

Transient Voltage Suppressors for ESD Protection

ESDXXV32D-C Series

Description

The ESDXXV32D-C is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, 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 small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space is at a premium.

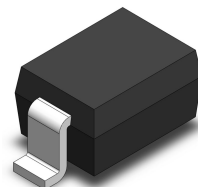
Feature

- ◆ 320 Watts Peak Pulse Power per Line ($t_p=8/20\mu s$)
- ◆ Protects one I/O or power line
- ◆ Low clamping voltage
- ◆ Working voltages: 3.3V ~ 48V
- ◆ Low leakage current
- ◆ Provides ESD protection to IEC61000-4-2(ESD):
 $\pm 15kV$ (air discharge)
 $\pm 8kV$ (contact discharge);

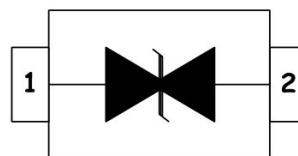
Applications

- ◆ Cell Phone Handsets and Accessories
- ◆ Microprocessor based equipment
- ◆ Personal Digital Assistants (PDA's)
- ◆ Notebooks, Desktops, and Servers
- ◆ Portable Instrumentation
- ◆ Peripherals
- ◆ Pagers

SOD-323



Functional Diagram



Mechanical Data

- ◆ SOD-323 Package
- ◆ Molding Compound Flammability Rating : UL 94V-O
- ◆ Weight 5 Milligrams (Approximate)
- ◆ Quantity Per Reel : 3,000pcs
- ◆ Reel Size : 7 inch
- ◆ Lead Finish : Lead Free

Mechanical Characteristics

Symbol	Parameter	Value	Units
P _{pp}	Peak Pulse Power ($t_p=8/20\mu s$ waveform)	320	Watts
T _J	Operating Junction Temperature Range	-55 to +150	°C
T _{STG}	Storage Temperature Range	-55 to +150	°C
T _L	Soldering Temperature, T max = 10s	260	°C

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Electrical Characteristics (@ 25°C Unless Otherwise Specified)

Part Number	Device Marking Code	Stand-Off Voltage V_{RWM} (V)	Breakdown Voltage V_{BR}	Test Current I_T (mA)	V_C @1A (Max.)	V_C		Maximum Reverse Leakage I_R @ V_{RWM} (uA)	Maximum Junction Capacitance @0 V (pF)
						(Max.)	(@A)		
ESD03V32D-C	2A	3.3	4	1.0	7	16	25	200	350
ESD05V32D-C	2B	5	6	1.0	9.8	17	24	10	260
ESD08V32D-C	2C	8	8.5	1.0	13.4	20	18	5	120
ESD12V32D-C	2D	12	13.3	1.0	19	25	13	1	110
ESD15V32D-C	2J	15	16.7	1.0	24	30	10	1	100
ESD18V32D-C	2K	18	19	1.0	28	35	8	1	90
ESD24V32D-C	2H	24	26.7	1.0	43	52	6	1	75
ESD36V32D-C	2N	36	40	1.0	60	75	4	1	35
ESD48V32D-C	2P	48	50	1.0	65	85	3	1	25

Characteristic Curves

Fig1. 8/20 μ s Pulse Waveform

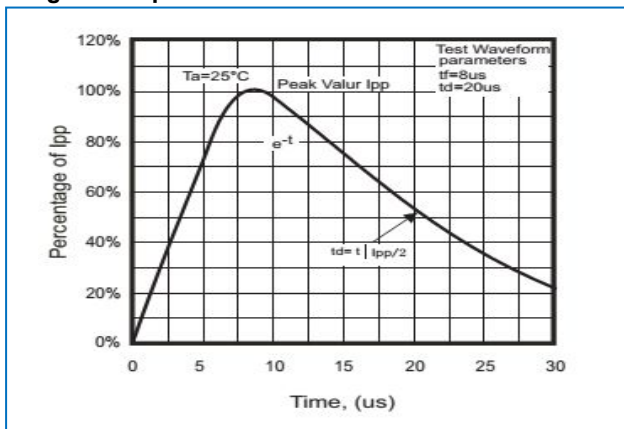


Fig2.ESD Pulse Waveform (according to IEC 61000-4-2)

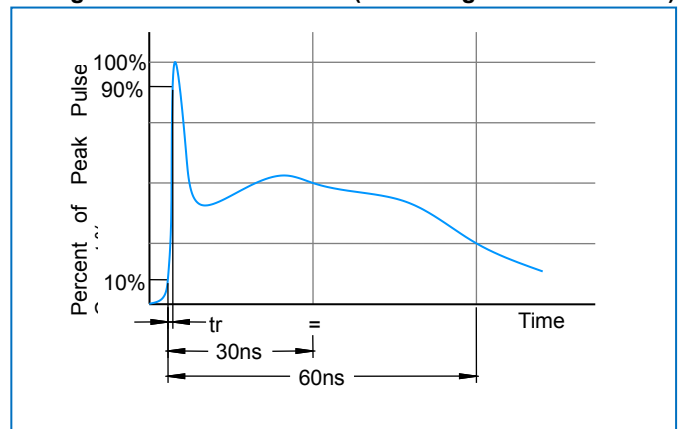


Fig3. ESD Clamping Voltage Screenshot
Positive 8 KV contact per IEC 61000-4-2

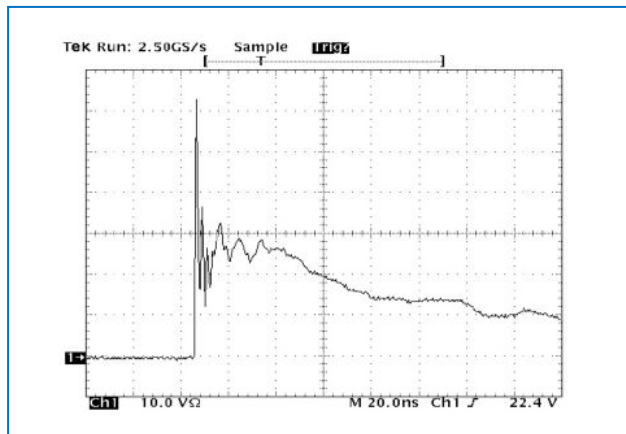
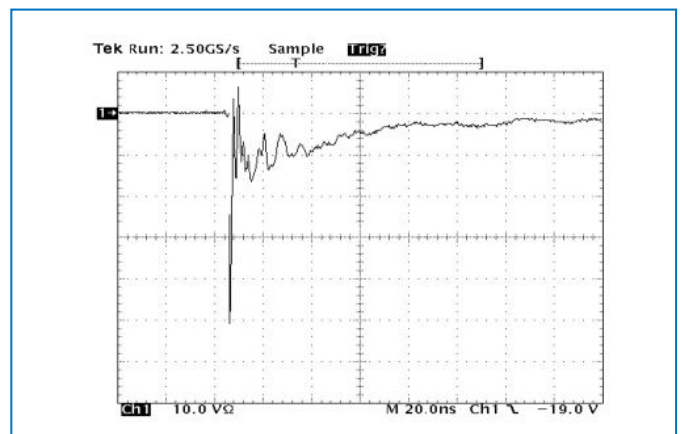


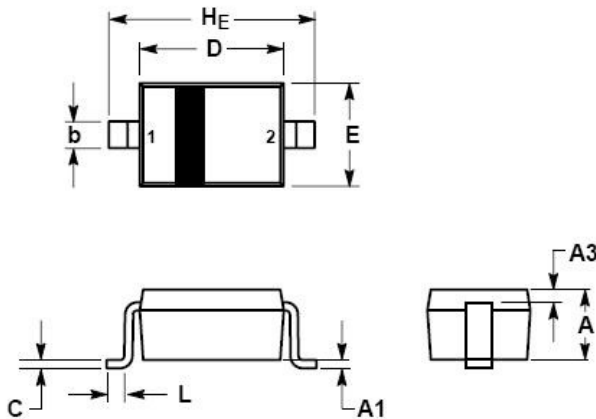
Fig4. ESD Clamping Voltage Screenshot
Negative 8 KV contact per IEC 61000-4-2



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SOD-323 Package Outline & Dimensions



DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.80	0.90	1.00	0.031	0.035	0.040
A1	0.00	0.05	0.10	0.000	0.002	0.004
A3	0.15 REF			0.006 REF		
b	0.25	0.32	0.4	0.010	0.012	0.016
C	0.089	0.12	0.177	0.003	0.005	0.007
D	1.60	1.70	1.80	0.062	0.066	0.070
E	1.15	1.25	1.35	0.045	0.049	0.053
L	0.08			0.003		
HE	2.30	2.50	2.70	0.090	0.098	0.105

* SOLDERING FOOTPRINT

