

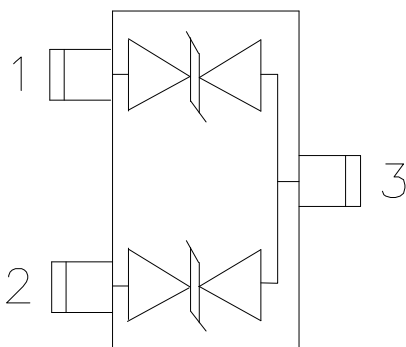
Description

The AU0522S5 is a 2-line bi-directional low capacitance TVS diode array, 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 AU0522S5 has a low capacitance with a typical value at 16pF, and 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 a 3-pin SOT-523 lead-free package. The small size, very low capacitance and high ESD surge protection make AU0522S5 an ideal choice to protect cell phone, digital video interfaces, high speed data ports, and many other portable applications.

Features

- Very low capacitance: 16pF typical
- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- Small SOT-523 package
- Up to 2-line protects
- 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) 6A (8/20 μs)
- RoHS Compliant

Dimensions and Pin Configuration



Circuit and Pin Schematic

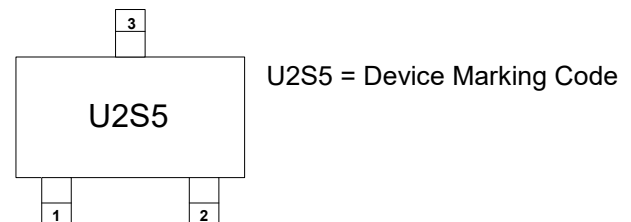
Mechanical Characteristics

- Package: SOT-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
- Notebooks and Handhelds
- Personal Digital Assistants
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players, Keypads, Side Keys, LCD
- USB 2.0

Marking Information



Ordering Information

Part Number	Packaging	Reel Size
AU0522S5	3000/Tape & Reel	7 inch

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

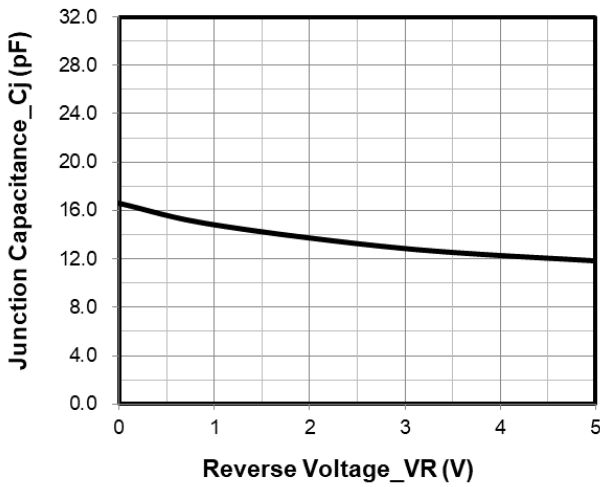
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppk	60	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	VESD	± 30 ± 30	kV
Operating Temperature Range	TJ	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^{\circ}\text{C}$

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

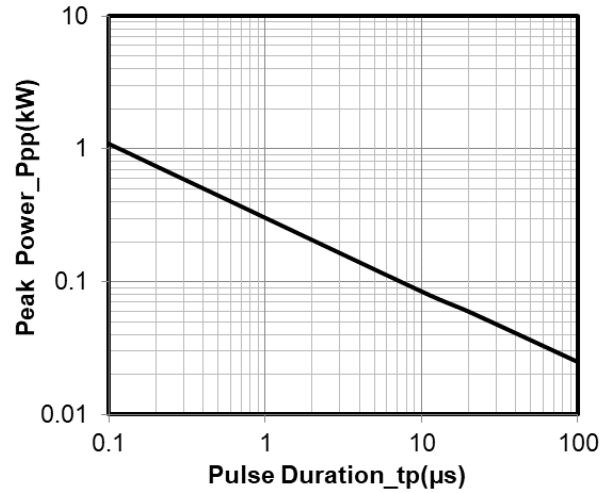
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			5	V	
Breakdown Voltage	VBR	6			V	IT = 1mA
Reverse Leakage Current	IR			0.2	μA	VRWM = 5V
Clamping Voltage	VC		8		V	I _{PP} = 1A (8 x 20 μs pulse), any I/O to pin 3
Clamping Voltage	VC			10	V	I _{PP} = 6A (8 x 20 μs pulse), any I/O to pin 3
Junction Capacitance	CJ		16		pF	VR = 0V, f = 1MHz, any I/O pin to pin 3

Note 1: I/O pins are Pin 1, 2

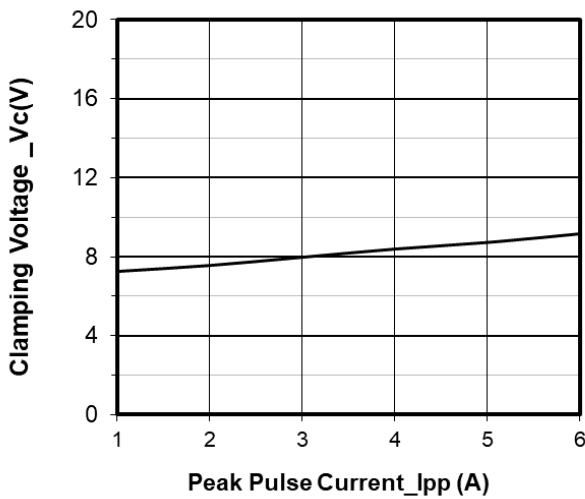
Typical Performance Characteristics (T_A=25°C unless otherwise Specified)



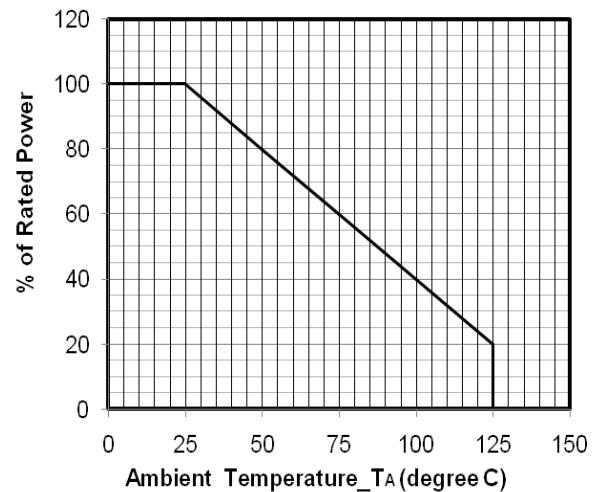
Junction Capacitance vs. Reverse Voltage



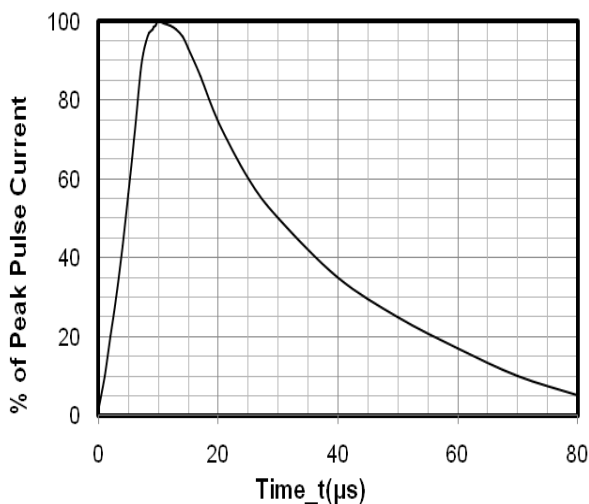
Peak Pulse Power vs. Pulse Time



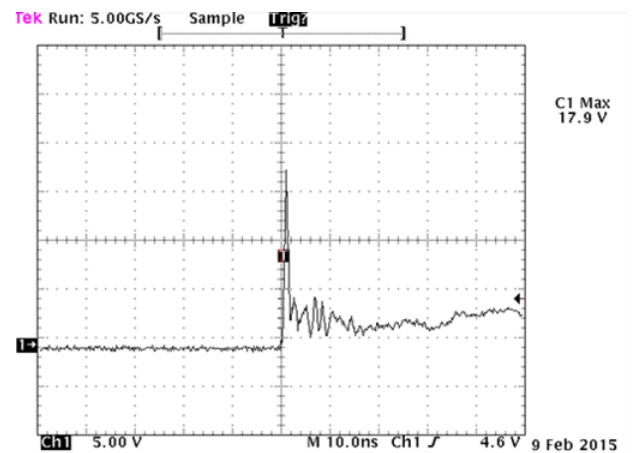
Clamping Voltage vs. Peak Pulse Current (tp = 8/20us)



Power Derating Curve



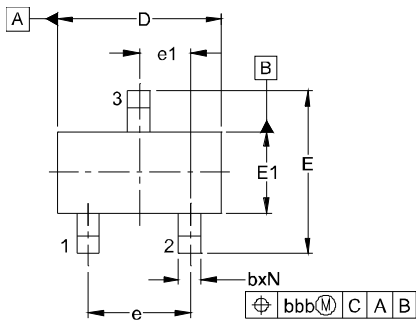
8 X 20μs Pulse Waveform



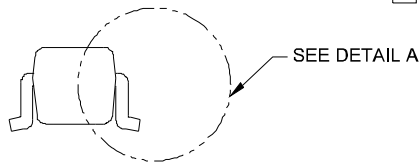
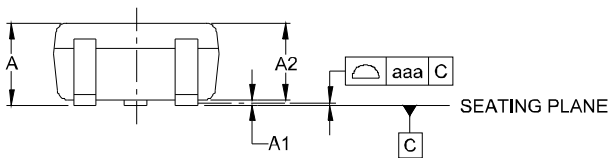
Note: Data is taken with a 10x attenuator

ESD Clamping Voltage

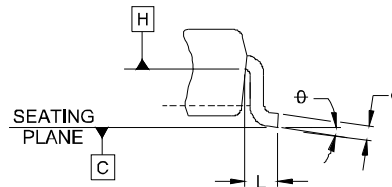
+8 kV Contact per IEC61000-4-2

SOT-523 Package Outline Drawing


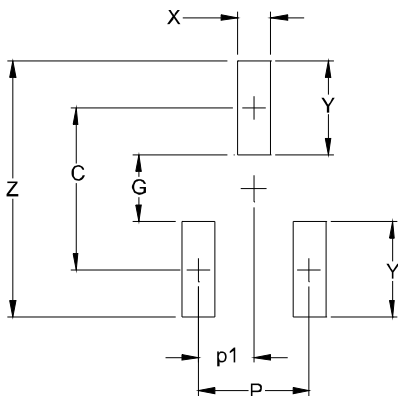
DIM	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	.023	-	.035	0.60	-	0.90
A1	.000	-	.004	0.00	-	0.10
A2	.023	.030	.031	0.60	0.75	0.80
b	.005	-	.012	0.15	-	0.30
c	.003	-	.008	0.10	-	0.20
D	.059	.063	.067	1.50	1.60	1.70
E	.057	.063	.069	1.45	1.60	1.75
E1	.029	.031	.033	0.75	0.80	0.85
e	.039 BSC			1.00 BSC		
e1	.020 BSC			0.50 BSC		
L	(.009)			(0.22)		
N	3			3		
θ	0°	-	8°	0°	-	8°
aaa	.004			0.10		
bbb	.008			0.20		



SIDE VIEW



DETAIL A

Suggested Land Pattern


DIM	DIMENSIONS	
	INCHES	MILLIMETERS
C	(.055)	(1.40)
P	.039	1.00
p1	.020	0.50
G	.024	0.60
X	.016	0.40
Y	.031	0.80
Z	.087	2.20

Contact Information

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