

ESDULC3V3D9

Description

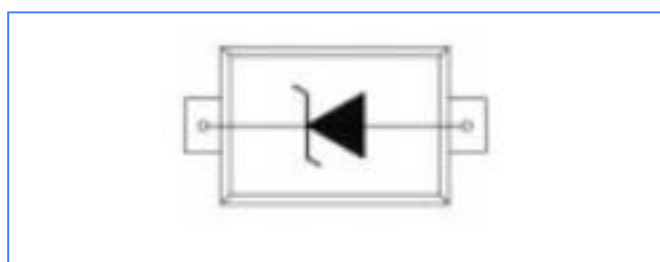
The ESDULC3V3D9 is designed to protect voltage sensitive components that require ultra-low capacitance from ESD and transient voltage events. Excellent clamping capability, low capacitance, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. Because of its low capacitance, it is suited for use in high frequency designs such as USB 2.0 high speed and antenna line applications.

Features

- Ultra low capacitance 0.5pF
- Stand-off voltage:5V
- Low leakage current
- Package: SOD-923
- Low clamping voltage
- Response time is typically<1.0ns
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 15\text{kV}$
 - Contact discharge: $\pm 8\text{kV}$



Functional Diagram



Applications

- USB 2.0
- antenna line
- Data line

Absolute Maximum Ratings(T_{amb}=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P _{PP}	150	Watts
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 15	KV
ESD per IEC 61000-4-2 (Contact)		± 10	KV
Lead Soldering Temperature	TL	260 (10 sec)	°C
Operating Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	T _{STJ}	-55 to +150	°C

Electrical Characteristics (TA = 25 °C unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				3.3	V
Reverse Breakdown Voltage	V_{BR}	$I_R = 1mA$	4.8			V
Reverse Leakage Current	I_R	$V_R = V_{RWM}$			1	μA
Clamping Voltage	V_C	@ $I_{PP}=1A$			12	V
Junction Capacitance	C_J	$V_R=0V, f = 1MHz$			0.5	pF

Characteristics Curves

Figure 1- ESD Pulse Waveform
(according to IEC 61000-4-2)

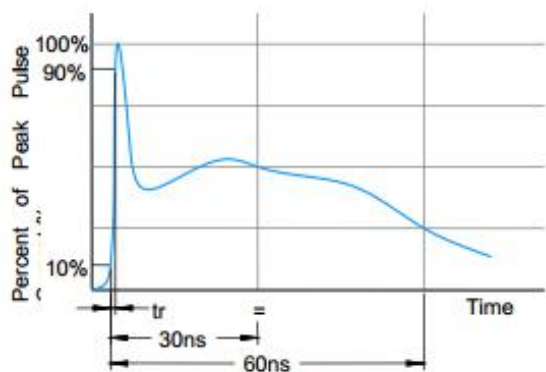


Figure 2- ESD VC Screenshot positive 8KV contact per IEC 61000-4-2

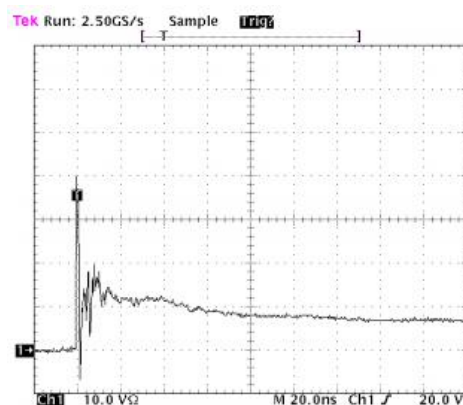
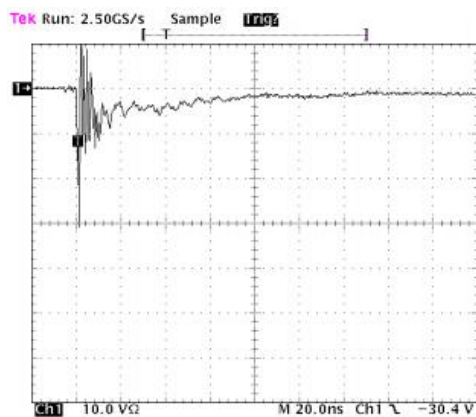
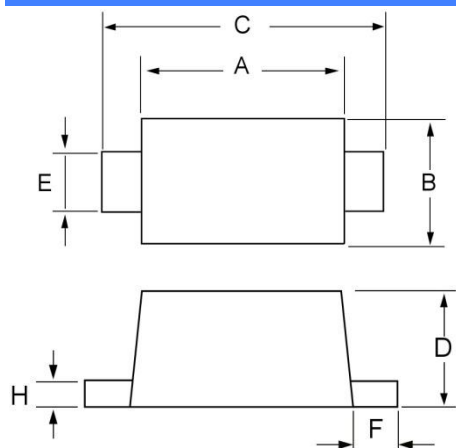
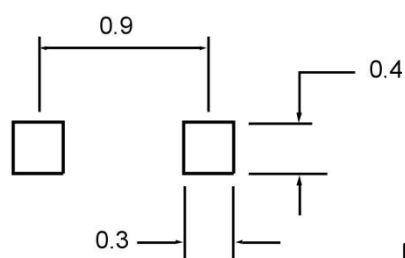


Figure3- Figure 2- ESD VC Screenshot negative 8KV contact per IEC 61000-4-2



PACKAGE OUTLINE DIMENSIONS in millimeters (inches) :


Dim	Inches		Millimeters	
	MIN	MAX	MIN	MAX
A	0.030	0.033	0.75	0.85
B	0.022	0.026	0.55	0.65
C	0.037	0.041	0.95	1.05
D	0.014	0.017	0.36	0.43
E	0.006	0.010	0.15	0.25
F	0.002	0.006	0.05	0.15
H	0.003	0.007	0.07	0.17


Mounting Pad Layout(mm)
Disclaimer

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.