

1.Description

The AR0521D5 is a bi-directional TVS diode, provide fast re-sponse 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 with $\pm 25\text{kV}$ air and $\pm 22\text{kV}$ contact discharge.

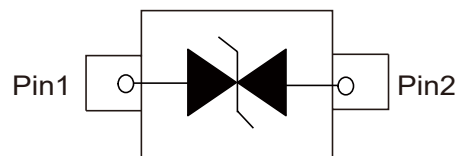
3.Features

- Ultra low capacitance: 0.3pF typical
- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage

2.Applications

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

4.Pinning information



SOD-523

- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 25\text{kV}$
 - Contact discharge: $\pm 22\text{kV}$
 - IEC61000-4-5 (Lightning) 4A (8/20 μs)



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

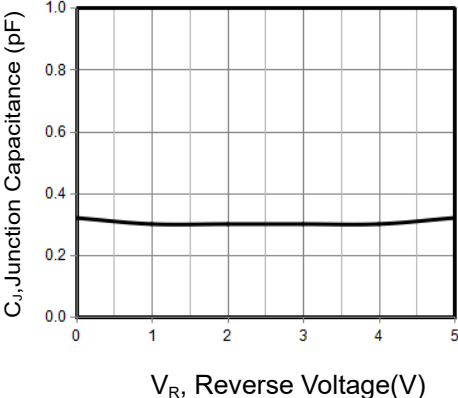
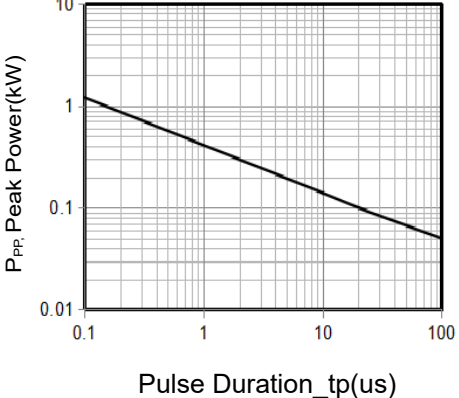
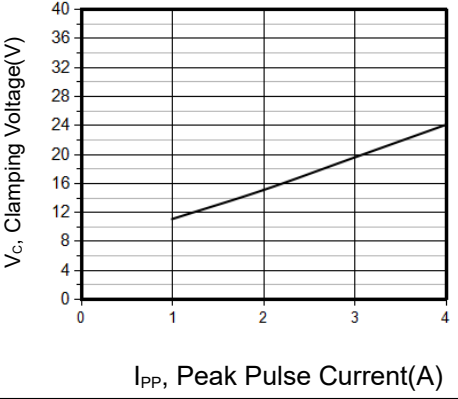
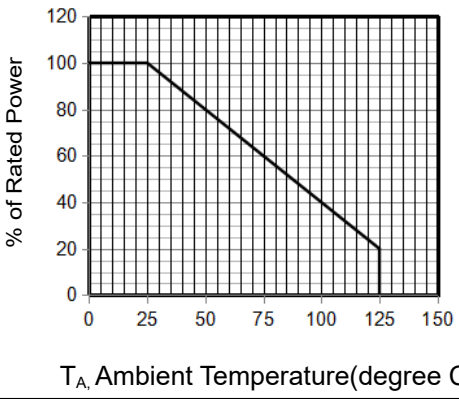
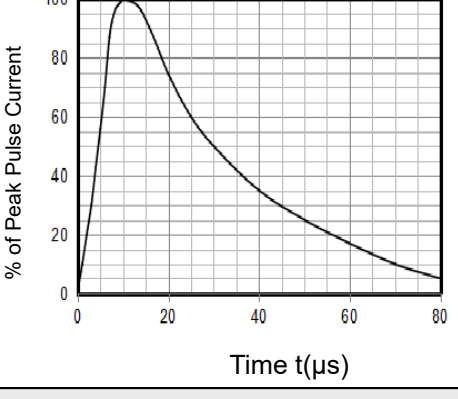
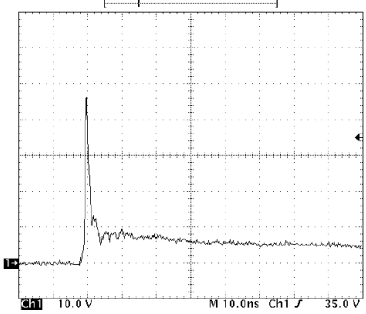
Parameter	Symbol	Value	Units
Peak Pulse Power (8/20 μs)	P_{PK}	100	W
Peak Pulse Current (8/20 μs)	I_{PP}	4	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	± 25	kV
ESD per IEC 61000-4-2 (Contact)		± 22	kV
Junction Temperature	T_J	-55 to 125	$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	-55 to 150	$^{\circ}\text{C}$

6. Electrical Characteristic ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse Working Voltage	V_{RWM}				5	V
Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	6.5		9.5	V
Reverse Leakage Current	I_R	$V_{RWM}=5\text{V}$		0.02	0.2	μA
Clamping Voltage	V_C	$I_{PP}=1\text{A}$ (8 x 20 μs pulse)			12	V
Clamping Voltage	V_C	$I_{PP}=4\text{A}$ (8 x 20 μs pulse)			25	V
Junction Capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$		0.3	0.5	pF

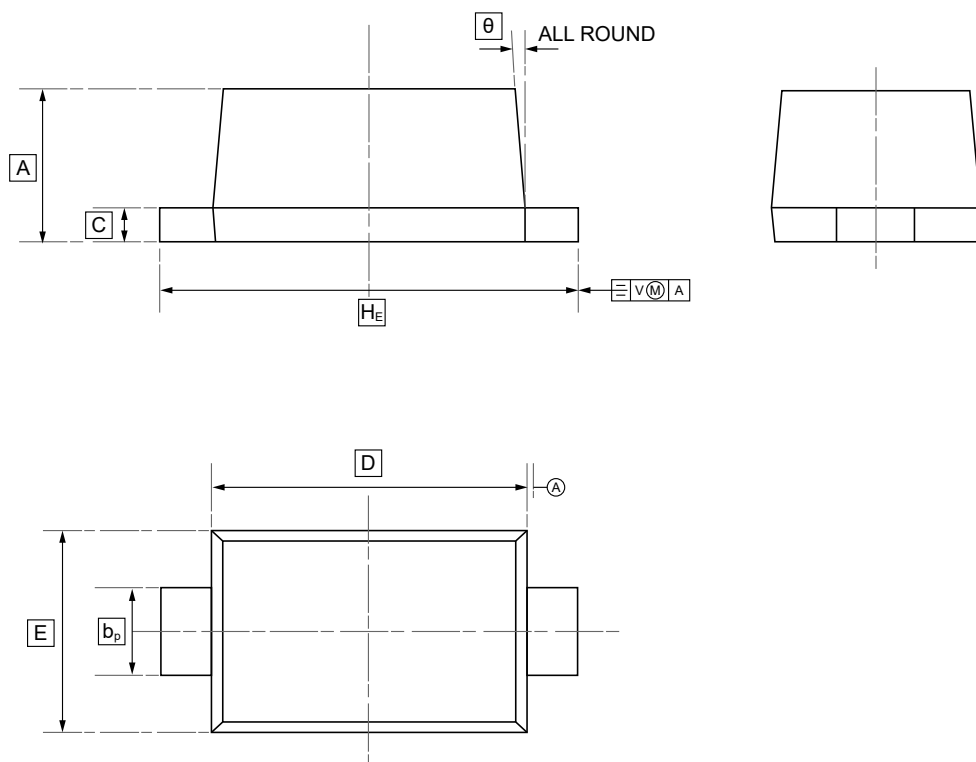


7. Typical characteristic

	
Figure 1: Junction Capacitance vs. Reverse Voltage	Figure 2: Clamping Voltage vs. Peak Pulse Current
	
Figure 3: Peak Pulse Power vs. Pulse Time	Figure 4: IEC61000-4-2 Pulse Waveform
	
Figure 5: Power Derating Curve	Figure 6: Data is taken with a 10x attenuator ESD Clamping Voltage



8.SOD-523 Package Outline Dimensions

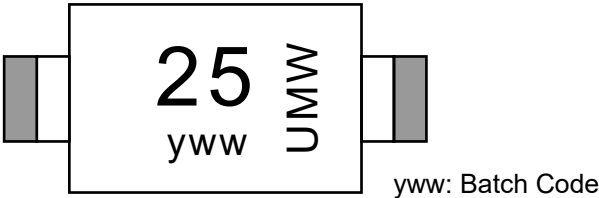


DIMENSIONS (mm are the original dimensions)

Symbol	A	b _p	C	D	E	H _E	θ
Min	0.58	0.3	0.100	1.15	0.75	1.5	5°
Max	0.68	0.4	0.135	1.25	0.85	1.7	



9.Ordering information



Order Code	Package	Base QTY	Delivery Mode
UMW AR0521D5	SOD-523	3000	Tape and reel



10.Disclaimer

UMW reserves the right to make changes to all products, specifications. Customers should obtain the latest version of product documentation and verify the completeness and currency of the information before placing an order.

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