

1.Description

The ESDA6V8UW is a low capacitance TVS (Transient Voltage Suppressor) array designed to protect high speed data interfaces. It has been specifically designed to protect sensitive electronic components which are connected to data and transmission lines from over-stress caused by ESD (Electrostatic Discharge). The ESDA6V8UW incorporates four pairs of low capacitance steering diodes plus a TVS diode.

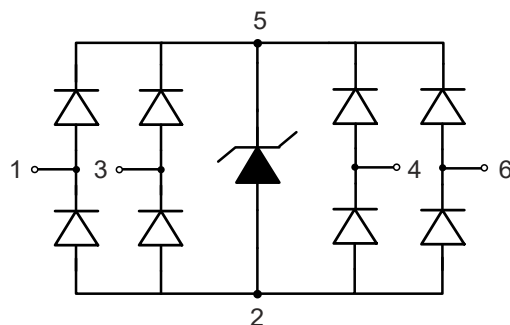
2.Applications

- USB 2.0
- HDMI 1.3
- SATA and eSATA
- DVI
- IEEE 1394
- PCI Express
- Portable Electronics
- Notebooks

3.Features

- Reverse stand-off voltage: 5V Max
- Transient protection for each line according to IEC61000-4-2 (ESD): $\pm 8\text{kV}$ (contact discharge)
- IEC61000-4-5 (surge): 3A (8/20 μs)
- Low clamping voltage
- Low leakage current
- Low capacitance:
 - CI/O-GND=0.70pF typ.
 - CI/O-I/O=0.35pF typ.

4.Pinning information



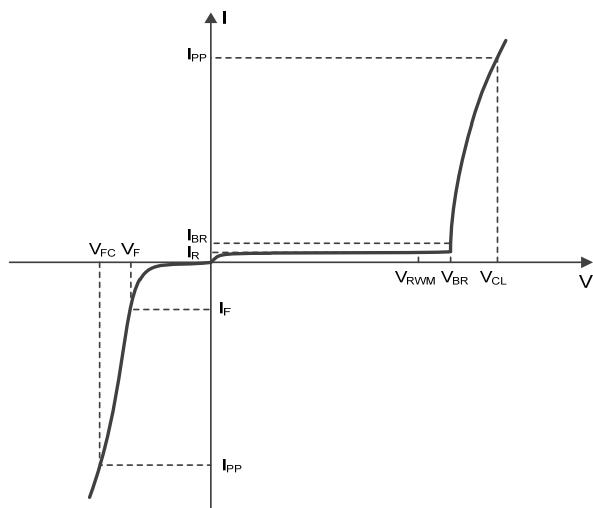
SOT-363



5. Absolute Maximum Ratings

Parameter	Symbol	Rating	Units
Peak pulse power ($t_p=8/20\mu s$)	P_{PK}	45	W
Peak pulse current ($t_p=8/20\mu s$)	I_{PP}	3	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	± 15	kV
ESD according to IEC61000-4-2 contact discharge		± 8	kV
Junction temperature	T_J	125	$^{\circ}C$
Lead temperature	T_L	260	$^{\circ}C$
Storage temperature	T_{STG}	-55 to 150	$^{\circ}C$

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



Symbol	Parameter
V_{RWM}	Reverse stand-off voltage
I_R	Reverse leakage current
V_{BR}	Reverse breakdown voltage
V_{CL}	Clamping voltage
I_{PP}	Peak pulse current
V_F	Forward voltage
I_F	Forward current
V_{FC}	Forward clamping voltage
I_{PP}	Peak pulse current



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

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse stand-off voltage	V_{RWM}				5	V
Reverse leakage current	I_R	$V_{RWM}=5\text{V}$			1	μA
Reverse breakdown voltage	V_{BR}	$I_{BR}=1\text{mA}$	6.5	8	9	V
Forward voltage	V_F	$I_F=10\text{mA}$	0.6	0.9	1.2	V
Clamping voltage ¹⁾	V_{CL}	$I_{pp}=1\text{A}$, $t_p=8/20\mu\text{s}$			11	V
		$I_{pp}=3\text{A}$, $t_p=8/20\mu\text{s}$			15	V
Junction capacitance	$C_{I/O - GND}$	$V_R=0\text{V}$, $f=1\text{MHz}$, Any I/O to GND		0.7	0.9	pF
	$C_{I/O - I/O}$	$V_R=0\text{V}$, $f=1\text{MHz}$, Any I/O to I/O		0.35	0.5	pF

Notes: 1) According to IEC61000-4-5.

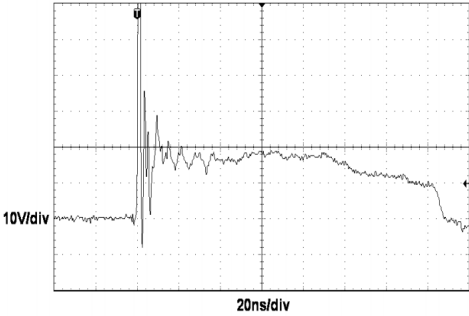
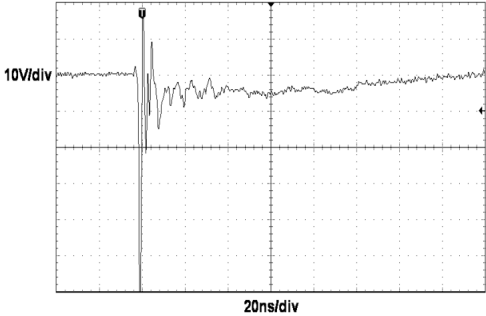


8.1Typical characteristic

Figure 1: 8/20µs waveform per IEC61000-4-5	Figure 2: Contact discharge current waveform per IEC61000-4-2
Figure 3: Clamping voltage vs. Peak pulse current	Figure 4: Capacitance vs. Reverse voltage
Figure 5: Non-repetitive peak pulse power vs. Pulse time	Figure 6: Power derating vs. Ambient temperature

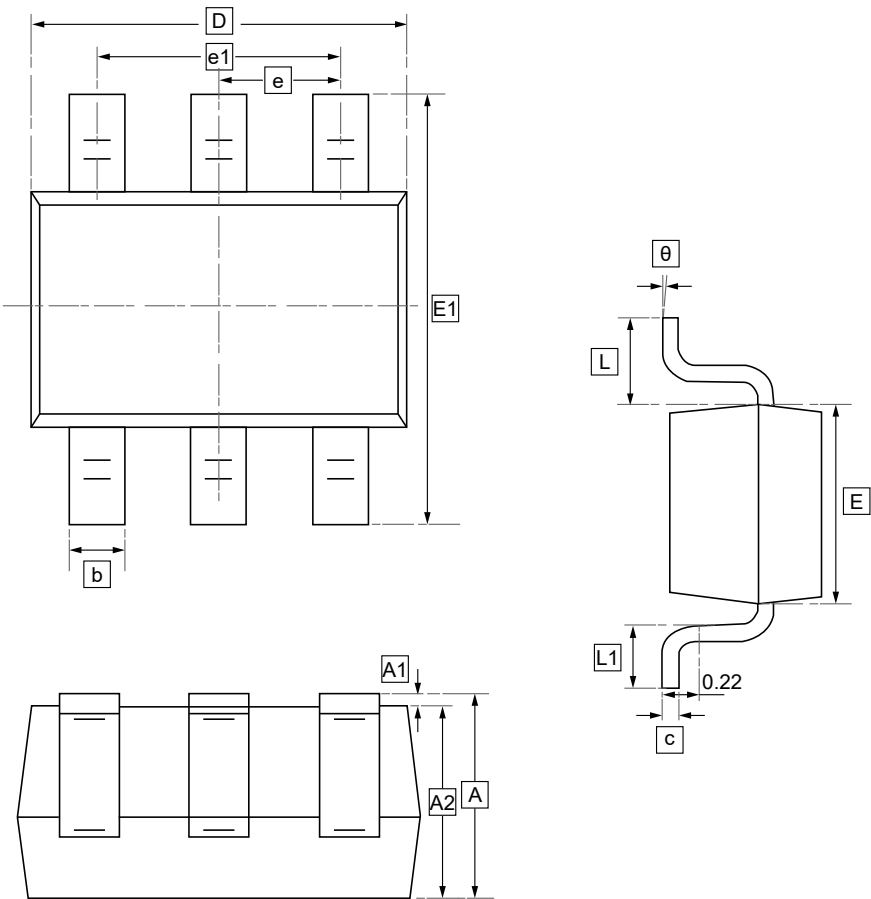


8.2Typical characteristic

	
Figure 7: ESD clamping (+8kV contact discharge per IEC61000-4-2)	Figure 8: ESD clamping (-8kV contact discharge per IEC61000-4-2)



9.SOT-363 Package Outline Dimensions



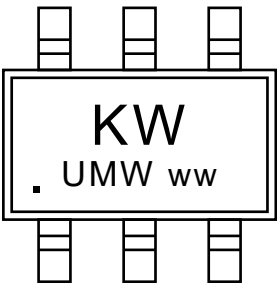
DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	A2	b	c	D	E	E1	e	e1	L	L1
Min	0.900	0.000	0.900	0.150	0.080	2.000	1.150	2.150	0.65	1.200	0.525	0.260
Max	1.100	0.100	1.000	0.350	0.150	2.200	1.350	2.450	TYP	1.400	REF	0.460

Symbol	θ
Min	0°
Max	8°



10.Ordering information



ww: Batch Code

Order Code	Package	Base QTY	Delivery Mode
UMW ESDA6V8UW	SOT-363	3000	Tape and reel



11.Disclaimer

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