

### Description

The AU1771D3 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 AU1771D3 complies with the IEC 61000-4-2 (ESD) with  $\pm 30\text{kV}$  air and  $\pm 30\text{kV}$  contact discharge. It is assembled into an ultra-small SOD-323 lead-free package. The small size and high ESD surge protection make AU1771D3 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

### Features

- Protects one data line
- Ultra low leakage: nA level
- Operating voltage: 17V
- Ultra low clamping voltage
- 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) 50A (8/20 $\mu\text{s}$ )
- RoHS Compliant

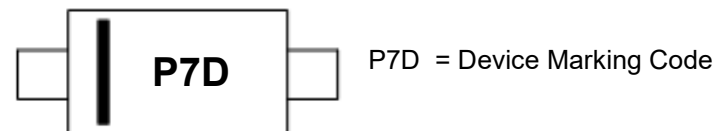
### Mechanical Characteristics

- Package: SOD-323
- Case Material: “Green” Molding Compound.
- Terminal Connections: See Diagram Below
- Marking Information: See Below

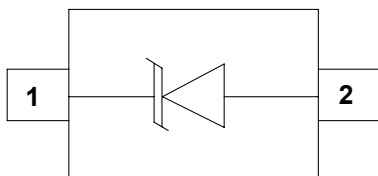
### Applications

- 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



### Equivalent Circuit and Pin Configuration



**SOD-323 (Top View)**

Circuit and Pin Schematic

### Ordering Information

Part Number	Packaging	Reel Size
AU1771D3	3000/Tape & Reel	7 inch

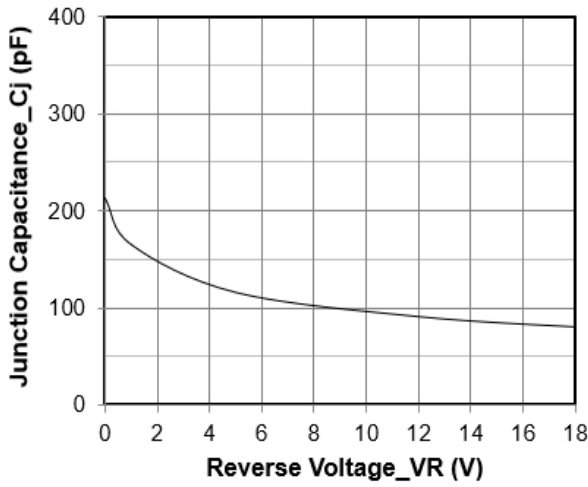
**Absolute Maximum Ratings ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)**

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	Ppk	2000	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	Ipp	50	A
ESD per IEC 61000-4-2 (Air)	VESD	$\pm 30$	kV
ESD per IEC 61000-4-2 (Contact)		$\pm 30$	
Operating Temperature Range	TJ	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

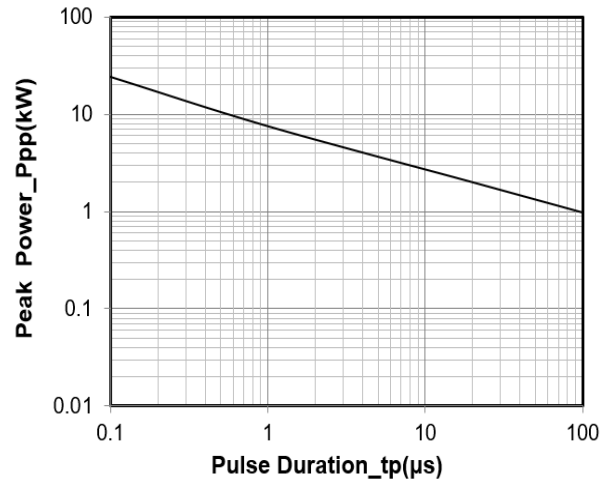
**Electrical Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)**

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			17	V	
Breakdown Voltage	VBR	19.8		21.9	V	IT = 1mA
Reverse Leakage Current	IR			0.5	$\mu\text{A}$	VRWM = 17V
Clamping Voltage	VC			23	V	I <sub>PP</sub> = 1A (8 x 20 $\mu\text{s}$ pulse)
Clamping Voltage	VC			40	V	I <sub>PP</sub> = 50A (8 x 20 $\mu\text{s}$ pulse)
Junction Capacitance	CJ		210		pF	VR = 0V, f = 1MHz

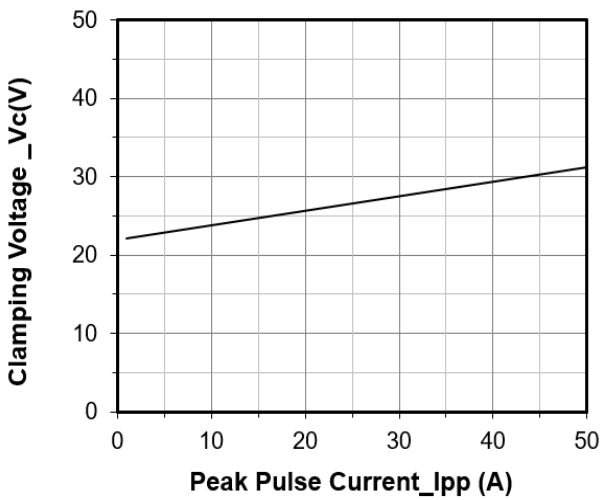
**Typical Performance Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise Specified)**



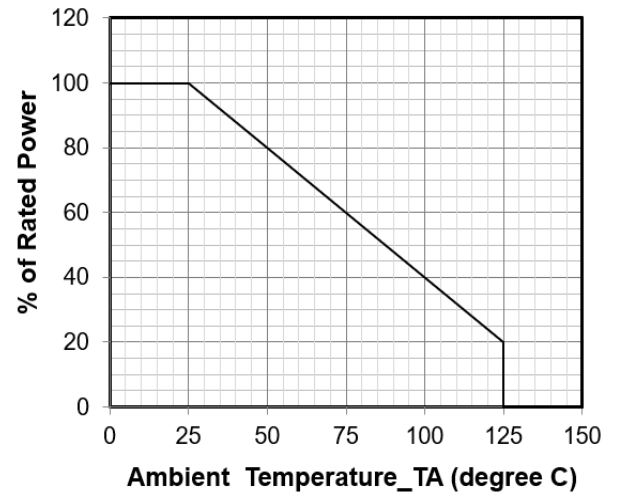
**Junction Capacitance vs. Reverse Voltage**



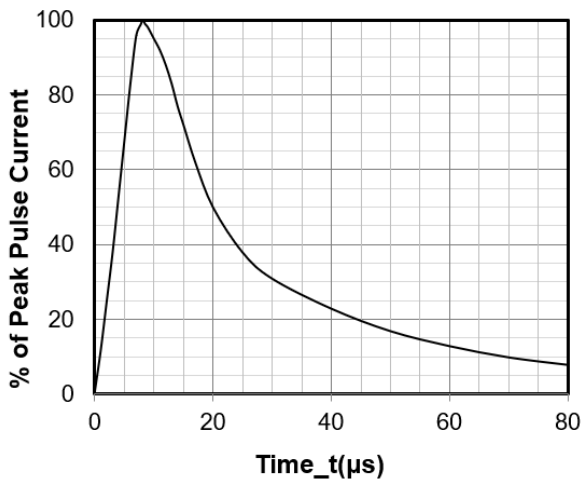
**Peak Pulse Power vs. Pulse Time**



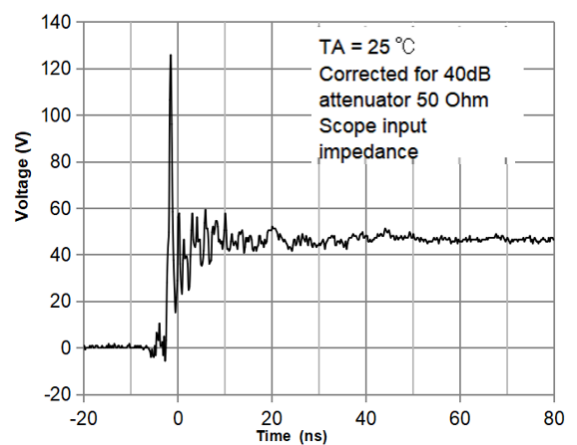
**Clamping Voltage vs. Peak Pulse Current ( $t_p = 8/20\mu\text{s}$ )**



**Power Derating Curve**

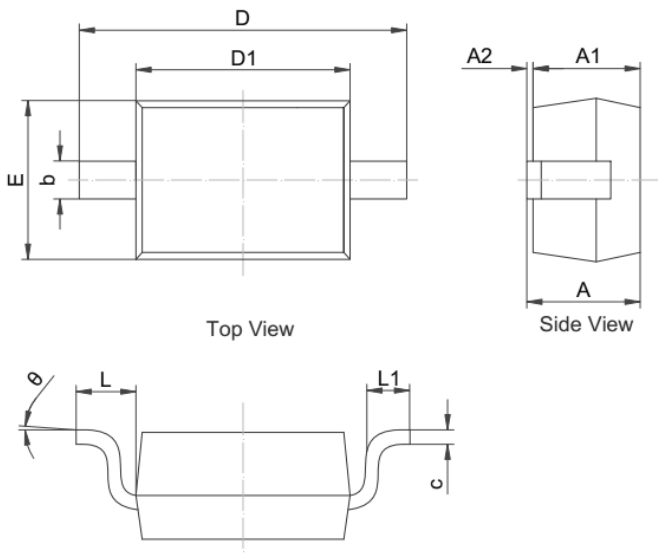


**8 X 20μs Pulse Waveform**



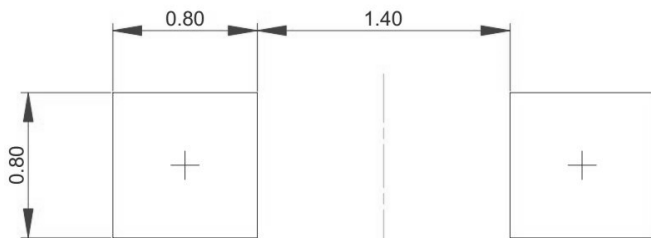
**ESD Clamping Voltage**  
**8 kV Contact per IEC61000-4-2**

### SOD-323 Package Outline Drawing



SYM	MILLIMETERS		
	MIN	NOM	MAX
A	0.800	--	1.100
A1	0.800	--	0.900
A2	0.000	--	0.100
b	0.250	--	0.400
c	0.080	--	0.177
D1	1.600	1.700	1.800
D	2.300	--	2.800
E	1.150	--	1.400
L	0.475REF		
L1	0.100	--	0.500
$\Theta$	0°	--	8°

### Suggested Land Pattern



**Unit: mm**

### Contact Information

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