

2-Line Low Capacitance TVS Diode Array

Features

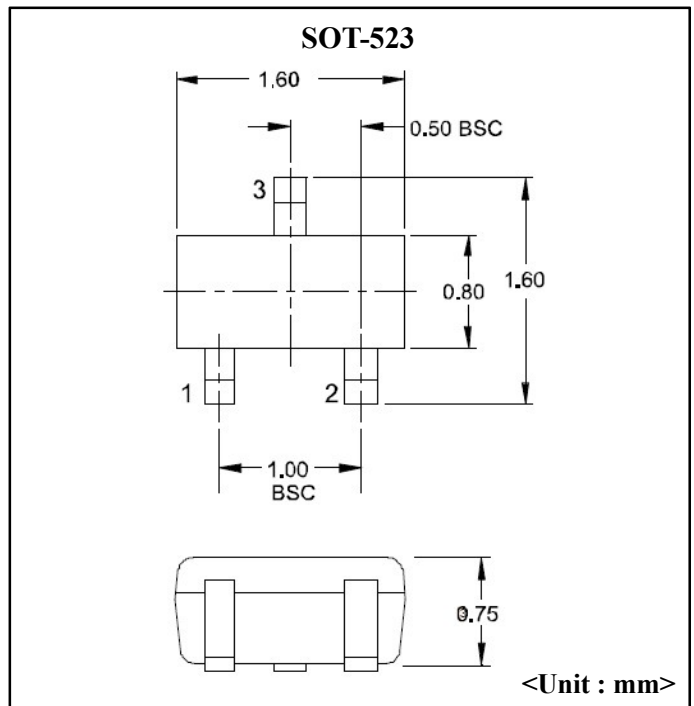
- Ultra Low capacitance : 0.6pF typical (I/O to I/O)
- Ultra low leakage : nA level
- Low operating voltage : 5V
- Low clamping voltage
- Up to 2 data lines protects
- JEDEC SOT-523 package
- Complies with following standards :
 - IEC 61000-4-2(ESD) immunity test
Air discharge : $\pm 25\text{kV}$, Contact discharge : $\pm 20\text{kV}$
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) 8A (8/20us)
- RoHS Compliant

Mechanical Data

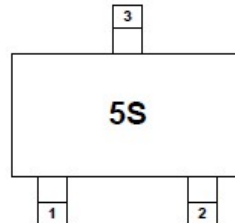
- Package : SOT-523
- Case Material : "Green" Molding Compound.
- Lead Finish : Matte Tin
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity : Level 3 per J-STD-020
- Terminal Connections : See Diagram Below
- Marking Information : See Below

Applications

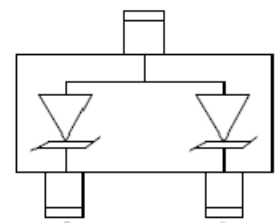
- Mobile Display Digital Interface (MDDI)
- USB 2.0
- Photodetector Protection
- HBT Power Amplifier Protection
- Infiniband Transceiver Protection
- Firewire Ports



Marking



5S = Device Marking Code



Circuit and Pin Schematic

Absolute Maximum Ratings (Ta= 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20us)	Ppk	130	W
Peak Pulse Current (8/20us)	Ipp	8	A
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 25	kV
ESD per IEC 61000-4-2 (Contact)		± 20	
Operating Junction Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C

Electrical Characteristics (Ta= 25°C unless otherwise specified)

Characteristic	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Reverse Working Voltage	V _{RWM}	-	-	5.0	V	
Breakdown Voltage	V _{BR}	6.0	-	-	V	I _T = 1mA,
Reverse Leakage Current	I _R	-	-	0.5	uA	V _{RWM} = 5V
Clamping Voltage	V _C	-	-	10	V	I _{pp} =1A(8×20us pulse)
Clamping Voltage	V _C	-	-	16	V	I _{pp} =8A(8×20us pulse)
Junction Capacitance	C _J	-	0.6	-	pF	f=1MHz, V _R =0V
Junction Capacitance	C _J	-	1.2	-	pF	f=1MHz, V _R =0V

* Test Pin : Pin 1 or pin 2 to pin 3 and between pin 1 and pin 2

Ratings and Characteristics Curves (Ta=25°C unless otherwise noted)

Fig.1 Power Derating Curve

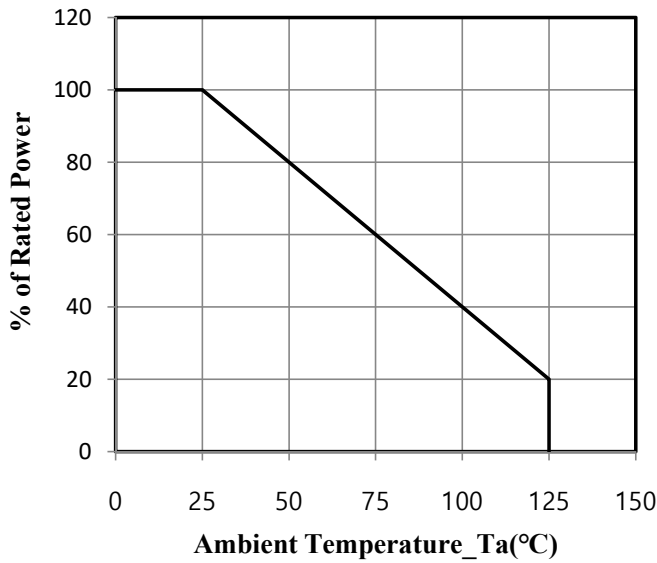


Fig.2 Peak Pulse Power vs. Pulse Time

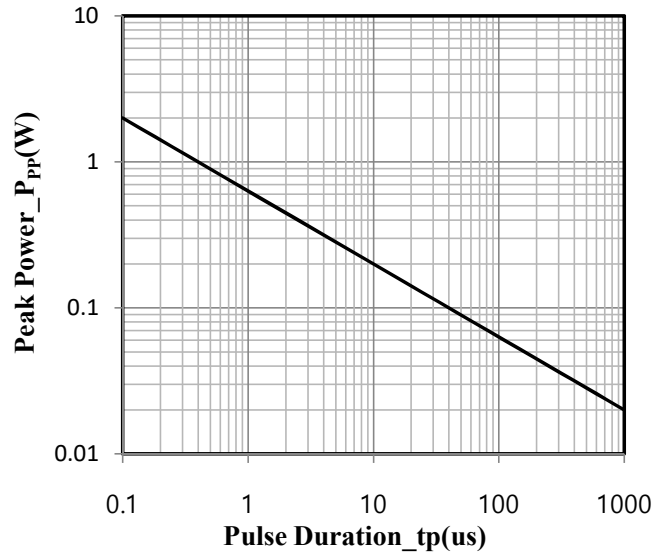


Fig.3 Clamping Voltage vs. Peak Pulse Current (tp=8/20us)

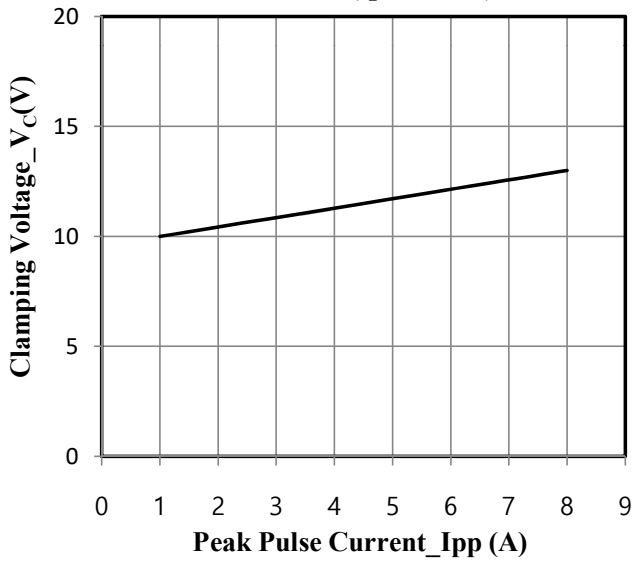


Fig.4 Junction Capacitance vs. Reverse Voltage

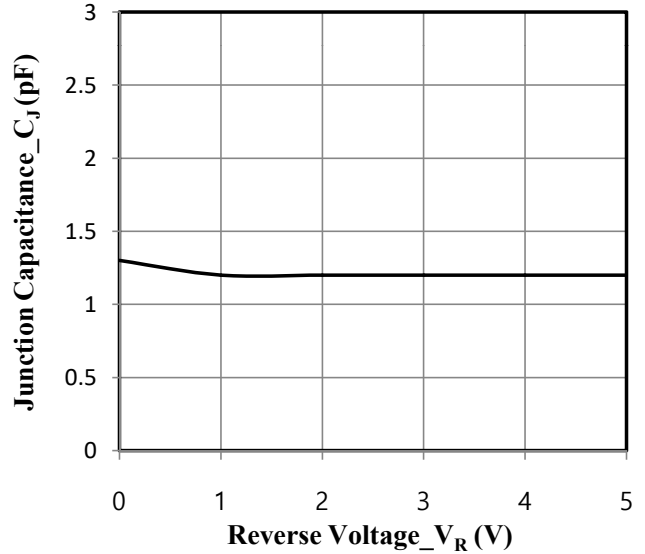


Fig.5 8 × 20us Pulse Waveform

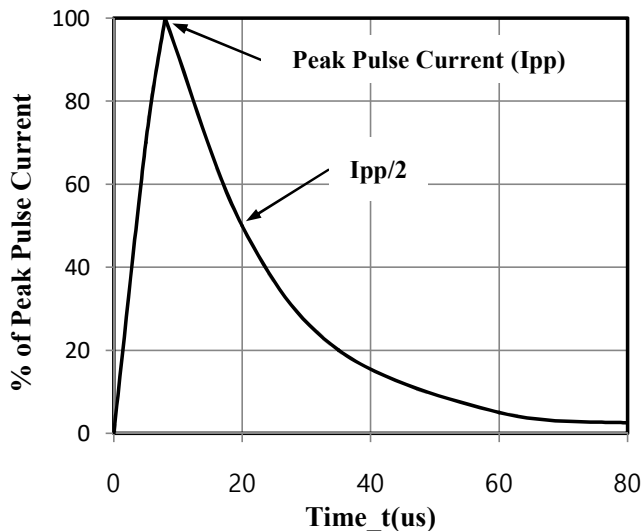
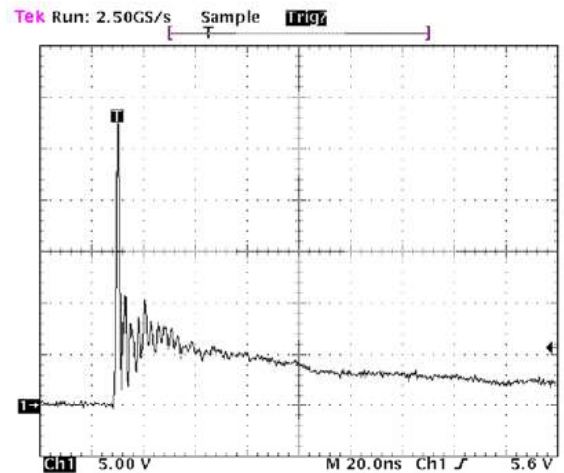
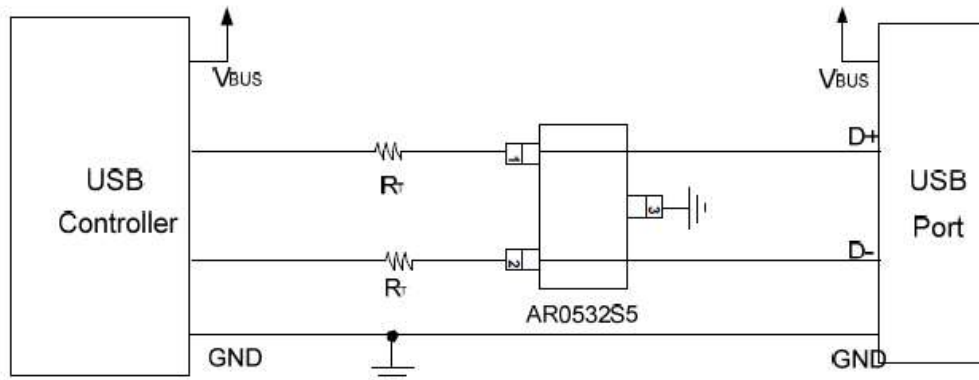


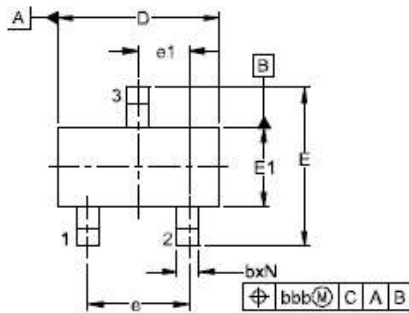
Fig. 6 ESD Clamping Voltage 8kV Contact per IEC61000-4-2



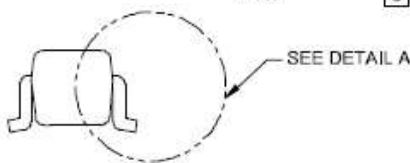
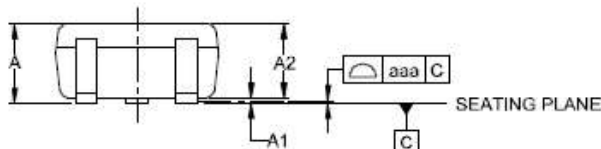
AR0532S5 on USB Port Application



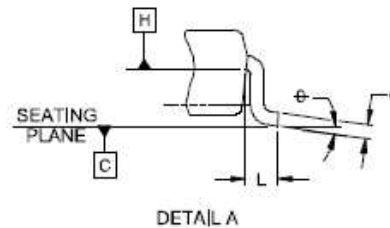
SOT-523 Package Outline Drawing



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	(0.009)		(0.22)			
N	3		3			
φ	0°	-	8°	0°	-	8°
aaa	.004		0.10			
bbb	.008		0.20			

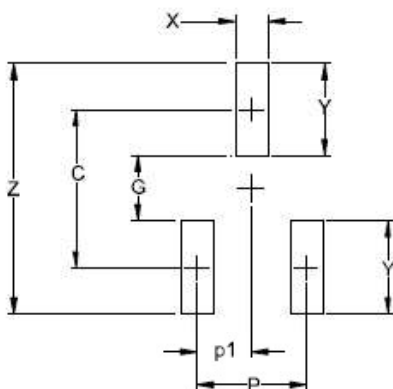


SIDE VIEW



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