Description

The AU0511D9 is a 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 line. The AU0511D9 complies with the IEC 61000-4-2 (ESD) with ±25kV air and ±22kV contact discharge. It is assembled into an ultra-small 1.0x0.6x0.4mm lead-free SOD-923 package. The small size and high ESD surge protection make AU0511D9 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Features

- Ultra small package: 1.0x0.6x0.4mm
- Protects one data or power line
- Ultra low leakage: nA level
- Low operating voltage: 5V
- Low clamping voltage
- 2-pin ultra-small SOD-923 package
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±25kV
    - Contact discharge: ±22kV
  - IEC61000-4-5 (Lightning) 3.5A (8/20μs)
- RoHS Compliant

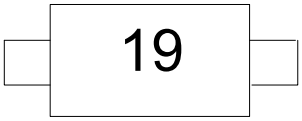
Mechanical Characteristics

- Package: SOD-923
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

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

Marking Information

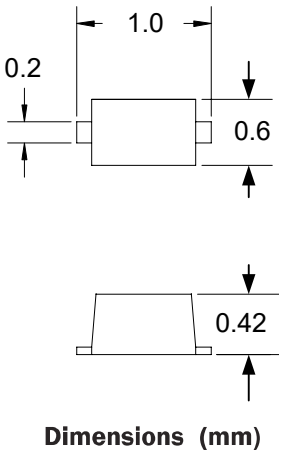


19 = Device Marking Code
Bar denotes Cathode

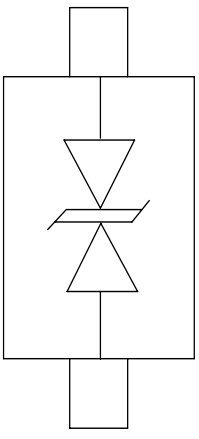
Ordering Information

Part Number	Packaging	Reel Size
AU0511D9	8000/Tape & Reel	7 inch

Dimensions and Pin Configuration



Package Dimensions



Circuit and Pin Schematic

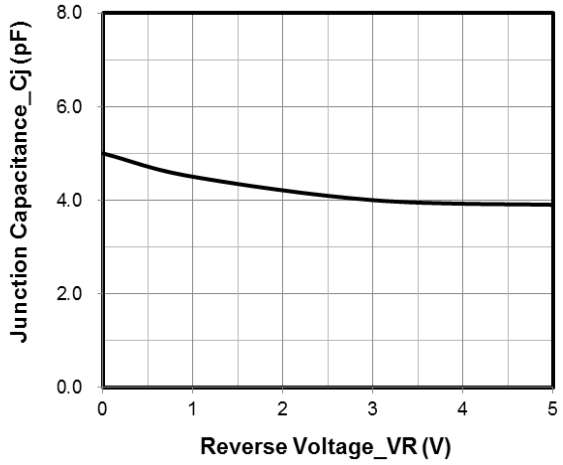
Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	40	W
Peak Pulse Current (8/20μs)	Ipp	3.5	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±25 ±22	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

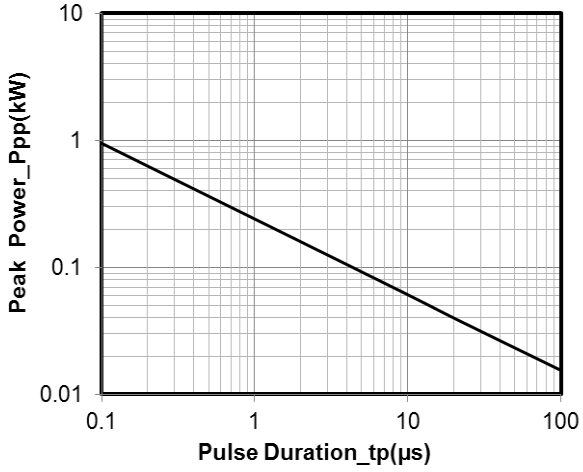
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			5	V	
Breakdown Voltage	V_{BR}	6			V	I_T = 1mA
Reverse Leakage Current	I_R			0.2	μA	V_{RWM} = 5V
Clamping Voltage	V_C			8	V	I_{PP} = 1A (8 x 20μs pulse)
Clamping Voltage	V_C			12	V	I_{PP} = 3.5A (8 x 20μs pulse)
Junction Capacitance	C_J		5		pF	VR = 0V, f = 1MHz

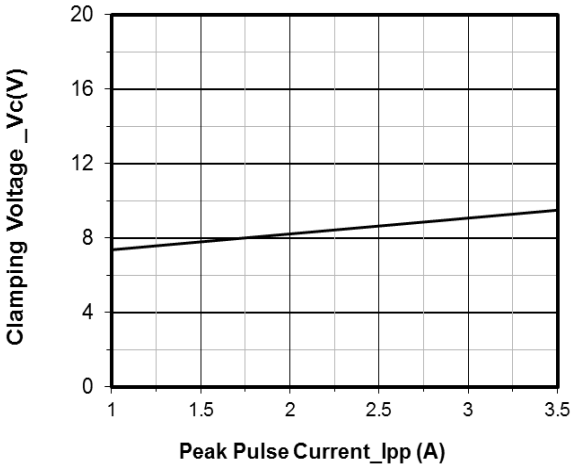
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



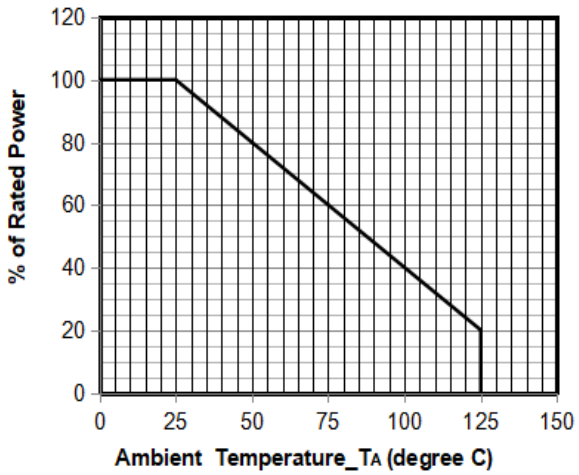
Junction Capacitance vs. Reverse Voltage



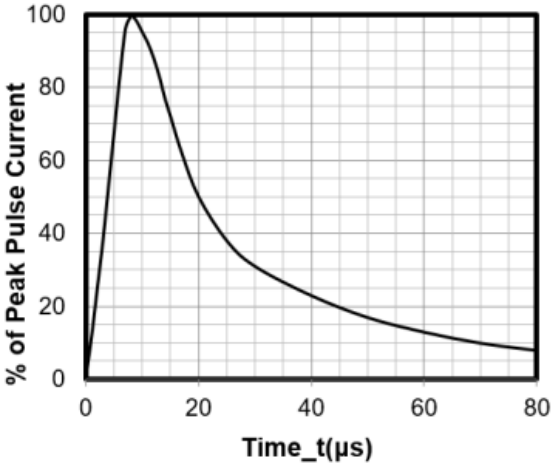
Peak Pulse Power vs. Pulse Time



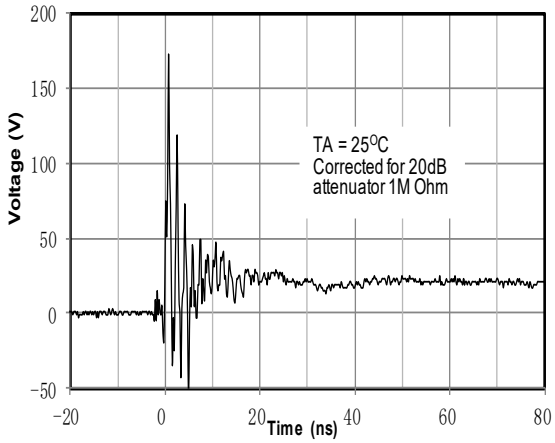
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



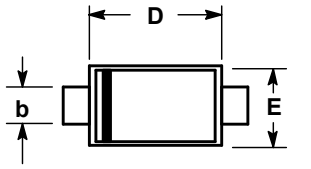
8 X 20μs Pulse Waveform



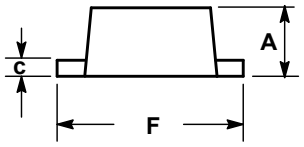
ESD Clamping Voltage

8 kV Contact per IEC61000−4−2

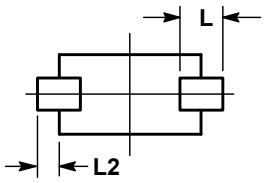
SOD-923 Package Outline Drawing



TOP VIEW



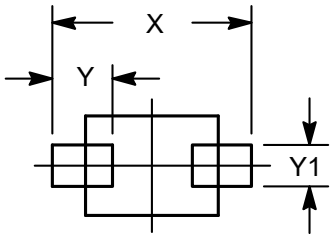
SIDE VIEW



BOTTOM VIEW

SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.39	0.42	0.45	0.016	0.017	0.018
b	0.15	0.20	0.25	0.006	0.008	0.010
c	0.07	0.12	0.17	0.003	0.005	0.007
D	0.75	0.80	0.85	0.030	0.032	0.034
E	0.55	0.60	0.65	0.022	0.024	0.026
F	0.95	1.00	1.05	0.038	0.040	0.042
L	0.19 REF			0.007 REF		
L2	0.05	0.10	0.15	0.002	0.004	0.006

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	1.20	0.048
Y	0.36	0.014
Y1	0.25	0.010

Contact Information

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