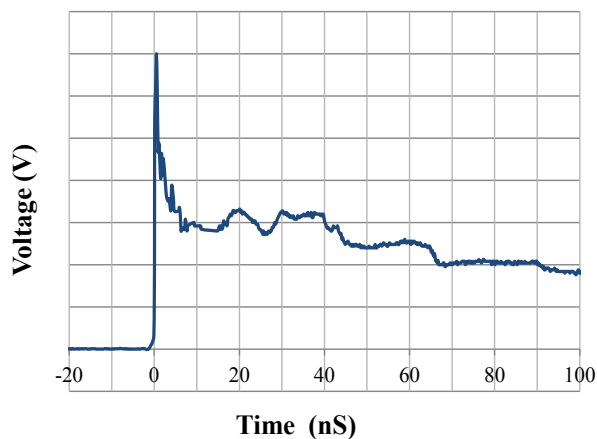
Junction Capacitance vs. Reverse Voltage



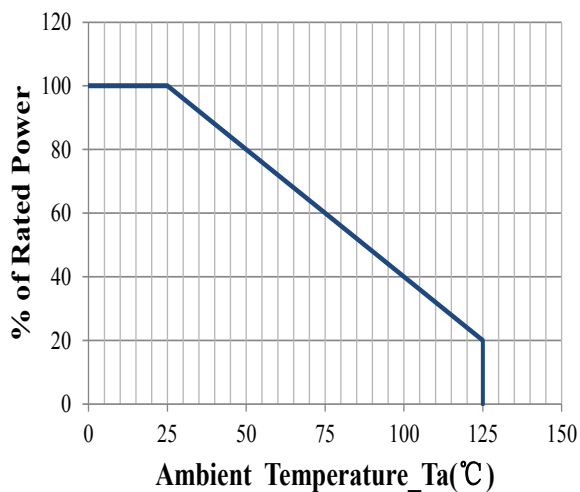
Clamping Voltage vs. Peak Pulse Current



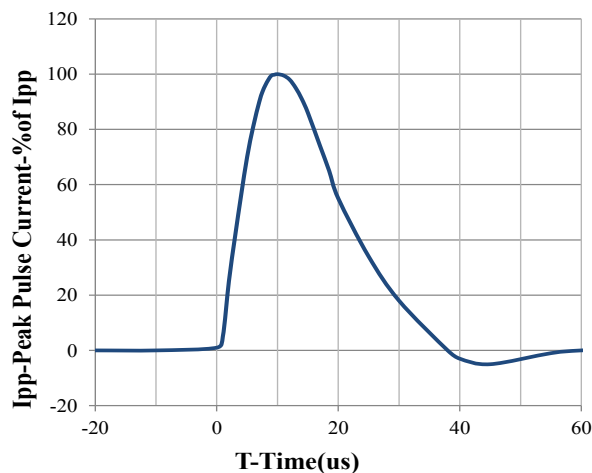
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform



Power Derating Curve

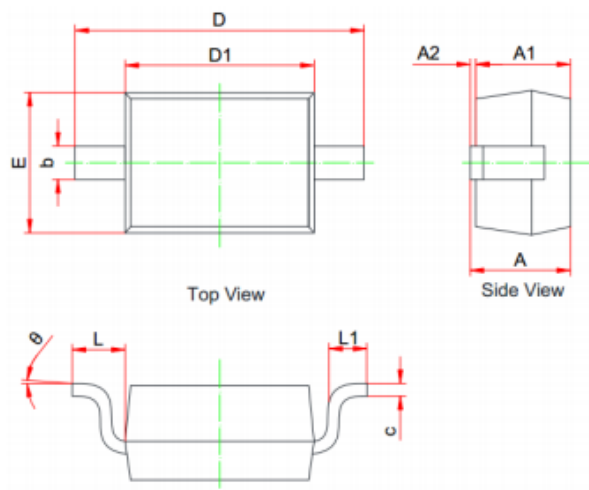


8 X 20us Pulse Waveform



JLS15UGS3-2

SOD-323 Package Outline Drawing (Dimensions in millimeters)



SYM	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



Unit: mm

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