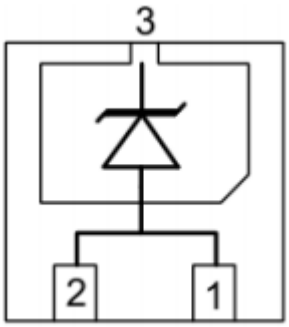
Description

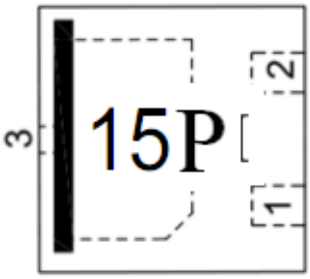
The JLS15UGD5-3 is a 15V Uni-directional TVS diode, utiliz-ing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The JLS15UGD5-3 complies with the IEC 61000-4-2 (ESD) standard with ±30 kV air and ±30kV contact discharge. It is assembled into an ultra-small lead-free DFN2020-3 package. The small size and high ESD surge protection make JLS15UGD5-3 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

15P:Device Marking Code

Features

* 5900W peak pulse power (8/20μs)
* Low leakage:nA level
* Operating voltage: 15V
* Ultra 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) 175A (8/20μs)
* RoHS Compliant
* Package: DFN2020-3

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
JLS15UGD5-3	3000/Tape & Reel	7 inch

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

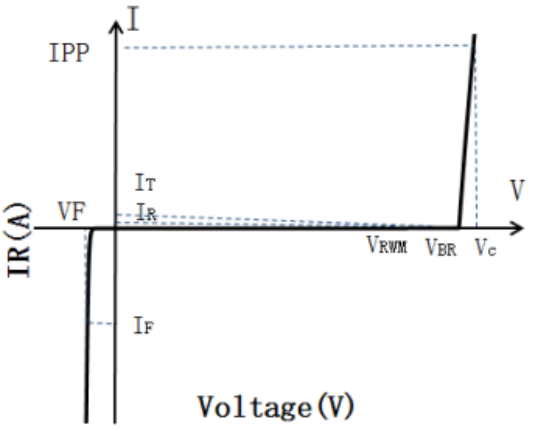
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	5900	W
Peak Pulse Current (8/20μs)	IPP	175	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	VESD	±30 ±30	kV
Operating Temperature Range	TJ	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

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

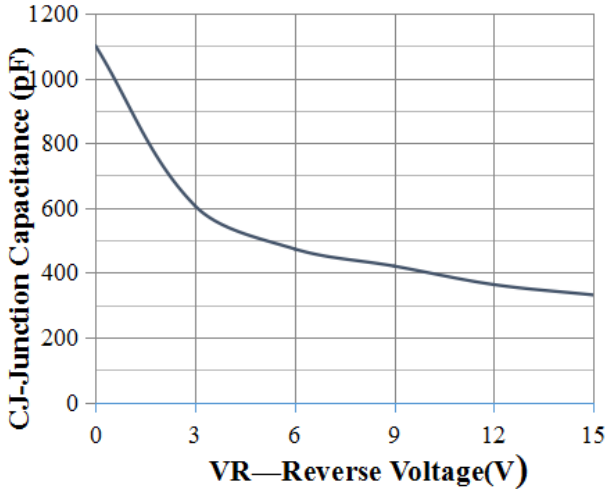
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				15.0	V
Breakdown Voltage	V_{BR}	I_T = 1mA	16		19	V
Reverse Leakage Current	I_R	V_{RWM} = 15V			20	uA
Clamping Voltage	V_C	I_{PP} = 100A (8 x 20μs pulse)			27	V
Clamping Voltage	V_C	I_{PP} = 175A (8 x 20μs pulse)			34	V
Junction Capacitance	C_J	VR = 0V, f = 1MHz		1100		pF

Portion Electronics Parameter

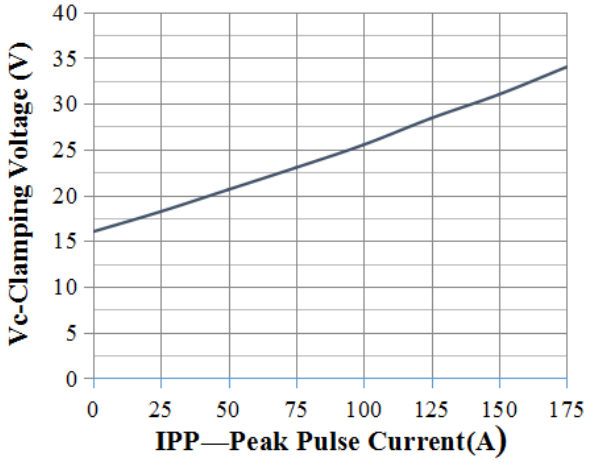
Symbol	Parameter
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
Vc	Clamping Voltage @Ic



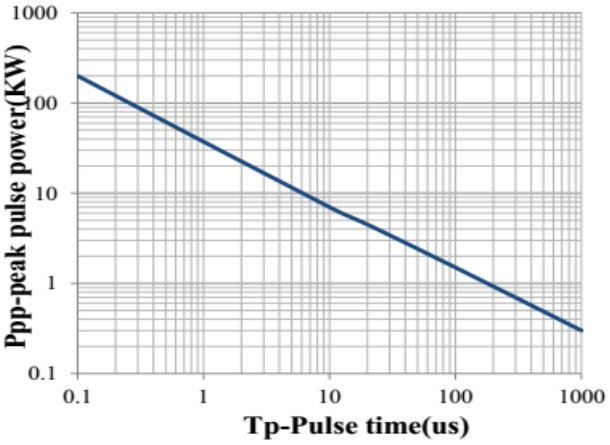
Typical Performance Characteristics (T_A=25°C unless otherwise Specified)



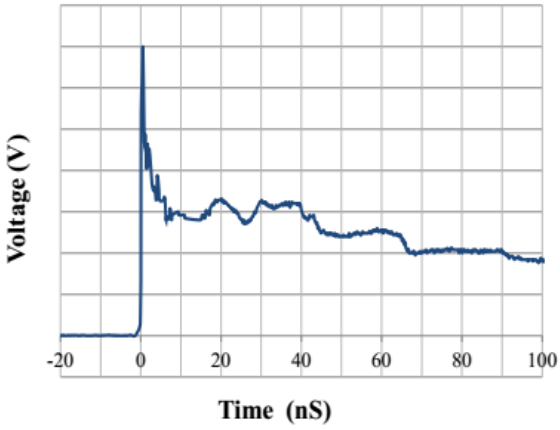
Junction Capacitance vs. Reverse Voltage



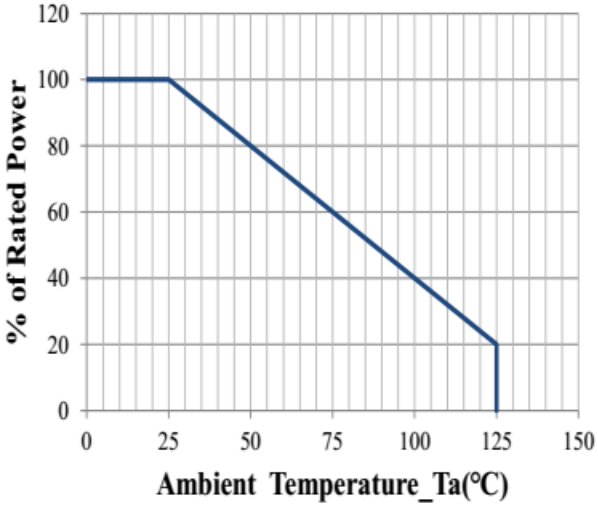
Clamping Voltage vs. Peak Pulse Current



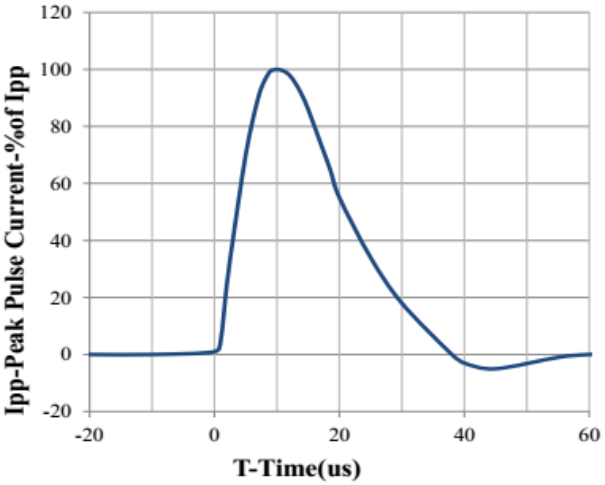
Peak Pulse Power vs. Pulse Time



IEC61000−4−2 Pulse Waveform

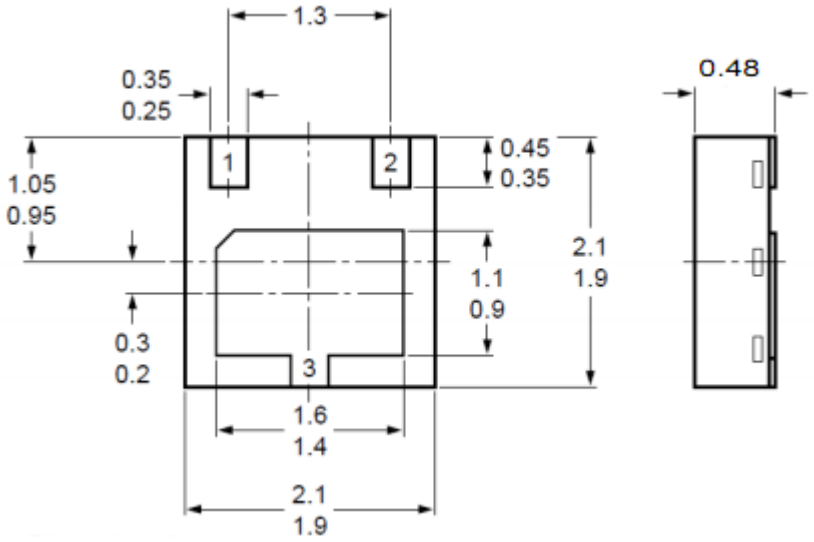


Power Derating Curve

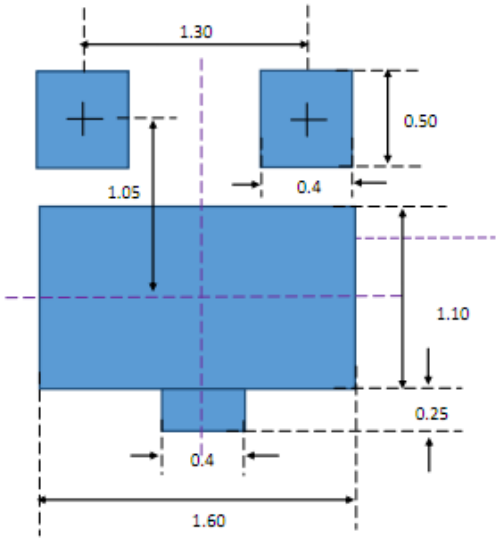


8 X 20us Pulse Waveform

DFN2020-3 Package Outline Drawing (Dimensions in millimeters)



Suggested Land Pattern



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