

1.Description

Designed to protect voltage sensitive electronic components from ESD and other transients. Excellent clamping capability, low leakage, low capacitance, and fast response time provide best in class protection on designs that are exposed to ESD.

The combination of small size, low capacitance and high level of ESD protection makes them a flexible solution for applications such as HDMI, Display Port TM, and MDDI interfaces.

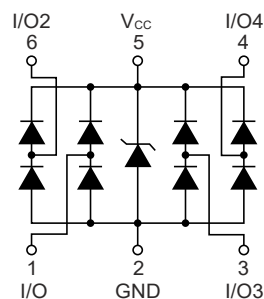
2.Applications

- Computers and peripherals
- Audio and video equipment
- High speed data lines
- Display port
- High Definition Multi-Media Interface (HDMI)
- Digital Visual Interface (DVI)
- LVDS
- USB 2.0
- Other electronics equipments communication systems

3.Features

- Uni-directional ESD protection of four lines
- Low capacitance: 0.8pF(max)
- Low reverse stand-off voltage: 5V
- Low reverse clamping voltage
- Low leakage current
- Fast response time
- Excellent package: 2.1mm×1.25mm×0.96mm
- JESD22-A114-B ESD Rating of class 3B per human body model
- IEC 61000-4-2 Level 4 ESD protection

4.Pinning information



SOT-363



5. Absolute Maximum Ratings $T_A = 25^\circ\text{C}$

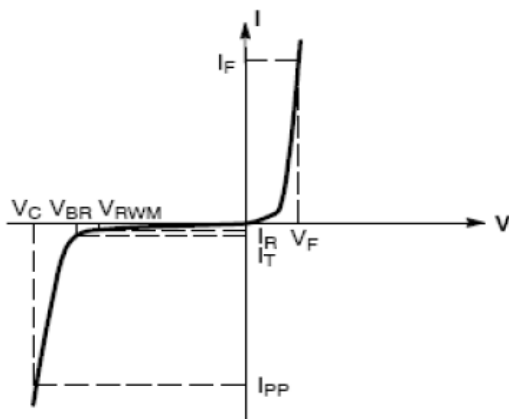
Parameter	Symbol	Limit	Units
IEC 61000-4-2 ESD Voltage	$V_{\text{ESD}(1)}$	± 25	kV
Air Model		± 25	kV
Contact Model		± 16	kV
JESD22-A114-B ESD Voltage		± 0.4	kV
ESD Voltage	Machine Model		
Peak Pulse Power	$P_{\text{PP}(2)}$	125	W
Peak Pulse Current	$I_{\text{PP}(2)}$	5	A
Lead Solder Temperature – Maximum (10 Second Duration)	T_L	260	$^\circ\text{C}$
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ\text{C}$

Notes:

(1). Device stressed with ten non-repetitive ESD pulses.

(2). Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5.

6. Electrical Parameter



Symbol	Parameter
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Peak Pulse Current
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_R	Reverse Leakage Current @ V_{RWM}
V_{RWM}	Reverse Stand off Voltage
V_F	Forward Voltage @ I_F
I_F	Forward Current



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

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Per channel(I/O to GND unless otherwise specified)						
Reverse stand-off voltage	$V_{RWM(1)}$				5	V
Breakdown voltage	$V_{(BR)}$	$I_T=1\text{mA}$	6.5		8.8	V
		$I_T=1\text{mA}$, V_{CC} to GND	5.8		8.1	V
Reverse leakage current	I_R	$V_{RWM}=5\text{V}$ (I/O to GND & V_{CC} to GND)			1	μA
Forward voltage	V_F	$I_F=10\text{mA}$ (GND to I/O & GND to V_{CC})	0.5		1	V
Clamping voltage	$V_{C(2)}$	$I_{pp}=1\text{A}$ (I/O to GND & V_{CC} to GND)			15	V
		$I_{pp}=5\text{A}$ (I/O to GND & V_{CC} to GND)			25	V
Junction capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$			0.8	pF
		$V_R=0\text{V}$, $f=1\text{MHz}$, I/O to I/O			0.4	pF

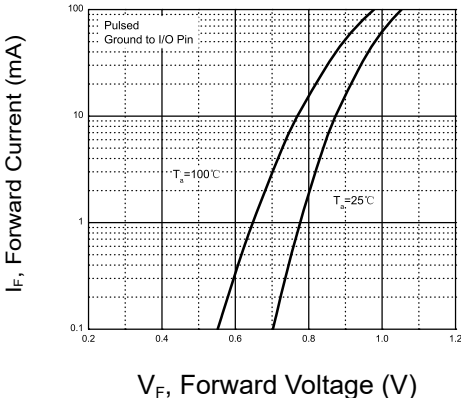
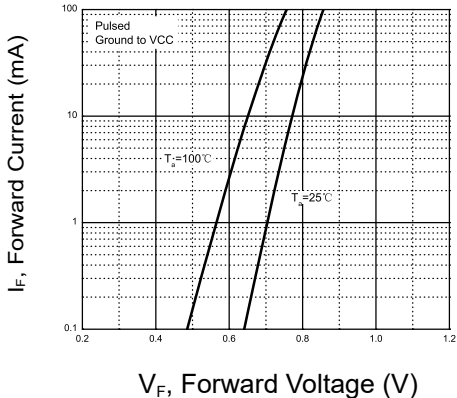
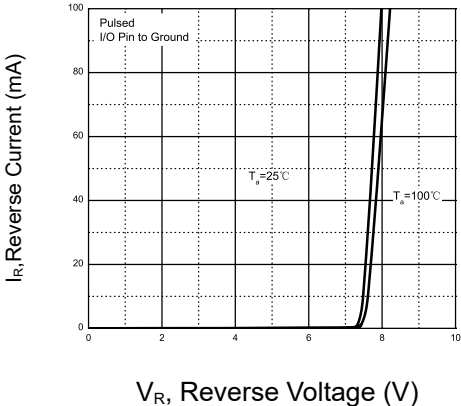
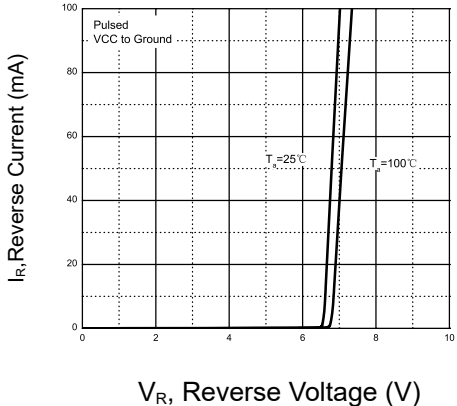
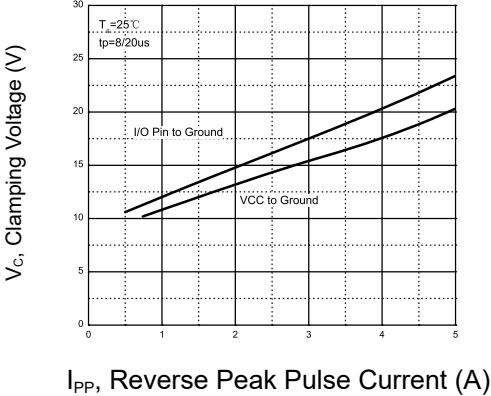
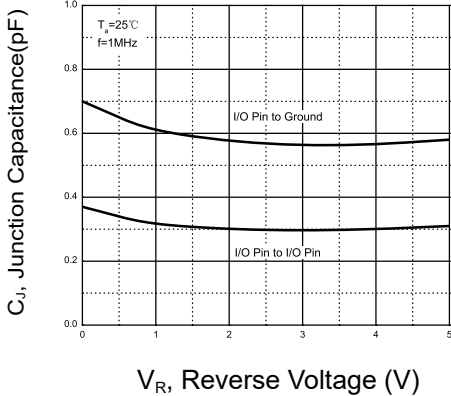
Notes:

(1).Other voltages available upon request.

(2).Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5.



8.1Typical characteristic

	
Figure 1: Forward Characteristics	Figure 2: Forward Characteristics
	
Figure 3: Reverse Characteristics	Figure 4: Reverse Characteristics
	
Figure 5: V_C — I_{PP}	Figure 6: Capacitance Characteristics

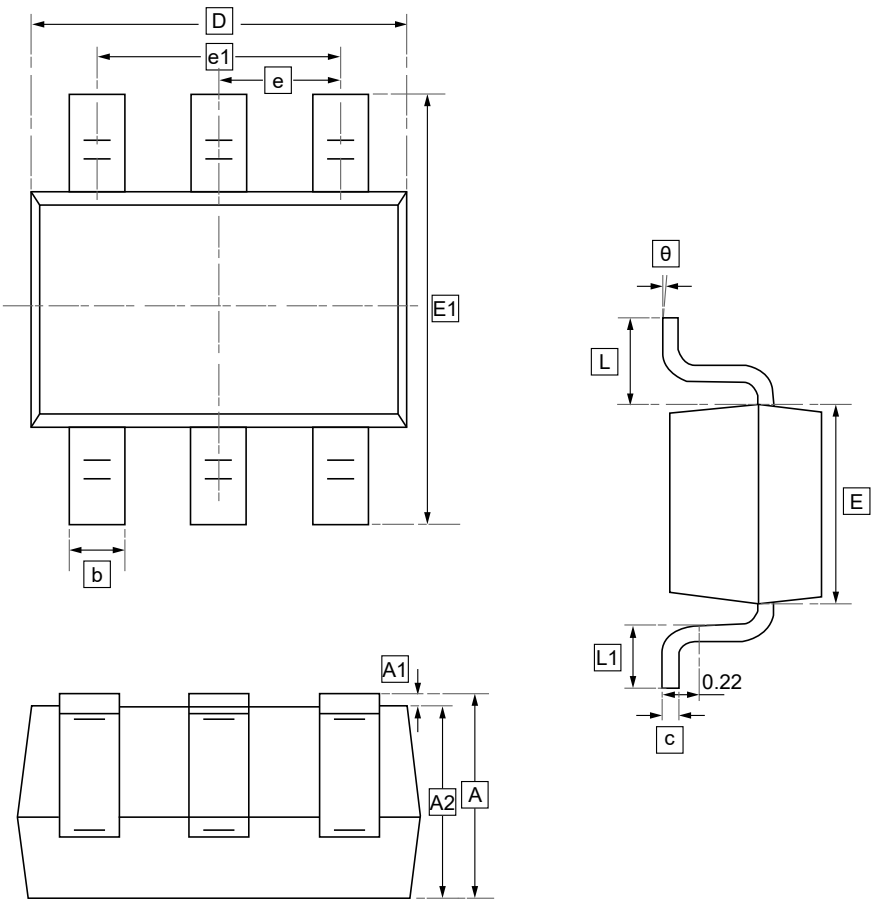


8.2Typical characteristic

Figure 7: ESD pulse waveform according to IEC61000-4-2	Figure 8: 8/20μs pulse waveform according to IEC 61000-4-5



9.SOT-363 Package Outline Dimensions



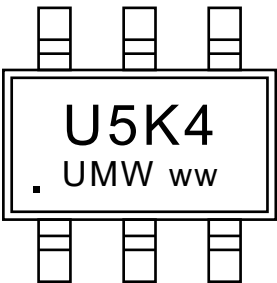
DIMENSIONS (mm are the original dimensions)

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 ESDU5V0K4	SOT-363	3000	Tape and reel



11.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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