



JLS07UGS5-2

1-Line Uni-directional TVS Diode

Jialan-Microelectronics

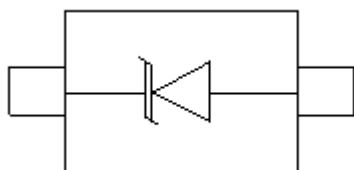
Description

The JLS07UGS5-2 is an uni-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 line. The JLS07UGS5-2 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-523 lead-free package. The small size and high ESD surge protection make JLS07UGS5-2 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Features

- * Protects one data or power line
- * Ultra low leakage: nA level
- * Operating voltage: 7V
- * Low clamping voltage
- * 2-pin leadless package
- * 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) 16A (8/20 μs)
- * RoHS Compliant
- * Package: SOD-523

Circuit Diagram



Circuit Diagram

Applications

- * Cellular Handsets and Accessories
- * Personal Digital Assistants
- * Notebooks and Handhelds
- * Portable Instrumentation
- * Digital Cameras
- * Peripherals
- * Audio Players
- * Keypads, Side Keys, LCD Displays

Marking Diagram



Transparent top view

7M: Device Marking Code

Ordering Information

Part Number	Packaging	Reel Size
JLS07UGS5-2	3000/Tape & Reel	7 inch



JLS07UGS5-2

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

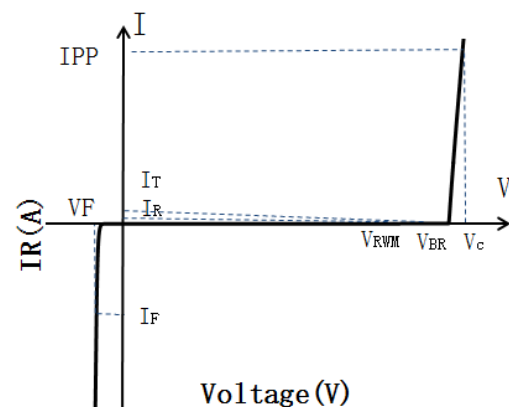
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	260	W
Peak Pulse Current (8/20 μs)	IPP	16	A
ESD per IEC 61000-4-2 (Air)	VESD	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	TJ	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				7.0	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	8.0	8.5	9.5	V
Reverse Leakage Current	I_R	$V_{RWM} = 7.0\text{V}$			0.5	μA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$ (8 x 20 μs pulse)			10	V
Clamping Voltage	V_C	$I_{PP} = 16\text{A}$ (8 x 20 μs pulse)			16	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$		160	200	pF

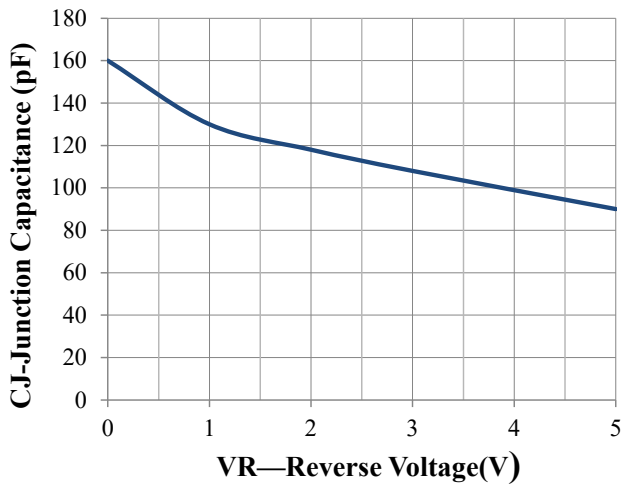
Portion Electronics Parameter

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

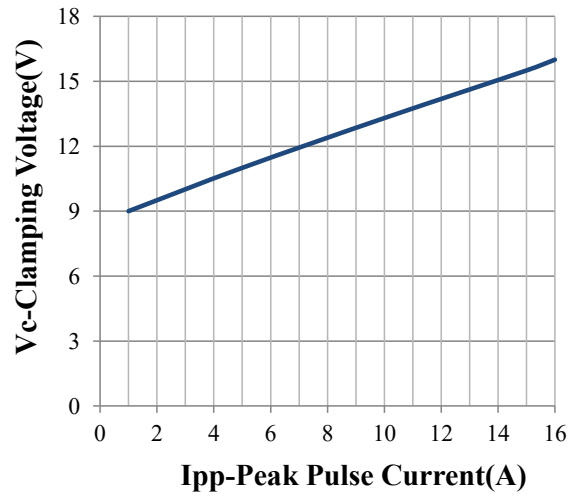




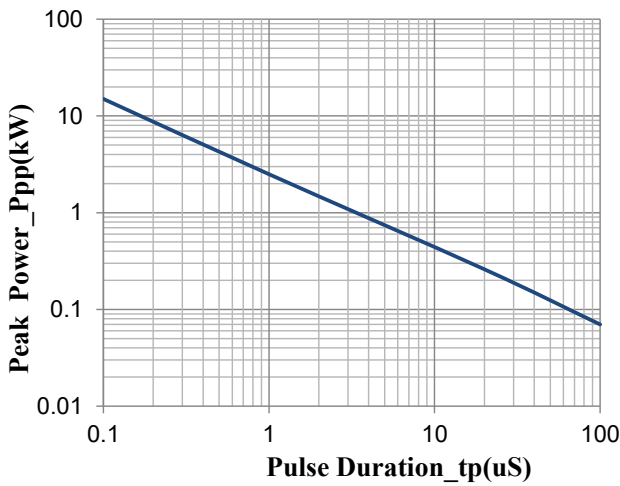
Typical Performance Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise Specified)



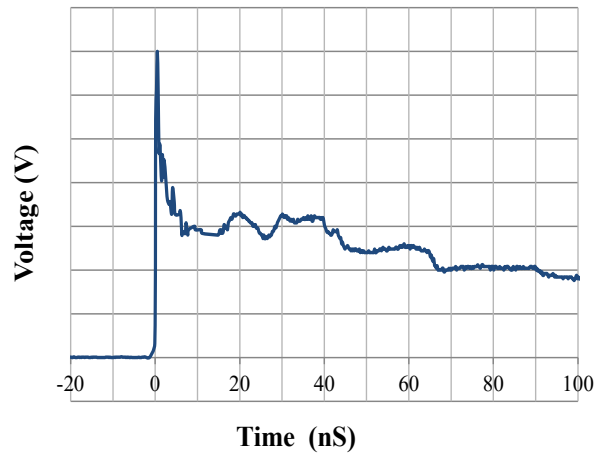
Junction Capacitance vs. Reverse Voltage



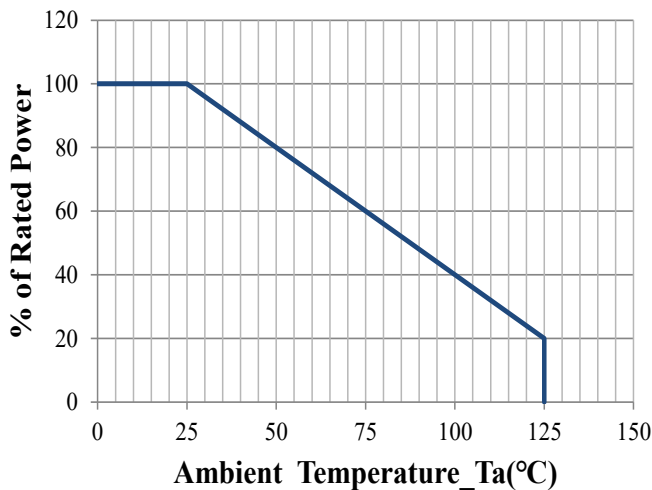
Clamping Voltage vs. Peak Pulse Current



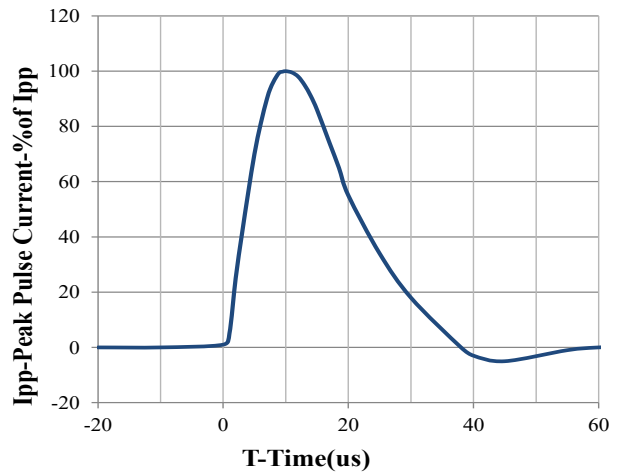
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform



Power Derating Curve

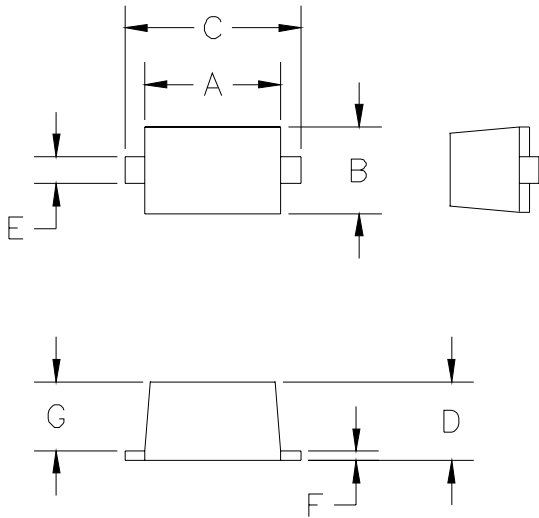


8 X 20us Pulse Waveform



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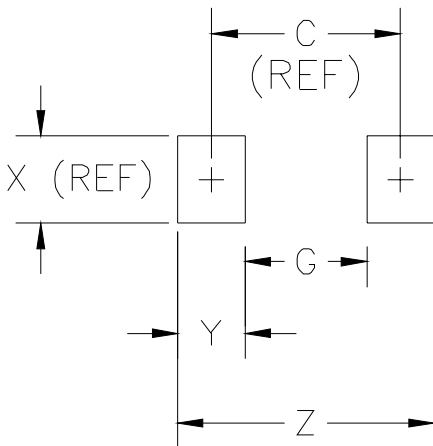
SOD-523 Package Outline Drawing



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

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