Transient Voltage Suppressors for ESD Protection

ESD05V32D-LCD

Description

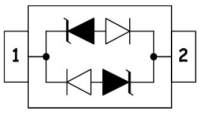
The ESD05V32D-LCD is low capacitance TVS arrays designed to protect high speed data interfaces. This series has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from over-voltage caused by ESD (electrostatic discharge), CDE (Cable Discharge Events), and EFT (electrical fast transients).

SOD-323

Feature

- 250 Watts Peak Pulse Power per Line (tp=8/20μs)
- Protects One Bidirectional I/O line
- Low clamping voltage
- Working voltages : 5.0V
- Low leakage current
- IEC61000-4-2(ESD):±30kV (air discharge)
  ±30kV (contact discharge);
- IEC61000-4-4 (EFT) 40A (5/50 η s)

Functional Diagram



Applications

- Ethernet - 10/100/1000 Base T
- Cellular Phones
- I 2 C Bus Protection
- Parallel & Serial Port Protection
- Personal Digital Assistant (PDA)
- Microcontroller Input Protection
- ISDN S/T Interface
- WAN/LAN Equipment

Mechanical Data

- JEDEC SOD-323 Package
- Molding Compound Flammability Rating : UL 94V-O
- Weight 5.0 Millgrams (Approximate)
- Quantity Per Reel : 3,000pcs
- Reel Size : 7 inch
- Lead Finish : Lead Free
- Device Marking: CA5

Mechanical Characteristics

Symbol	Parameter	Value	Units
Ppp	**Peak Pulse Power (tp=8/20μs waveform)**	250	Watts
T_J	**Operating Junction Temperature Range**	-55 to +150	ºC
T_{STG}	**Storage Temperature Range**	-55 to +150	ºC
T_L	**Soldering Temperature, T max = 10s**	260	ºC

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Electrical Characteristics (@ 25℃ Unless Otherwise Specified)

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Reverse Working Voltage	V_{RWM}	--	--	--	5.0	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	6.0	--	--	V
Reverse Leakage Current	I_R	V_{RWM} =5.0V ; T=25°C	--	--	0.05	μA
Junction capacitance	C_J	I/O To I/O;V_R =0V , f=1MHz ;	--	1	--	pF
Positive Clamping Voltage	V_C	I_{PP} =1A , T_P =8/20μS ;	--	--	9.8	V
		I_{PP} =12A , T_P =8/20μS ;	--	--	21	

Characteristic Curves

Fig1. 8/20μs Pulse Waveform

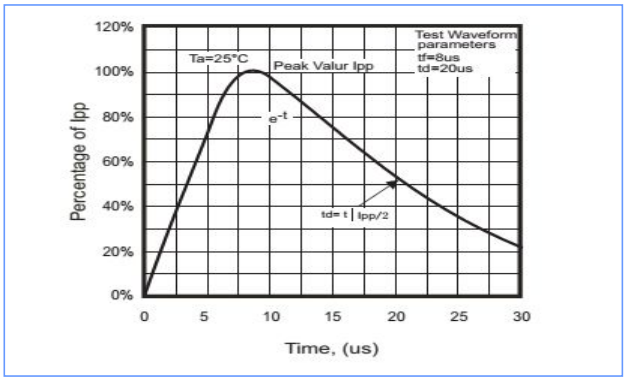


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

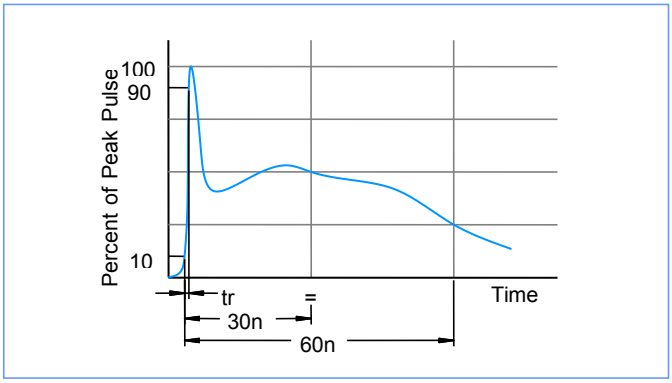


Fig3. ESD Clamping Volatge & Peak Pulse Curerent

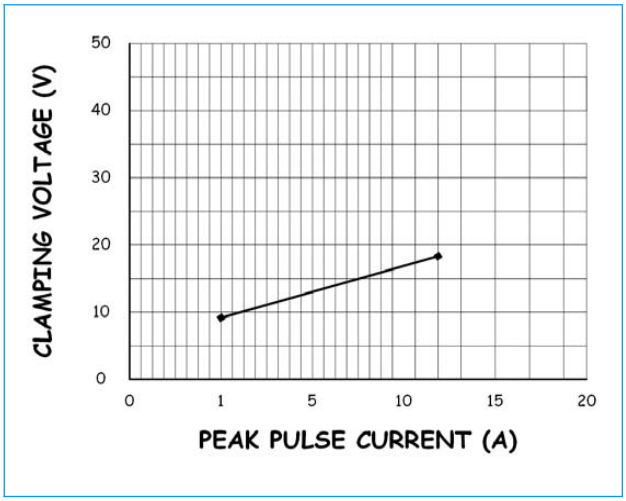
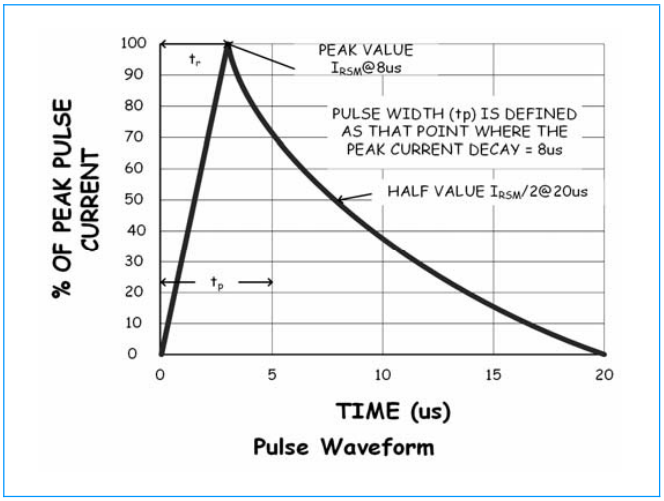


Fig4. Pulse Waveform



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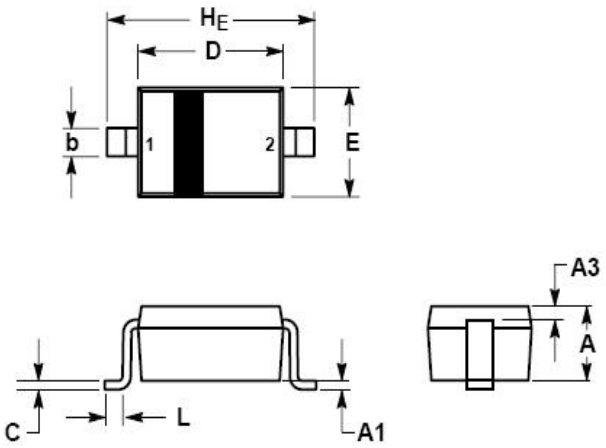
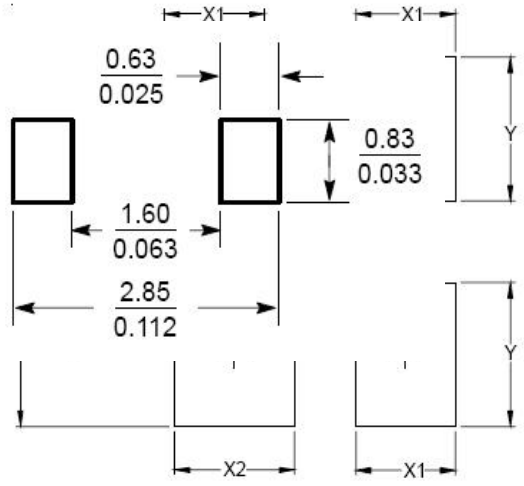
SOD-323 Package Outline & Dimensions



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		
H_E	2.30	2.50	2.70	0.090	0.098	0.105

* SOLDERING FOOTPRINT



DIMENSIONS		
DIM	INCHES	MILLIMETERS
C	(.087)	(2.20)
E1	.076	1.92
E2	.068	1.72
G	.031	0.80
X1	.039	1.00
X2	.047	1.20
Y	.055	1.40
Z	.141	3.60