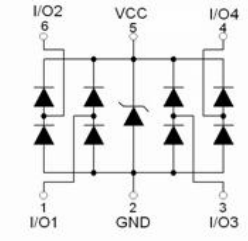
DESCRIPTION

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. It is designed to replace multiplayer varistors (MLV) in consumer equipments applications such as mobile phone, notebook, PAD, STB, LCD TV etc.



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
- Excellent package:2.1mm×1.25mm×0.96mm
- Fast response time
- JESD22-A114-B ESD Rating of class 3B per human body model
- IEC 61000-4-2 Level 4 ESD protection

APPLICATIONS

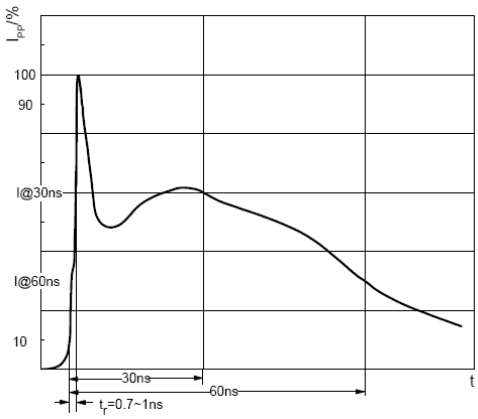
- Computers and peripherals
- Audio and video equipment
- High speed data lines
- Display port
- High Definition Multi-Media Interface (HDMI)
- Digital Visual Interface (DVI)
- LVDS
- USB 2.0
- Other electronics equipments communication systems

MAXIMUM RATINGS (T_a=25℃unless otherwise noted)

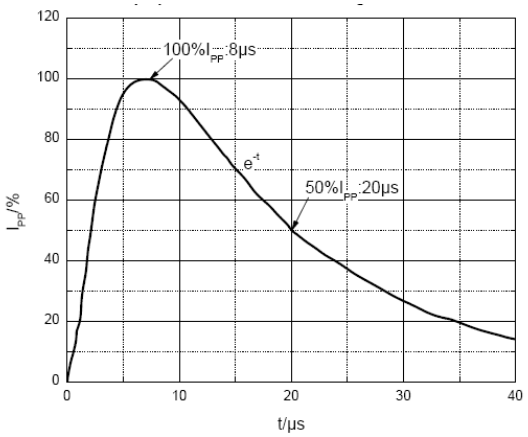
Parameter		Symbol	Limit	Unit
IEC 61000-4-2 ESD Voltage	Air Model	V_{ESD}(1)	±25	kV
	Contact Model		±25	
JESD22-A114-B ESD Voltage	Per Human Body Model		±16	
ESD Voltage	Machine Model		±0.4	
Peak Pulse Power		P_{PP}(2)	125	W
Peak Pulse Current		I_{PP}(2)	5	A
Lead Solder Temperature − Maximum (10 Second Duration)		T_L	260	℃
Operation Junction and Storage Temperature Range		T_J,T_{stg}	-55 ~ +150	℃

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

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



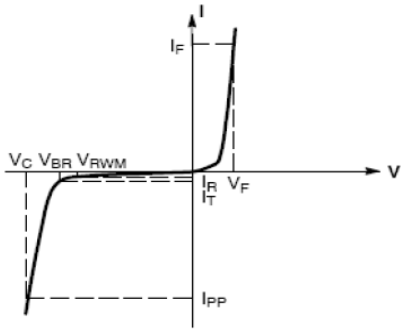
ESD pulse waveform according to IEC61000-4-2



8/20μs pulse waveform according to IEC 61000-4-5

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 Standoff Voltage
V_F	Forward Voltage@ I_F
I_F	Forward Current



V-I characteristics for a uni-directional TVS

ELECTRICAL CHARACTERISTICS(T_a=25℃unless otherwise specified)

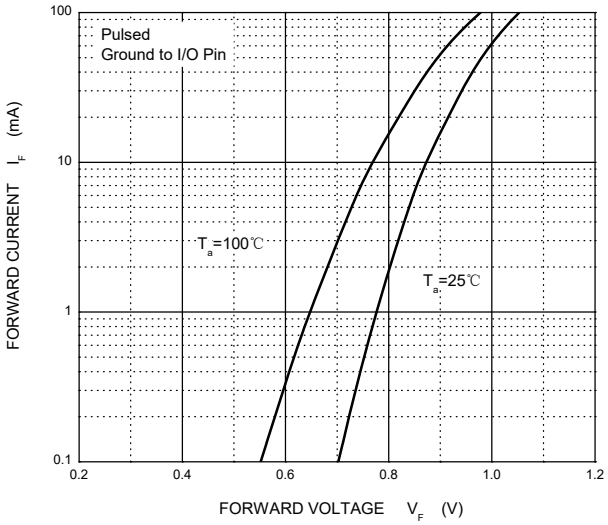
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Per channel(I/O to GND unless otherwise specified)						
Reverse stand off voltage	V_{RWM} (1)				5	V
Breakdown voltage	$V_{(BR)}$	I_T=1mA	6.5		8.8	V
		I_T=1mA V_{CC} to GND	5.8		8.1	V
Reverse leakage current	I_R	V_{RWM}=5V (I/O to GND & V_{CC} to GND)			1	μA
Forward voltage	V_F	I_F=10mA (GND to I/O & GND to V_{CC})	0.5		1.0	V
Clamping voltage	V_C (2)	I_{PP}=1A (I/O to GND & V_{CC} to GND)			15	V
		I_{PP}=5A (I/O to GND & V_{CC} to GND)			25	V
Junction capacitance	C_J	V_R=0V,f=1MHz			0.8	pF
		V_R=0V,f=1MHz, I/O to I/O			0.4	pF

(1).Other voltages available upon request.

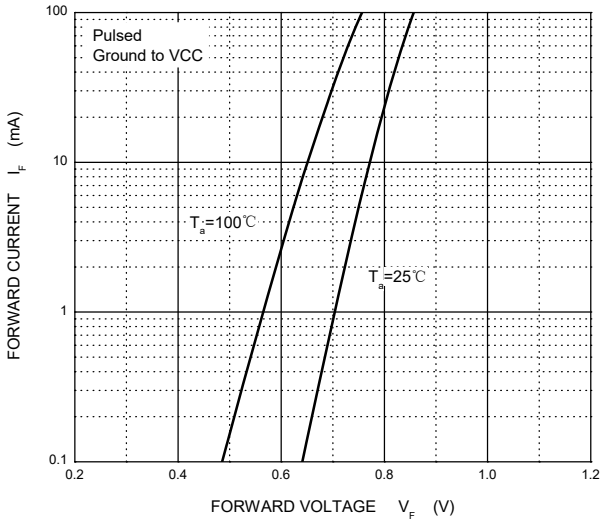
(2).Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5

TYPICAL CHARACTERISTICS

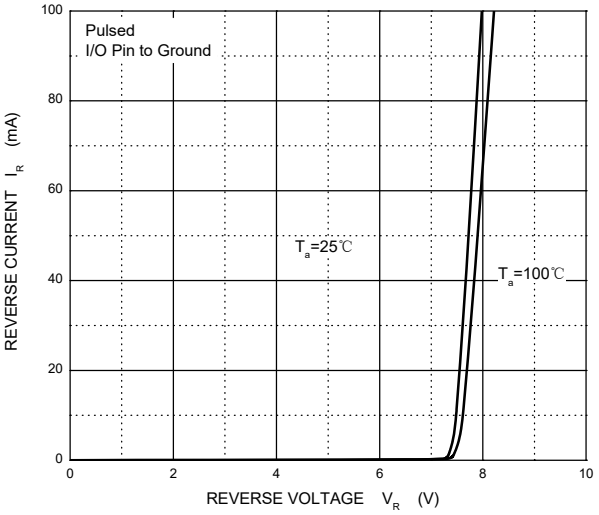
Forward Characteristics



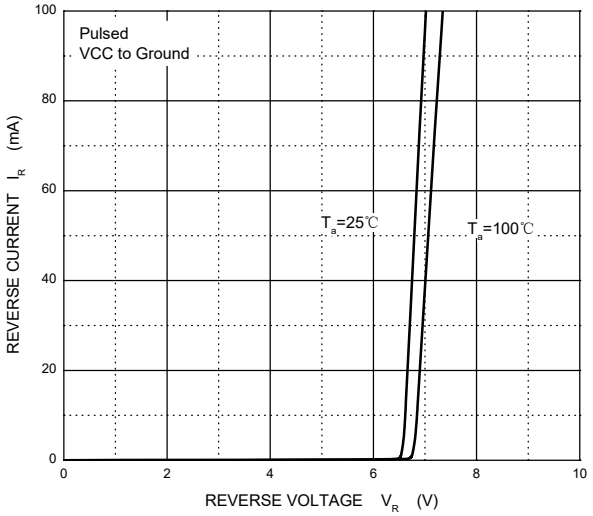
Forward Characteristics



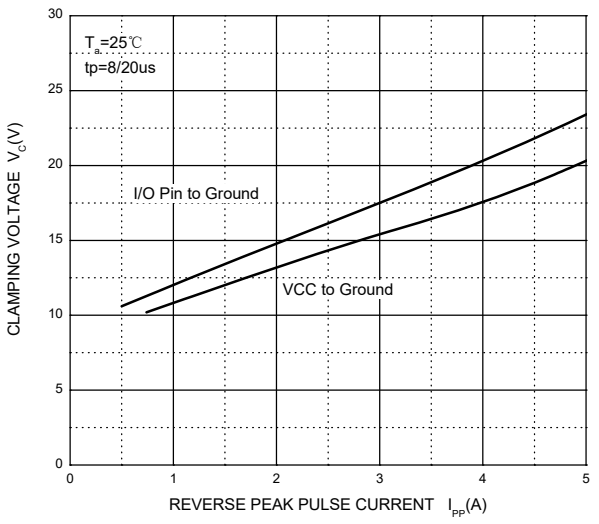
Reverse Characteristics



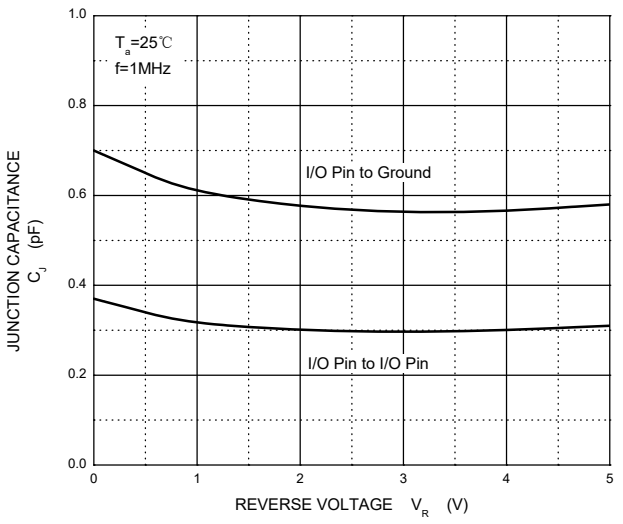
Reverse Characteristics



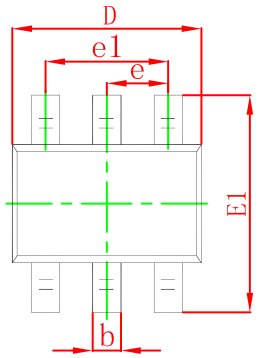
V_C —— I_{PP}

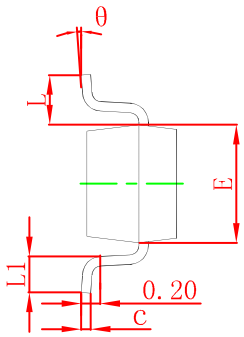


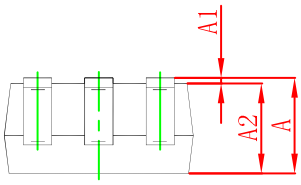
Capacitance Characteristics



SOT-363 Package Outline Dimensions







Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.100	0.150	0.004	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.400	0.085	0.094
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

Marking

Ordering information

Order code	Package	Base qty	Delivery mode
UMW ESDU5V0K4	SOT-363	3000	Tape and reel

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