

### Description

The AR0521D5 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 high-speed data lines. The AR0521D5 has an ultra-low capacitance with a typical value at 0.3pF, and complies with the IEC 61000-4-2 (ESD) with  $\pm 25$ kV air and  $\pm 22$ kV contact discharge. It is assembled into a SOD-523 lead-free package. The small size, ultra-low capacitance and high ESD surge protection make AR0521D5 an ideal choice to protect cell phone, digital visual interfaces and other high speed ports.

### Features

- Ultra low capacitance: 0.3pF typical
- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge:  $\pm 25$ kV
    - Contact discharge:  $\pm 22$ kV
  - IEC61000-4-5 (Lightning) 4A (8/20 $\mu$ s)
- RoHS Compliant

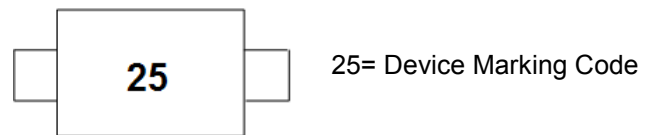
### Mechanical Characteristics

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

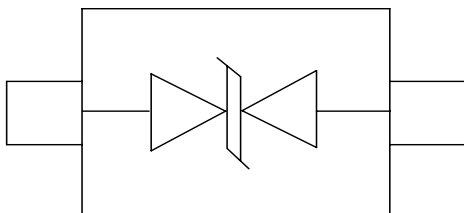
### Applications

- Cellular Handsets and Accessories
- Display Ports
- MDDI Ports
- USB Ports
- Digital Visual Interface (DVI)
- PCI Express and Serial SATA Ports

### Marking Information



### Dimensions and Pin Configuration



Circuit and Pin Schematic

### Ordering Information

Part Number	Packaging	Reel Size
AR0521D5	3000/Tape & Reel	7 inch

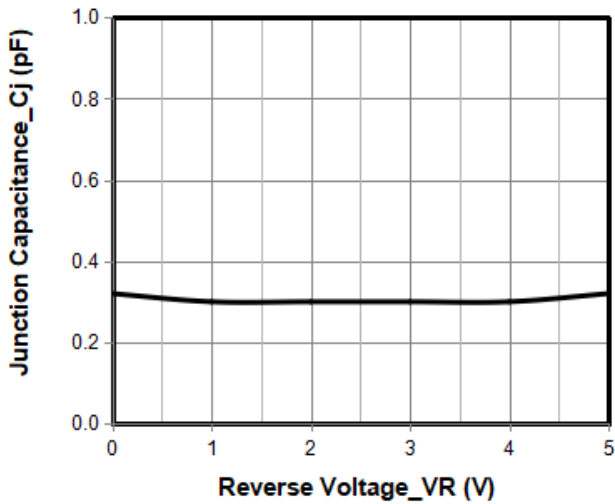
**Absolute Maximum Ratings ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)**

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	Ppk	100	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	I <sub>PP</sub>	4	A
ESD per IEC 61000-4-2 (Air)	V <sub>ESD</sub>	$\pm 25$	kV
ESD per IEC 61000-4-2 (Contact)		$\pm 22$	
Operating Temperature Range	T <sub>J</sub>	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	T <sub>stg</sub>	-55 to +150	$^{\circ}\text{C}$

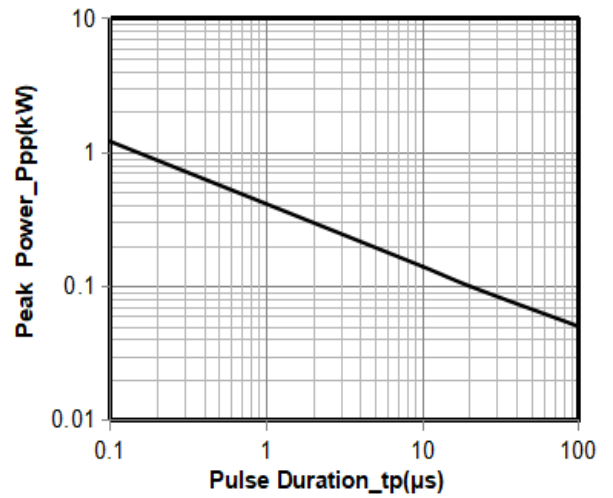
**Electrical Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)**

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V <sub>RWM</sub>			5	V	
Breakdown Voltage	V <sub>BR</sub>	6.5		9.5	V	I <sub>T</sub> = 1mA
Reverse Leakage Current	I <sub>R</sub>		0.02	0.2	$\mu\text{A}$	V <sub>RWM</sub> = 5V
Clamping Voltage	V <sub>C</sub>			12	V	I <sub>PP</sub> = 1A (8 x 20 $\mu\text{s}$ pulse)
Clamping Voltage	V <sub>C</sub>			25	V	I <sub>PP</sub> = 4A (8 x 20 $\mu\text{s}$ pulse)
Junction Capacitance	C <sub>J</sub>		0.3	0.5	pF	V <sub>R</sub> = 0V, f = 1MHz

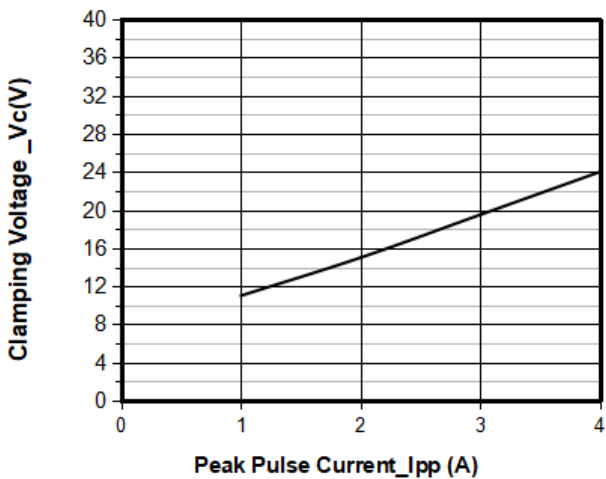
**Typical Performance Characteristics (TA=25°C unless otherwise Specified)**



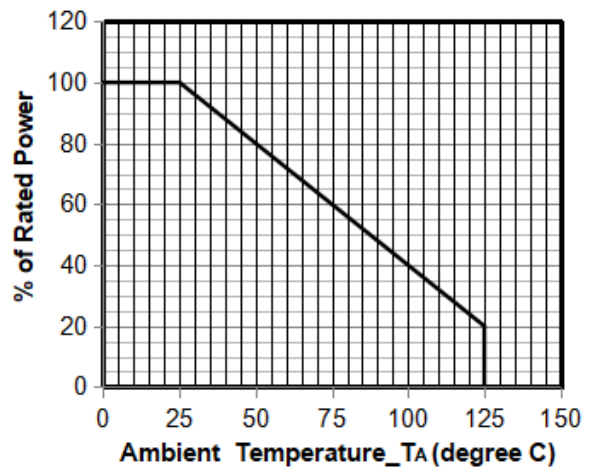
**Junction Capacitance vs. Reverse Voltage**



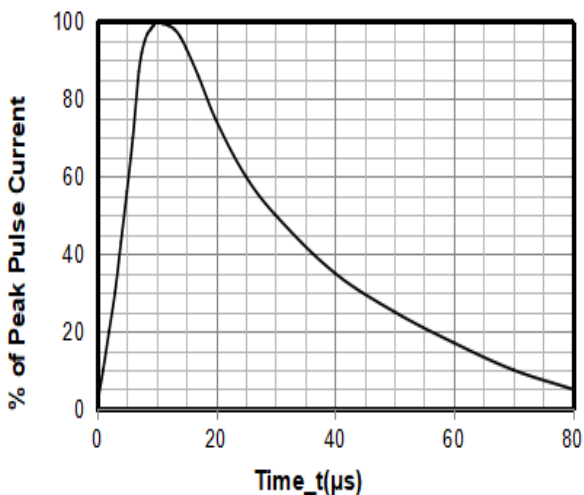
**Peak Pulse Power vs. Pulse Time**



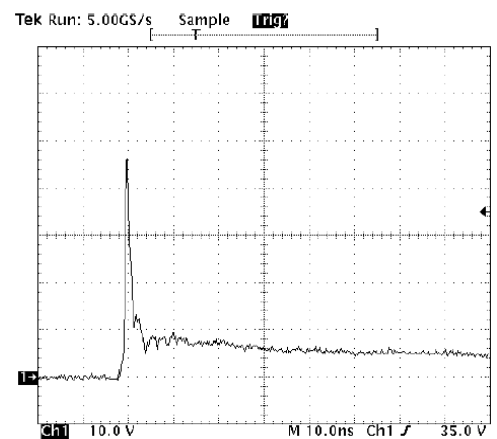
**Clamping Voltage vs. Peak Pulse Current**



**Power Derating Curve**



**8 X 20μs Pulse Waveform**

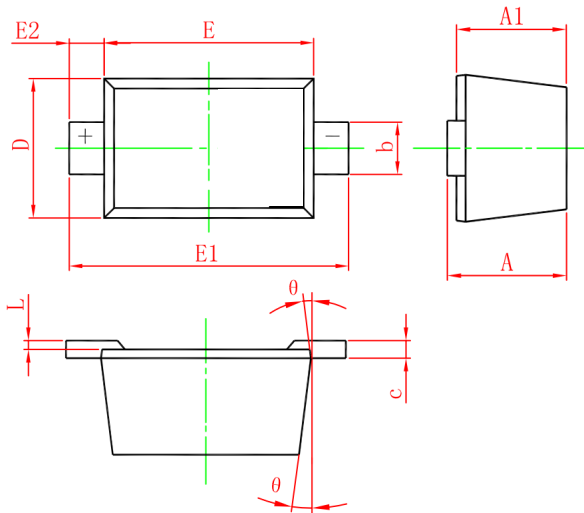


**Note: Data is taken with a 10x attenuator**

**ESD Clamping Voltage**

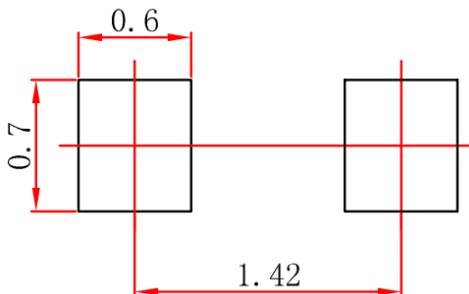
**8 kV Contact per IEC61000-4-2**

### 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

Applied Power Microelectronics Co., Ltd.

 Website: <http://www.appliedpowermicro.com>

 Email: [sales@appliedpowermicro.com](mailto:sales@appliedpowermicro.com)

Phone: +86 (0519) 8399 3606

单击下面可查看定价，库存，交付和生命周期等信息

[>>APPLIED POWER\(江苏应能\)](#)