Transient Voltage Suppressors for ESD Protection

Low Capacitance

ESDXXV32D-LC Series

Description

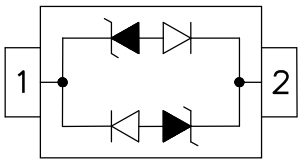
The ESDXXV32D-LC is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. Because of its small size, ultra-low capacitance values , it is very suitable for signal port and board space speed transmission is very small places, such as Ethernet, mobile phones , MP3 players, digital cameras and other portable.

SOD-323

Feature

- 350 Watts Peak Pulse Power per Line (tp=8/20μs)
- Protects one I/O line (bidirectional)
- Low clamping voltage
- Working voltages: 3V, 5V, 8V, 12V, 15V, 24V
- Low leakage current
- IEC61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ηs)
- IEC61000-4-5 (Lightning) 12A (8/20μs)

Functional Diagram



Applications

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

Mechanical Characteristics

- JEDEC SOD-323 Package
- Molding Compound Flammability Rating : UL 94V-0
- Weight 5.0 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 (tp=8/20μs waveform)**	350	W
T_L	**Lead Soldering Temperature**	260 (10sec)	ºC
T_{STG}	**Storage Temperature Range**	-55 to +150	ºC
T_J	**Operating Temperature Range**	-55 to +150	ºC
	IEC61000-4-2 (ESD) **Air Discharge** **Contact Discharge**	±15 ±8	KV
	IEC61000-4-4 (EFT)	40	A
	IEC61000-4-5 (Lightning)	12	A

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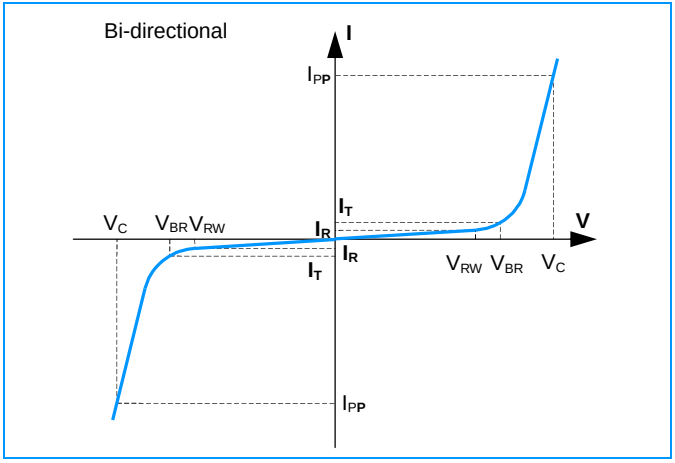
I-V Curve Characteristics

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse leakage Current @ V_{RWM}
I_T	Test Current
V_B	Breakdown Voltage @ I_T



Electrical Characteristics (@ 25℃ Unless Otherwise Specified)

Part Number	Device Marking	V_{RWM} (V) (Max.)	V_B (V) (Min.)	I_T (mA)	V_C @1A (Max.)	V_C		I_R (μA) (Max.)	C (pF) (Typ.)
						(Max.)	(@A)		
ESD03V32D-LC	CC	3.0	4.0	1	5.15	13.9	8	20	1.2
ESD05V32D-LC	AC	5.0	6.0	1	9.80	18.3	8	5	1.2
ESD08V32D-LC	BC	8.0	8.5	1	13.40	18.5	8	2	1.2
ESD12V32D-LC	DC	12.0	13.3	1	19.00	28.6	6	1	1.2
ESD15V32D-LC	EC	15.0	16.7	1	24.00	31.8	5	1	1.2
ESD24V32D-LC	HC	24.0	26.7	1	43.00	56.0	3	1	1.2

Characteristic Curves

Fig1. 8/20μs Pulse Waveform

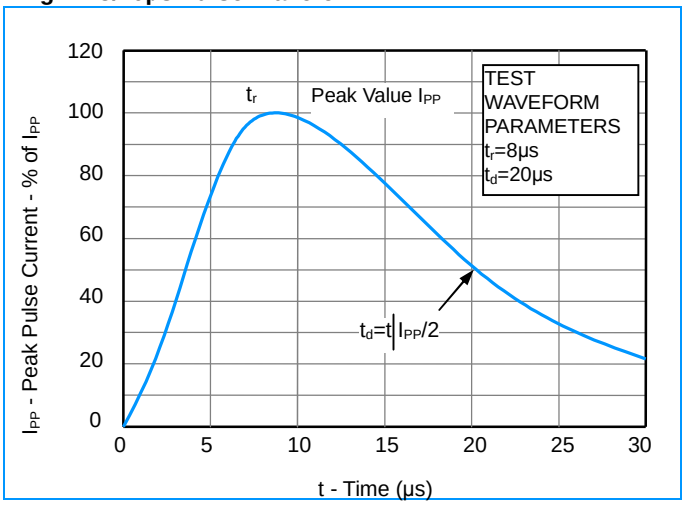
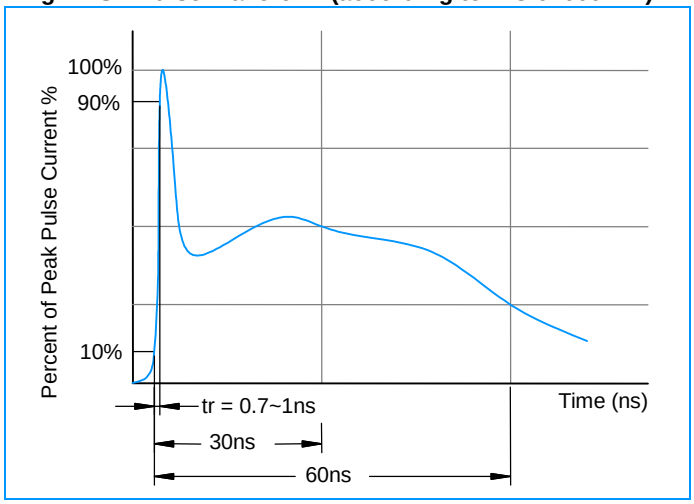


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)



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Characteristic Curves

Fig3. ESD Clamping (+8KV Contac per IEC61000-4-2)

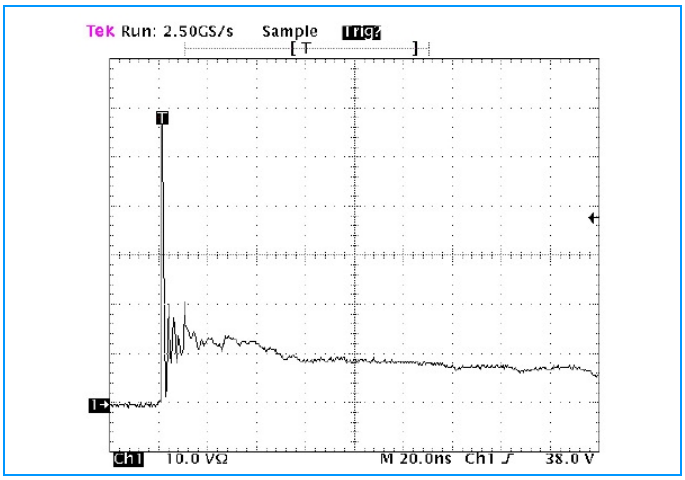
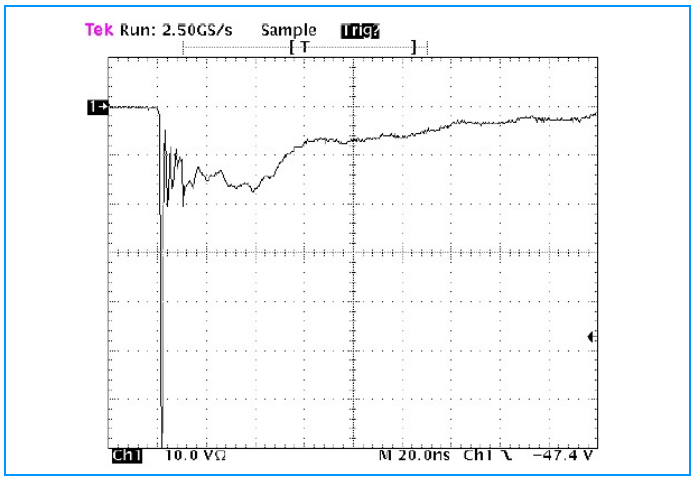
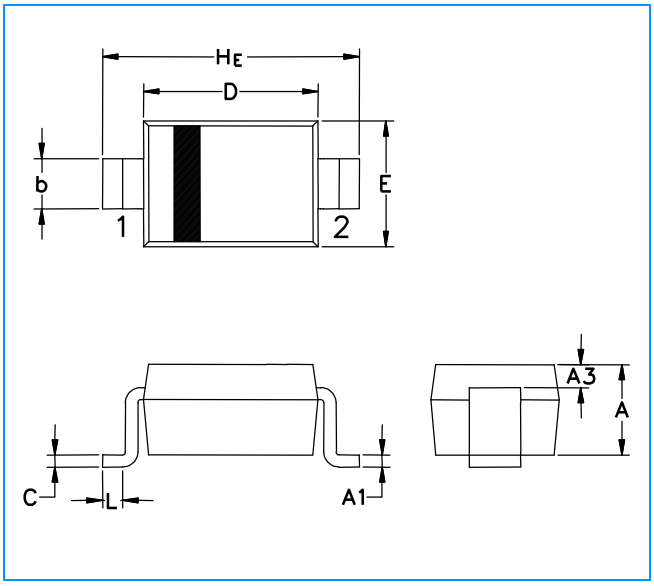


Fig4. ESD Clamping (-8KV Contac per IEC61000-4-2)

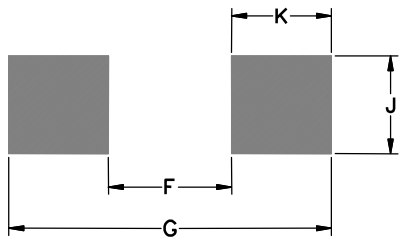


SOD-323 Package Outline & Dimensions



Symbol	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	0.40	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		
H_E	2.30	2.50	2.70	0.090	0.098	0.105

Soldering Footprint



Symbol	Millimeters	Inches
F	1.60	0.063
G	2.85	0.112
J	0.83	0.033
K	0.63	0.025