Description

The AU1501D5 is an uni-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and ultra low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The AU1501D5 complies with the IEC 61000-4-2 (ESD) with ± 30kV air and ± 30kV contact discharge. It is assembled into an ultra-small SOD-523 lead-free package. The small size and high ESD surge protection make AU1501D5 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Features

- Protects one line
- Ultra low leakage: nA level
- Operating voltage: 15V
- Low clamping voltage
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±30kV
    - Contact discharge: ±30kV
  - IEC61000-4-5 (Lightning) 11A (8/20μs)
- RoHS Compliant

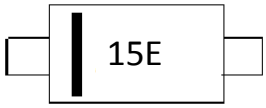
Mechanical Characteristics

- Package: SOD-523
- Case Material: “Green” Molding Compound.
- Lead Finish: Matte Tin
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks, Desktops, Servers
- Portable Instrumentation
- Printers
- Analog Inputs
- Video equipment
- Communication systems
- Laser Diode Protection

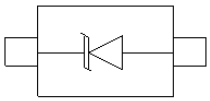
Marking Information



15E = Device Marking Code

Bar denotes cathode

Dimensions and Pin Configuration



SOD-523 (Top View)

Circuit and Pin Schematic

Ordering Information

Part Number	Packaging	Reel Size
AU1501D5	3000/Tape & Reel	7 inch

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

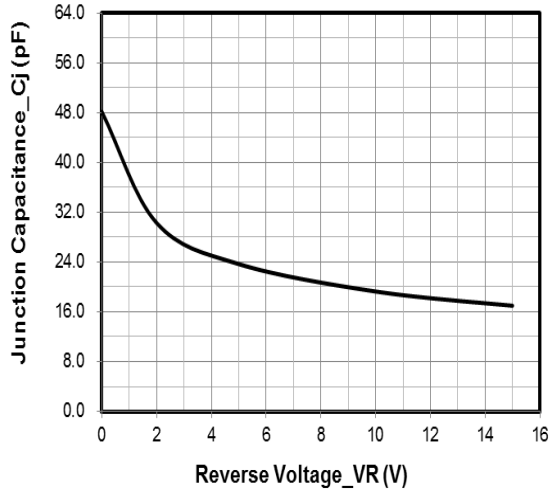
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	350	W
Peak Pulse Current (8/20μs)	Ipp	11	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±30 ±30	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

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

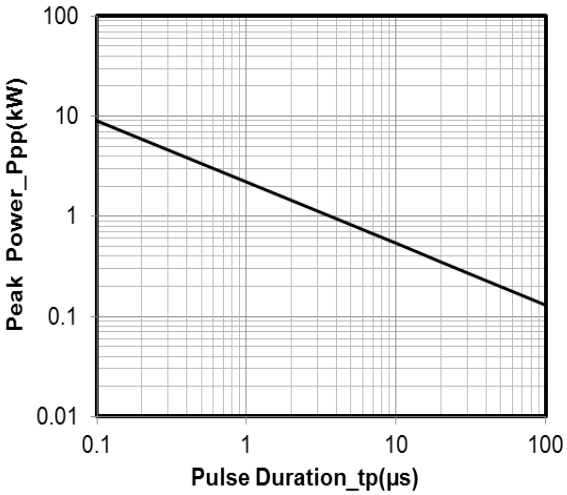
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			15	V	
Breakdown Voltage	V_{BR}	18			V	I_T = 1mA
Reverse Leakage Current	I_R			0.2	μA	V_{RWM} = 15V
Clamping Voltage	V_C			23	V	I_{PP} = 1A (8 x 20μs pulse)
Clamping Voltage	V_C			32	V	I_{PP} = 11A (8 x 20μs pulse)
Junction Capacitance	C_J			80	pF	VR = 0V, f = 1MHz

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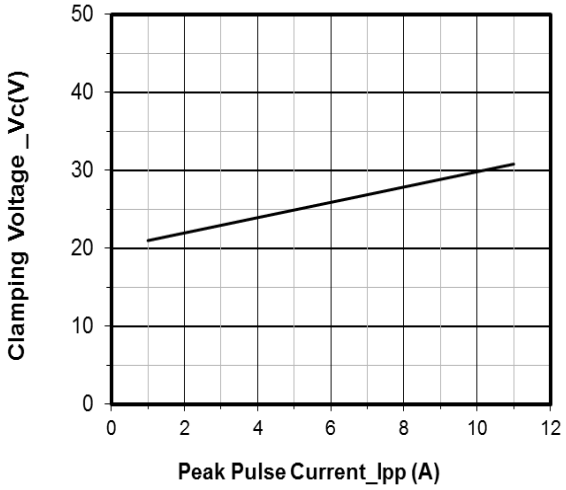
Typical Performance Characteristics (T_A=25°C unless otherwise Specified)



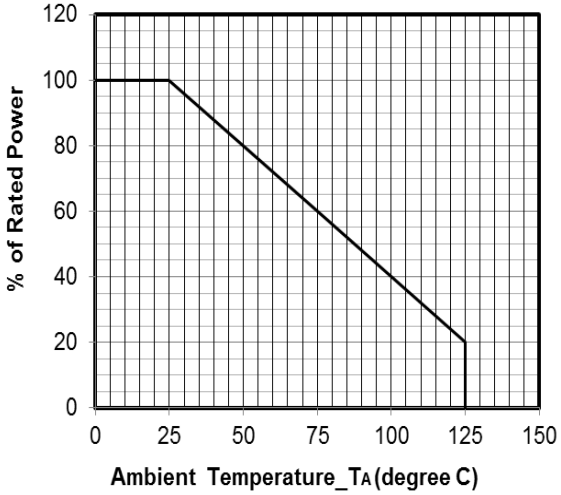
Junction Capacitance vs. Reverse Voltage



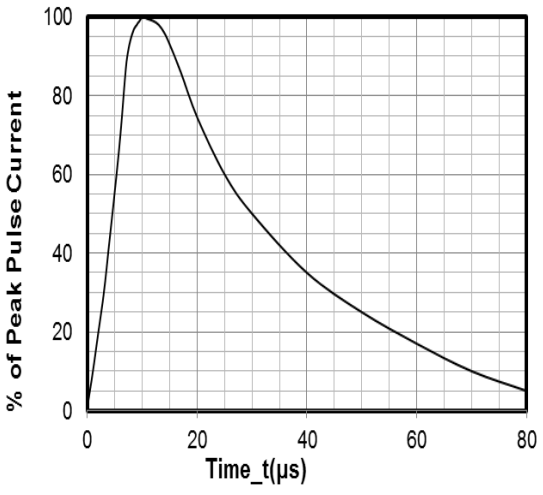
Peak Pulse Power vs. Pulse Time



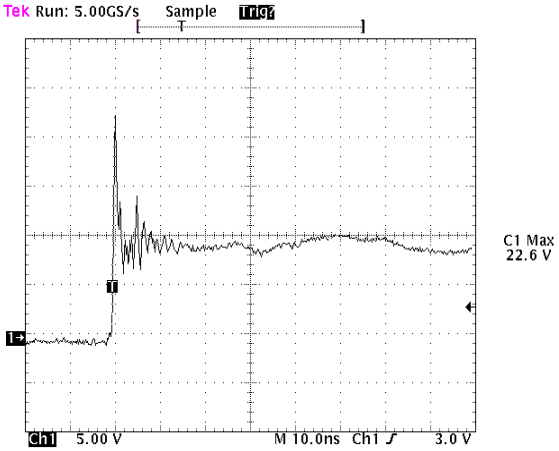
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20μs Pulse Waveform



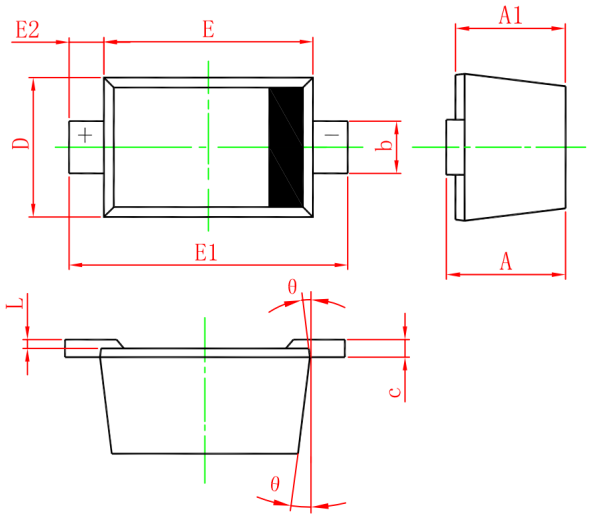
Note：Data is taken with a 10x attenuator

ESD Clamping Voltage

+8 kV Contact per IEC61000−4−2

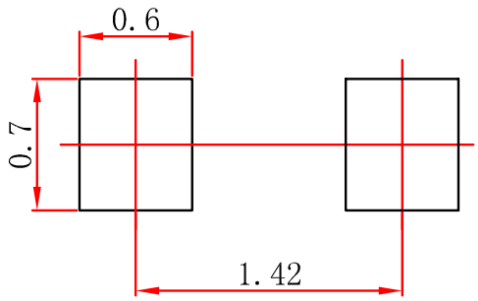
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SOD-523 Package Outline Drawing



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.51	- -	0.77	0.020	- -	0.031
A1	0.50	- -	0.70	0.020	- -	0.028
b	0.25	- -	0.35	0.010	- -	0.014
c	0.08	- -	0.15	0.003	- -	0.006
D	0.75	- -	0.85	0.030	- -	0.033
E	1.10	- -	1.30	0.043	- -	0.051
E1	1.50	- -	1.70	0.059		0.067
E2	0.20REF			0.008REF		
L	0.01	- -	0.07	0.001	- -	0.003
Θ	7° REF			7° REF		

Suggested Land Pattern



Unit: mm

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