

JS24U1GS10-2

1-Line Uni-directional High Power TVS Diode



Description

The JS24U1GS10-2 is an Uni-directional TVS diode, utilizing leading monolithic silicon technology to provide fast re-sponse time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power lines. The JS24U1GS10-2 complies with the IEC 61000-4-2 (ESD) standard with $\pm 30\text{kV}$ air and $\pm 30\text{V}$ contact discharge. It is assembled into a SOD-123FL lead-free package. The small size and high ESD/surge protection make JS24U1GS10-2 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

24A:Device Marking Code

Features

- * 7000W peak pulse power (8/20 μs)
- * Low leakage:nA level
- * Operating voltage: 24V
- * 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) 220A (8/20 μs)
- * RoHS Compliant
- * Package: SOD-123FL

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
JS24U1GS10-2	3000/Tape & Reel	7 inch

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

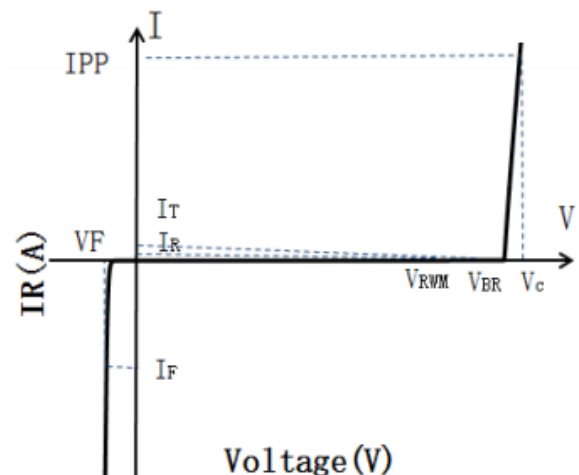
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	7000	W
Peak Pulse Current (8/20 μs)	IPP	220	A
ESD per IEC 61000-4-2 (Air)	VESD	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	TJ	-55to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

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

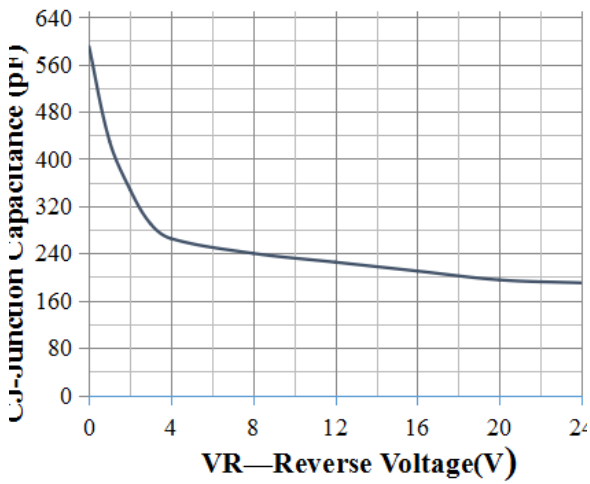
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				24	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	25.0			V
Reverse Leakage Current	I_R	$V_{RWM} = 24\text{V}$			0.02	μA
Clamping Voltage	V_C	$I_{PP} = 100\text{A}$ (8 x 20 μs pulse)			28.5	V
Clamping Voltage	V_C	$I_{PP} = 220\text{A}$ (8 x 20 μs pulse)			33	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$			590	pF

Portion Electronics Parameter

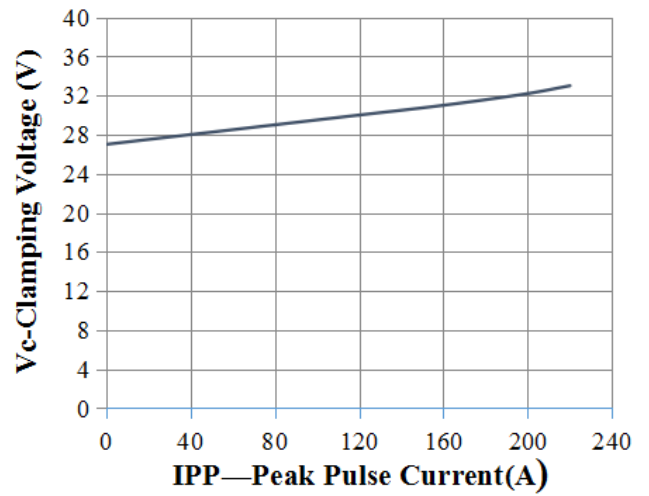
Symbol	Parameter
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_C



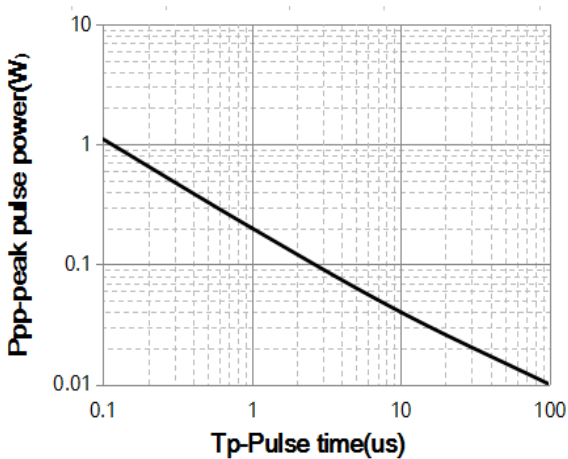
Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)



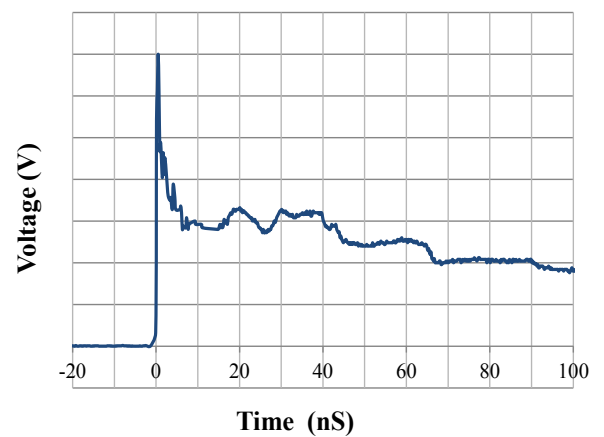
Junction Capacitance vs. Reverse Voltage



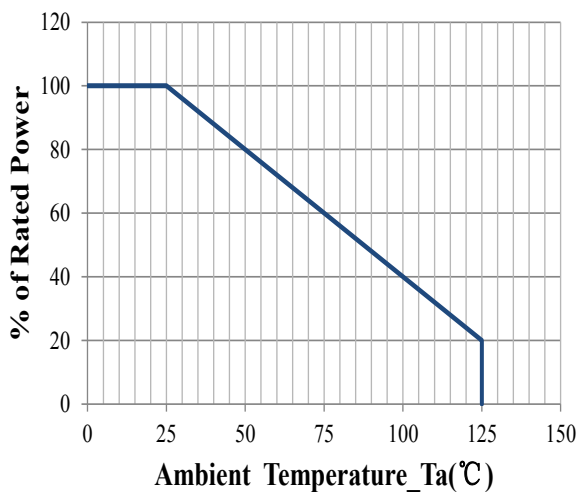
Clamping Voltage vs. Peak Pulse Current



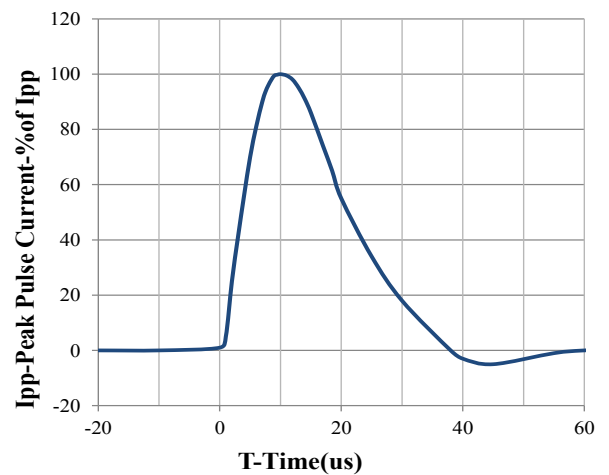
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform

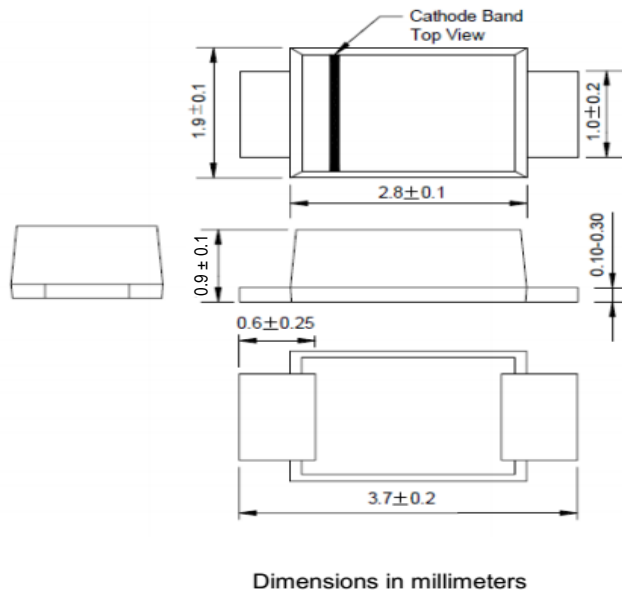


Power Derating Curve

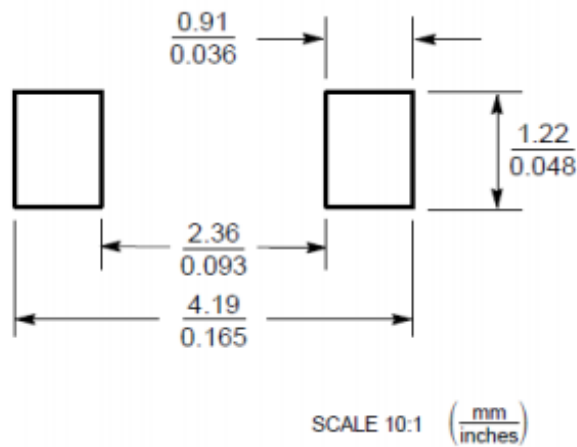


8 X 20us Pulse Waveform

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



Suggested Land Pattern



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