

Transient Voltage Suppressors for ESD Protection

ESD03V32D-LCD

Description

The ESD03V32D-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).

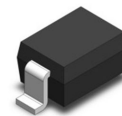
Feature

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

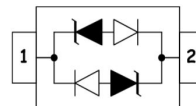
Applications

- ◆ Ethernet - 10/100/1000 Base T
- ◆ Cellular Phones
- ◆ I²C Bus Protection
- ◆ Parallel & Serial Port Protection
- ◆ Personal Digital Assistant (PDA)
- ◆ Microcontroller Input Protection
- ◆ ISDN S/T Interface
- ◆ WAN/LAN Equipment

SOD-323



Functional Diagram



Mechanical Data

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

Mechanical Characteristics

Symbol	Parameter	Value	Units
P _{pp}	Peak Pulse Power ($t_p=8/20\mu s$ waveform)	250	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)

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	$V_{RWM}=2.8V$; $T=25^\circ C$	--	--	0.05	μA
Junction capacitance	C_J	I/O To I/O; $V_R=0V$, $f=1MHz$;	--	1	--	pF
Positive Clamping Voltage	V_C	$I_{PP}=1A$, $T_P=8/20\mu S$;	--	--	9.8	V
		$I_{PP}=12A$, $T_P=8/20\mu S$;	--	--	21	

Characteristic Curves

Fig1. 8/20 μs Pulse Waveform

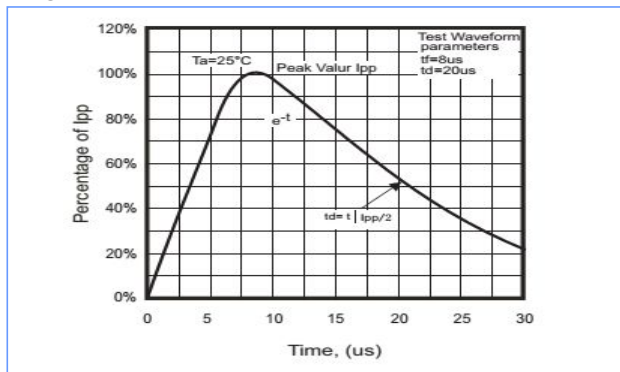


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

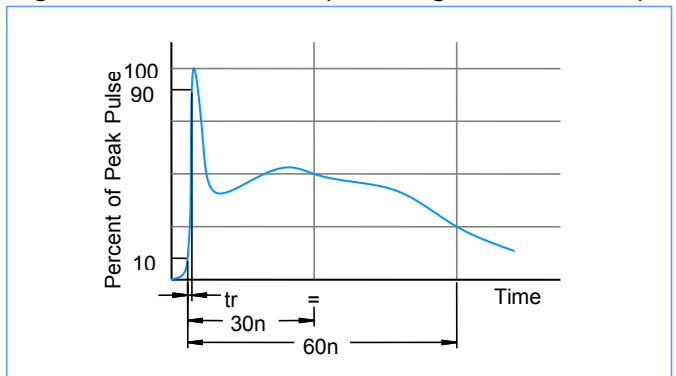


Fig3. ESD Clamping Voltage & Peak Pulse Current

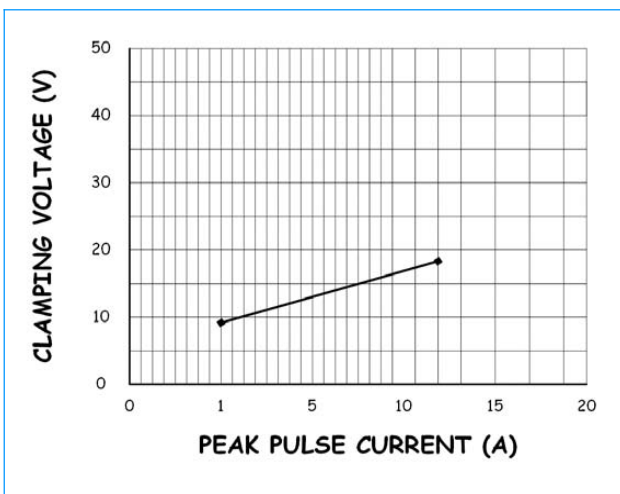
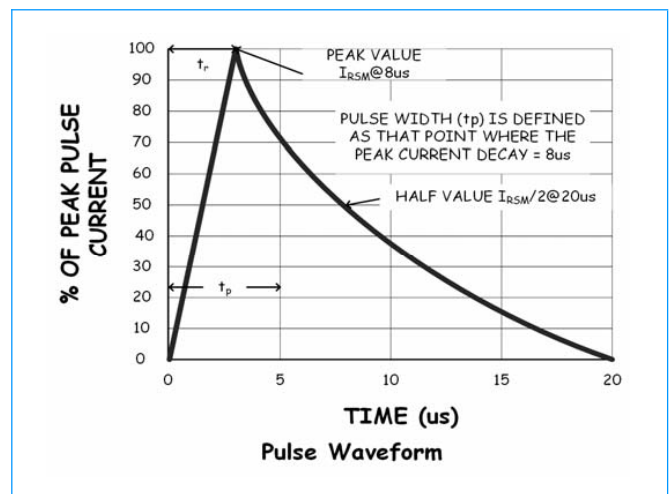


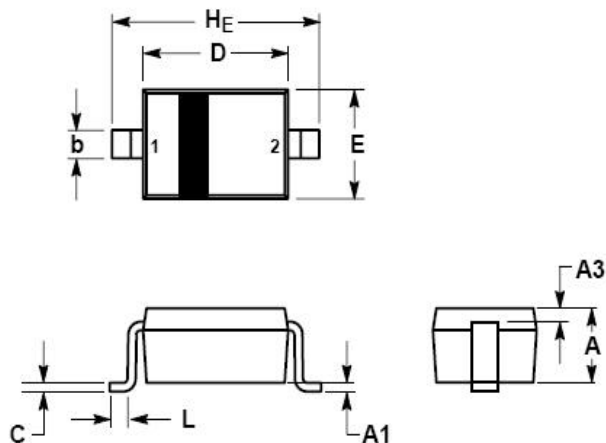
Fig4. Pulse Waveform



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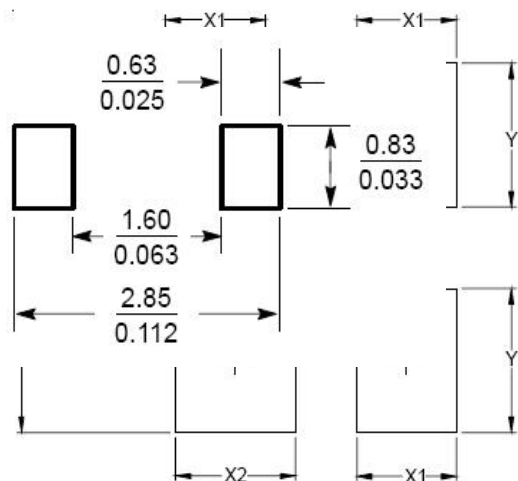
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SOD-323 Packaging Outline & Dimensions



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