

### Description

The AU3631D5 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 AU3631D5 complies with the IEC 61000-4-2 (ESD) with  $\pm 10\text{kV}$  air and  $\pm 10\text{kV}$  contact discharge. It is assembled into an ultra-small SOD-523 lead-free package. The small size and high ESD surge protection make AU3631D5 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: 36V
- Low clamping voltage
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge:  $\pm 10\text{kV}$
    - Contact discharge:  $\pm 10\text{kV}$
  - IEC61000-4-5 (Lightning) 2A (8/20 $\mu\text{s}$ )
- RoHS Compliant

### Mechanical Characteristics

- Package: SOD-523
- Case Material: “Green” Molding Compound.
- Lead Finish: Matte Tin
- Terminal Connections: See Diagram Below
- Marking Information: See Below

### Applications

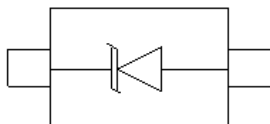
- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks, Desktops, Servers
- Portable Instrumentation
- Digital Cameras
- Analog Inputs
- Audio Players
- Keypads, Side Keys, LCD Displays
- Laser Diode Protection

### Marking Information



36D = 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
AU3631D5	3000/Tape & Reel	7 inch

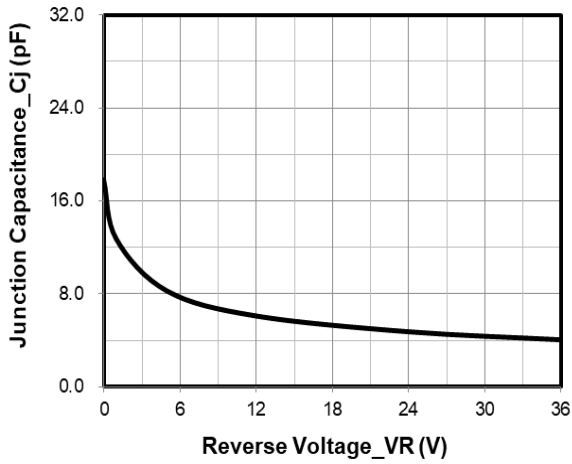
**Absolute Maximum Ratings ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)**

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	Ppk	150	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	Ipp	2	A
ESD per IEC 61000-4-2 (Air)	VESD	$\pm 10$	kV
ESD per IEC 61000-4-2 (Contact)		$\pm 10$	
Operating Temperature Range	TJ	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

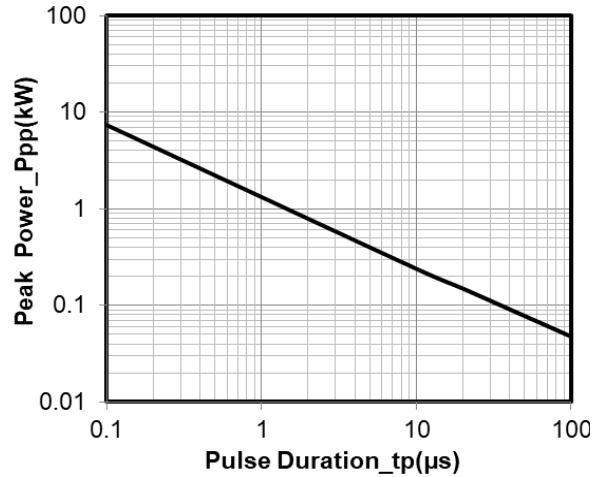
**Electrical Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)**

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			36	V	
Breakdown Voltage	VBR	38			V	IT = 1mA
Reverse Leakage Current	IR			0.2	$\mu\text{A}$	VRWM = 36V
Clamping Voltage	VC			60	V	I <sub>PP</sub> = 1A (8 x 20 $\mu\text{s}$ pulse)
Clamping Voltage	VC			75	V	I <sub>PP</sub> = 2A (8 x 20 $\mu\text{s}$ pulse)
Junction Capacitance	CJ			20	pF	VR = 0V, f = 1MHz

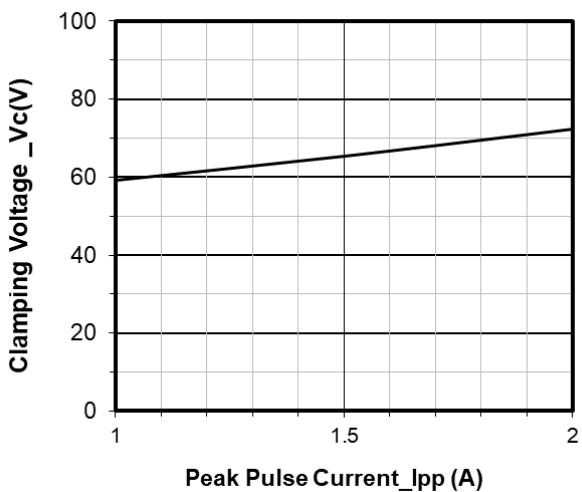
**Typical Performance Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise Specified)**



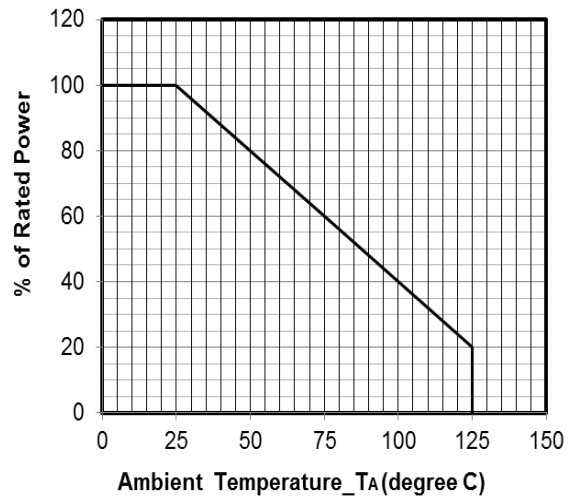
**Junction Capacitance vs. Reverse Voltage**



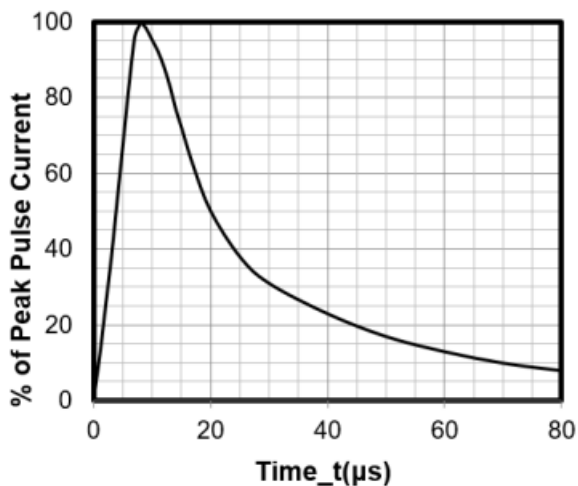
**Peak Pulse Power vs. Pulse Time**



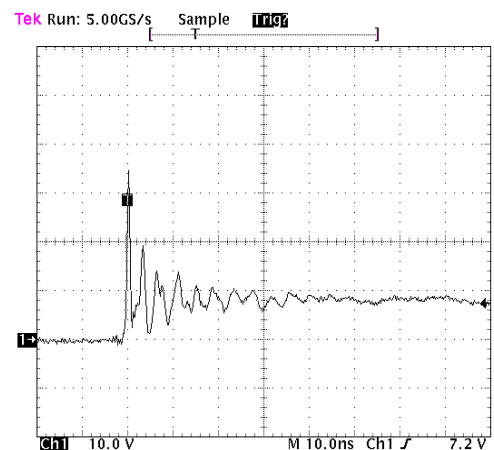
**Clamping Voltage vs. Peak Pulse Current**



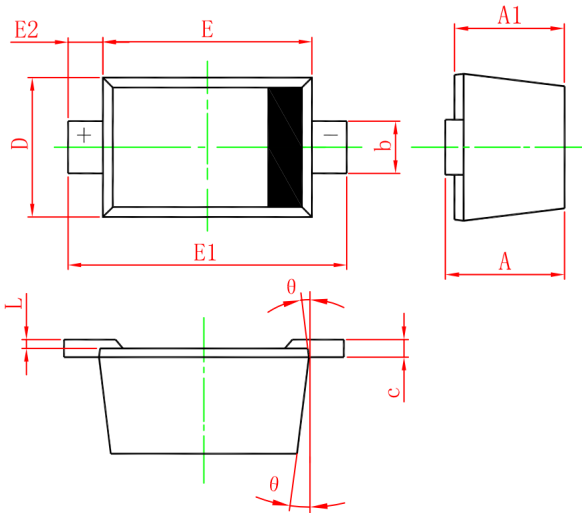
**Power Derating Curve**



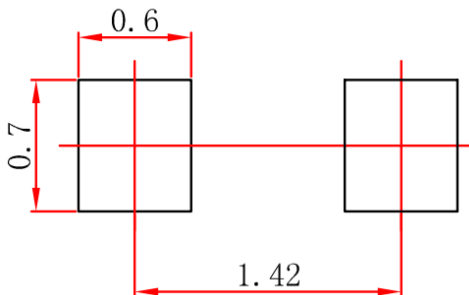
**8 X 20 $\mu\text{s}$  Pulse Waveform**



Note: Data is taken with a 10x attenuator  
ESD Clamping Voltage  
+8 kV Contact per IEC61000-4-2

**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

**Contact Information**

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