



4-Line Bi-directional TVS Diode Array

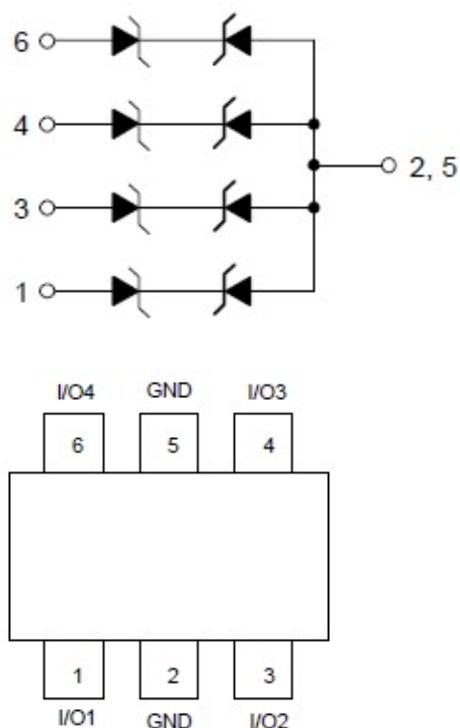
Description

The AU1224S6 is a 12V bi-directional TVS 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 AU1224S6 has low capacitance with a typical value at 4pF, and complies with the IEC 61000-4-2 (ESD) standard with $\pm 15\text{kV}$ air and $\pm 8\text{kV}$ contact discharge. It is assembled into a 6-pin lead-free SOT-563 package. The combination of small size, low capacitance and high level of ESD protection makes it ideal for cellular, notebooks, desktops, and other portable application.

Features

- Ultra low leakage : nA level
- Operating voltage : 12V
- Low clamping voltage
- Up to 4 data lines protects
- JEDEC SOT-563 package
- Complies with following standards :
 - IEC 61000-4-2(ESD) immunity test
Air discharge : $\pm 15\text{kV}$, Contact discharge : $\pm 8\text{kV}$
 - IEC 61000-4-5 (Lightning) 3A (8/20us)
- RoHS Compliant

Circuit and Pin Schematic



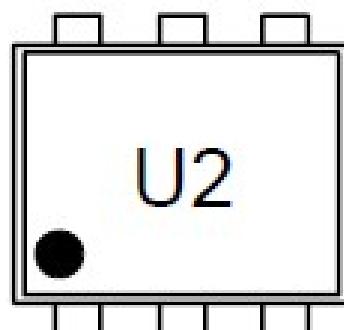
Mechanical Data

- Package : SOT-563
- Case Material : "Green" Molding Compound.
- Lead Finish : Matte Tin
- Moisture Sensitivity : Level 3 per J-STD-020
- Terminal Connections : See Diagram Below
- Marking Information : See Below

Applications

- Personal Digital Assistants
- Portable Instrumentation
- Computer
- Printers
- Set Top Boxes
- Notebooks and Handhelds

Marking Information



U2 = Device Marking Code
Dot indicates pin 1

Ordering Information

Part Number	Packaging	Reel Size
AU1224S6	3000/Tape & Reel	7 inch

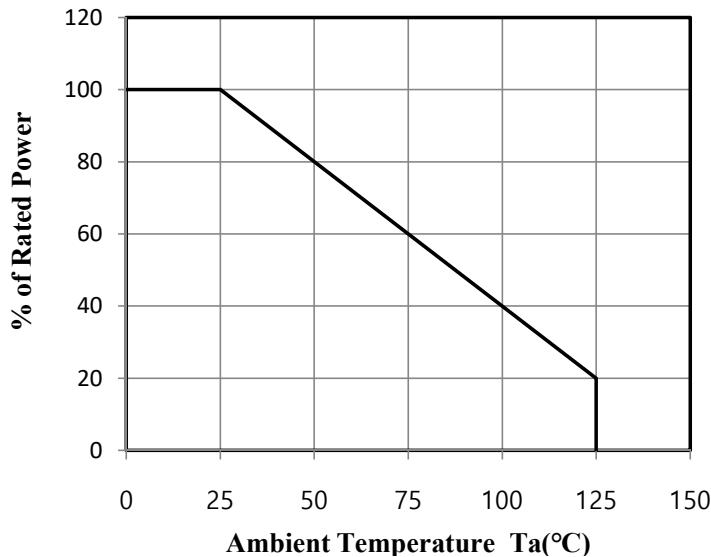
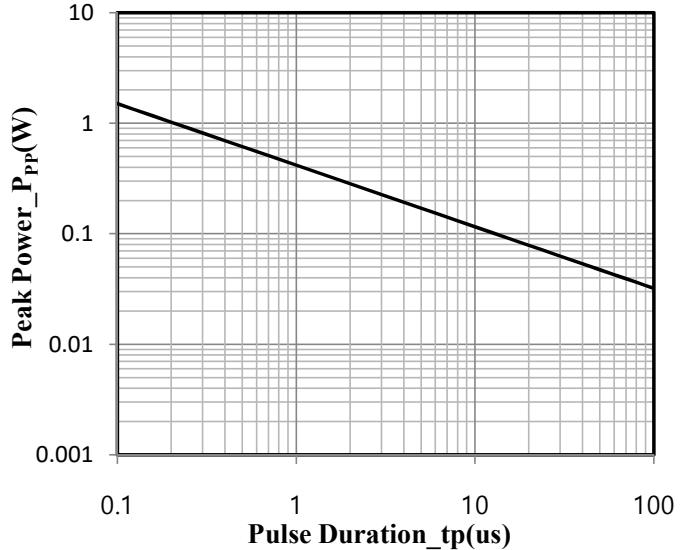
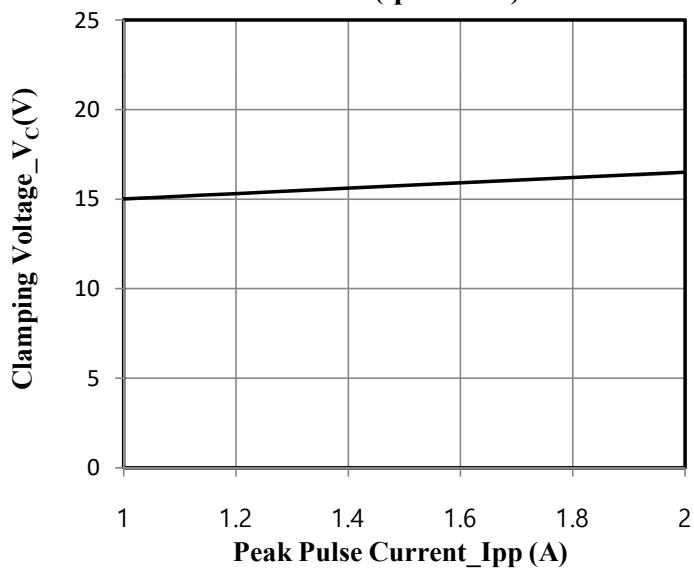
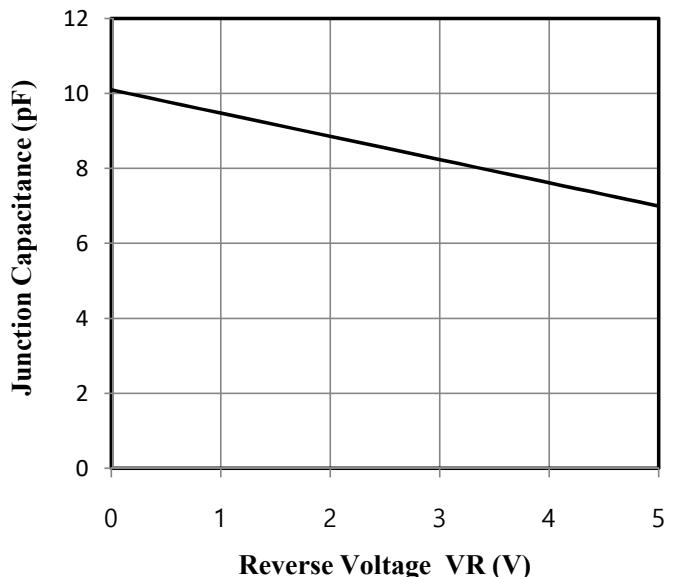
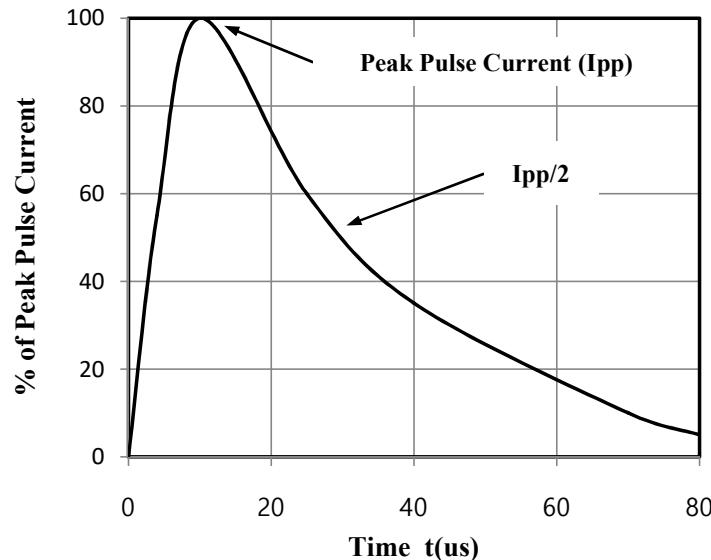
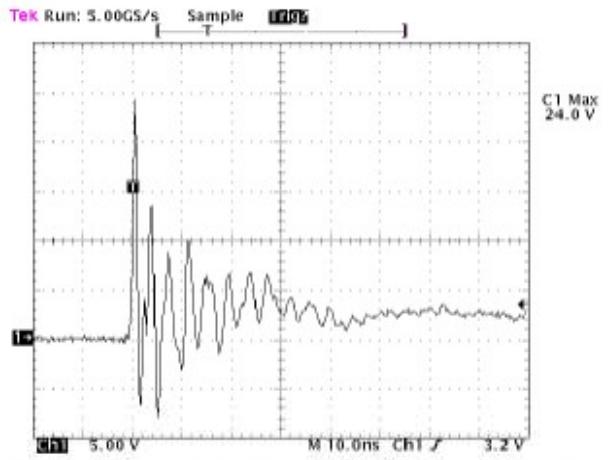
**Absolute Maximum Ratings (Ta= 25°C unless otherwise specified)**

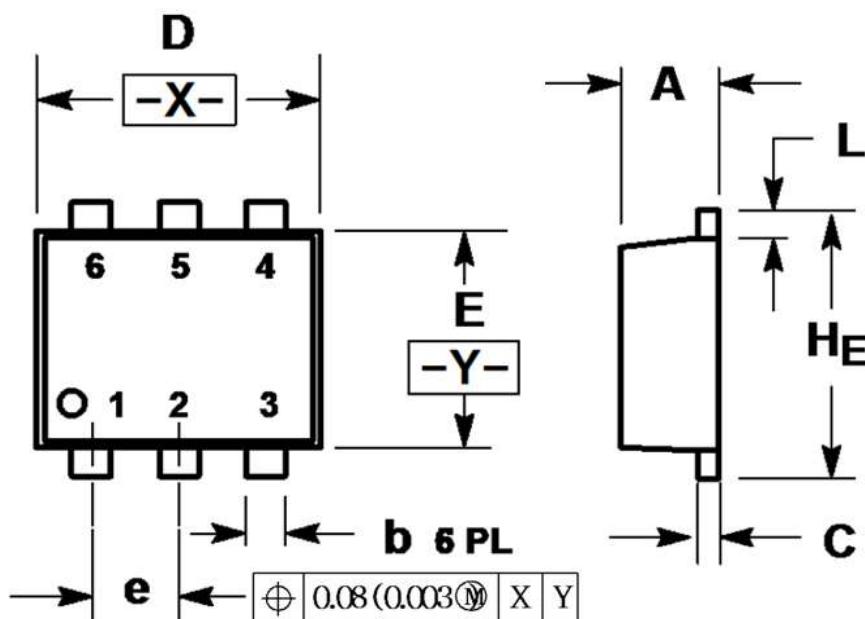
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20us)	Ppk	75	W
Peak Pulse Current (8/20us) _ Vcc Diode	Ipp	3	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V _{ESD}	±15 ±8	kV
Operating Junction Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C

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

Characteristic	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Reverse Working Voltage	V _{RWM}	-	-	12.0	V	
Breakdown Voltage	V _{BR}	13.3	-	17.8	V	I _T = 1mA
Reverse Leakage Current	I _R	-	-	0.2	uA	V _{RWM} = 12V
Clamping Voltage	V _C	-	-	15	V	I _{PP} =1A (8×20us pulse)
Clamping Voltage	V _C	-	-	25	V	I _{PP} =3A (8×20us pulse)
Junction Capacitance	C _J	-	10	15	pF	f=1MHz, V _R =3V, line to GND

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

SOT-563 Package Outline Drawing

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.50	0.55	0.60	0.020	0.021	0.023
b	0.17	0.22	0.27	0.007	0.009	0.011
C	0.08	0.12	0.18	0.003	0.005	0.007
D	1.50	1.60	1.70	0.059	0.062	0.066
E	1.10	1.20	1.30	0.043	0.047	0.051
e	0.5 BSC			0.02 BSC		
L	0.10	0.20	0.30	0.004	0.008	0.012
H _E	1.50	1.60	1.70	0.059	0.062	0.066

Suggested Land Pattern