STEIFPOWER TECHNOLOGY

SP**ESLC5VT143-4U**
Ultra-low Capacitance ESD Protection Diode

Features

- Uni-directional ESD protection of two lines
- Low capacitance: 0.8pF(Max)
- Low reverse stand−off voltage: 5V
- Low reverse clamping voltage
- Low leakage current
- Fast response time
- JESD22-A114-B ESD Rating of class 3B per human body model
- IEC 61000-4-2 Level 4 ESD protection

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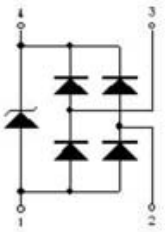


Schematic Diagram

Applications

- USB2.0 power & data line protection
- WLAN/LAN equipment
- Mobile phone
- Video line protection
- Microcontroller input Protection
- ISDN S/T Interface

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

Parameter		Symbol	Value	Unit
IEC 61000-4-2 ESD Voltage(I/O to GND & V_{CC} to GND)	Air Model	V_{ESD}(1)	±25	kV
	Contact Model		±25	
JESD22-A114-B ESD Voltage (I/O to GND & V_{CC} to GND)	Per Human Body Model		±16	
ESD Voltage(I/O to GND & V_{CC} to GND)	Machine Model		±0.4	
Peak Pulse Power		P_{PP}(2)	90	W
Peak Pulse Current		I_{PP}(2)	3.5	A
Lead Solder Temperature − Maximum (10 Second Duration)		T_L	260	℃
Junction Temperature		T_J	150	℃
Storage Temperature Range		T_{STG}	-55 to +150	℃

Note:

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

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

Electrical Characteristics per Line (T_A=25°C unless otherwise specified)

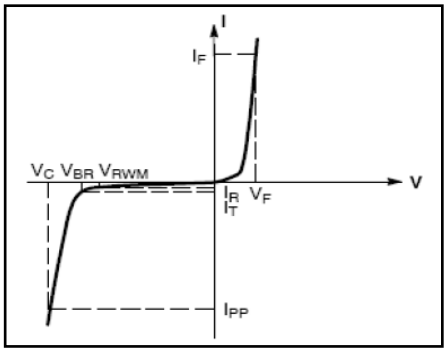
Parameter	Symbol	Test Conditions	Min	Max	Unit
Per channel(I/O to GND unless otherwise specified)					
Reverse stand off voltage	V_{RWM} (1)			5	V
Breakdown voltage	$V_{(BR)}$	I_T=1mA	6	10	V
		I_T=1mA V_{CC} to GND	5	12	V
Reverse leakage current	I_R	V_{RWM}=5V (I/O to GND & V_{CC} to GND)		1	μA
Forward voltage	V_F	I_F=10mA (I/O to GND & V_{CC} to GND)	0.4	1.5	V
Clamping voltage	V_C (2)	I_{PP}=1A (I/O to GND & V_{CC} to GND)		13	V
		I_{PP}=3.5A (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

Electrical Parameter

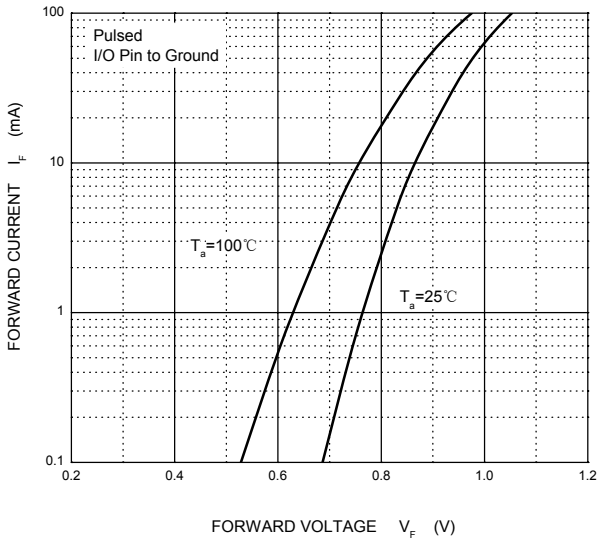
Symbol	Parameter
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Peak Pulse Current
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_R	Reverse Leakage Current @ V_{RWM}
V_{RWM}	Reverse Standoff Voltage
V_F	Forward Voltage@ I_F
I_F	Forward Current



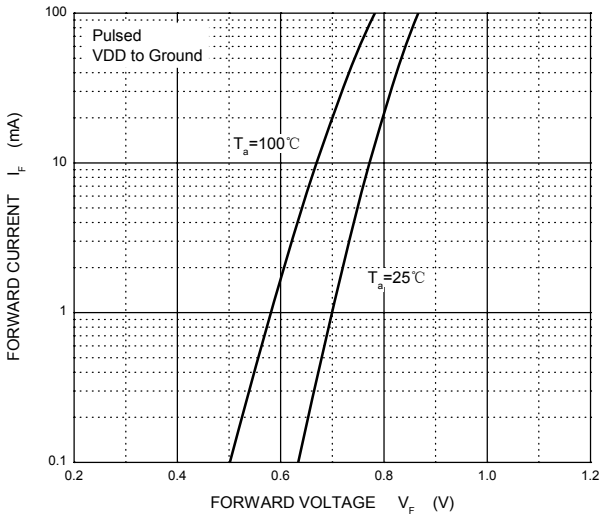
V-I characteristics for a uni-directional TVS

Typical Characteristics

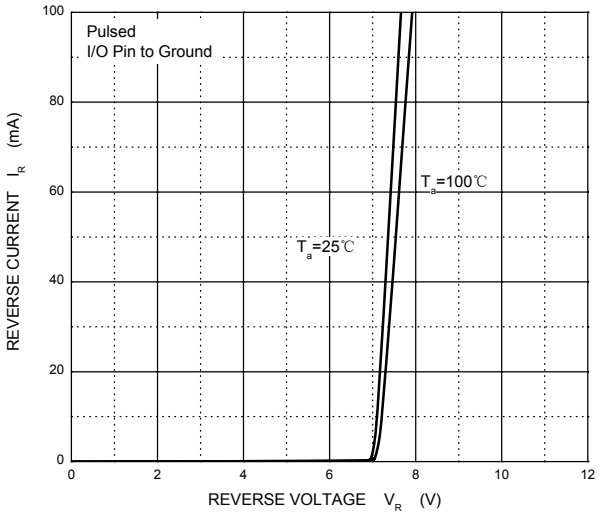
Forward Characteristics



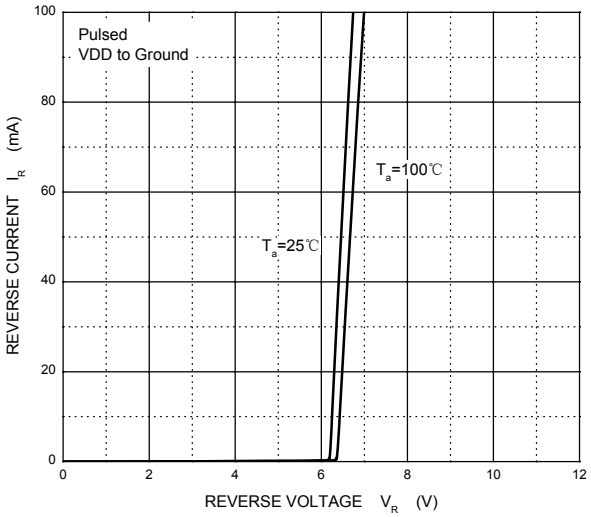
Forward Characteristics



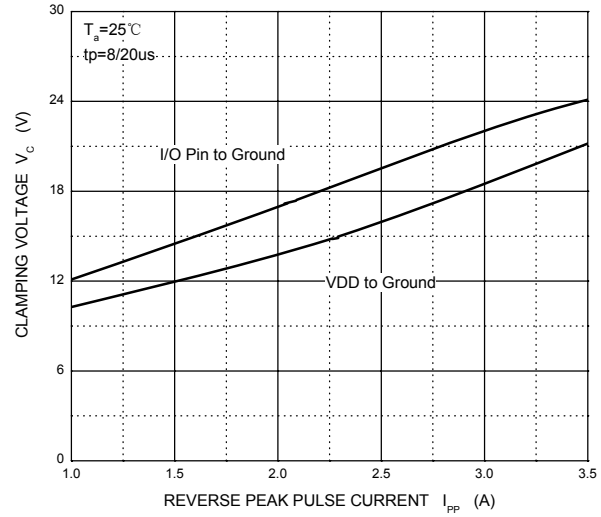
Reverse Characteristics



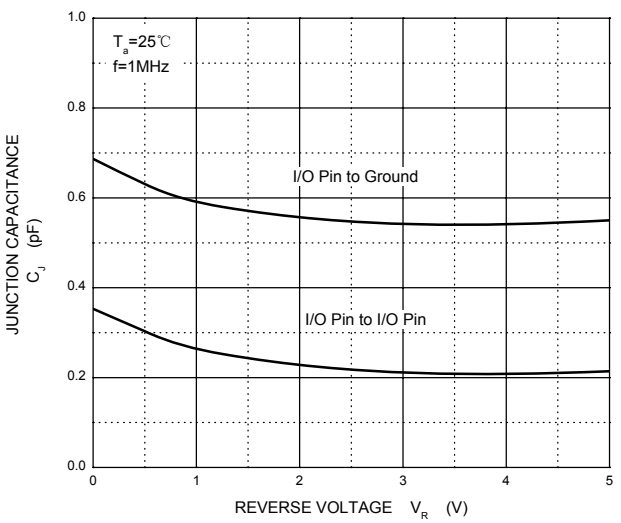
Reverse Characteristics



V_C —— I_{PP}



Capacitance Characteristics



Product Dimensions

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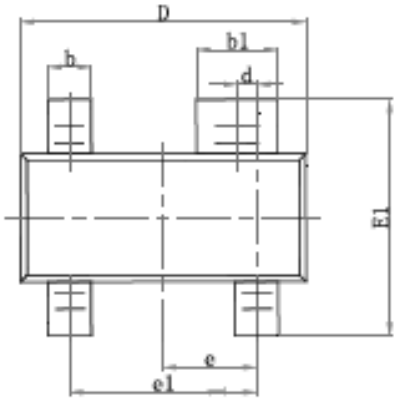
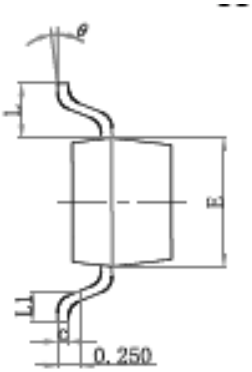
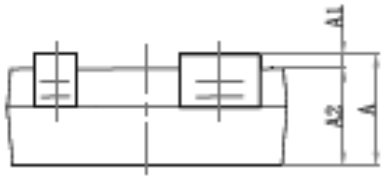
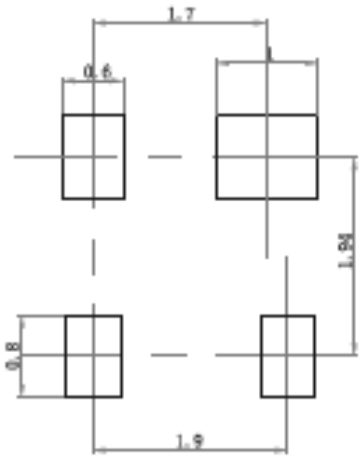






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
b1	0.750	0.900	0.030	0.035
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
d	0.200 TYP.		0.008 TYP.	
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.

Marking