

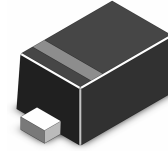
Transient Voltage Suppressors for ESD Protection

ESDXXV52D-A Series

Description

The ESDXXV52D-A 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.

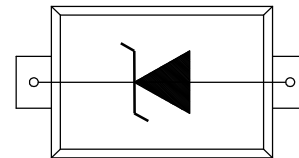
SOD-523



Feature

- u 120 Watts Peak Pulse Power per Line (tp=8/20µs)
- u Protects one I/O line
- u Low clamping voltage
- u Working voltages : 3.3V, 5V, 8V, 12V, 15V and 24V
- u Low leakage current
- u IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- u IEC61000-4-4 (EFT) 40A (5/50ns)

Functional Diagram



Applications

- u Cellular Handsets and Accessories
- u Portable Electronics
- u Industrial Controls
- u Set-Top Box
- u Instrumentation
- u Servers, Notebook, and Desktop PC
- u Display Ports

Mechanical Characteristics

- u SOD-523 Package
- u Molding Compound Flammability Rating : UL 94V-0
- u Weight 2 Milligrams (Approximate)
- u Quantity Per Reel : 3,000pcs
- u Reel Size : 7 inch
- u Lead Finish : Lead Free

Mechanical Characteristics

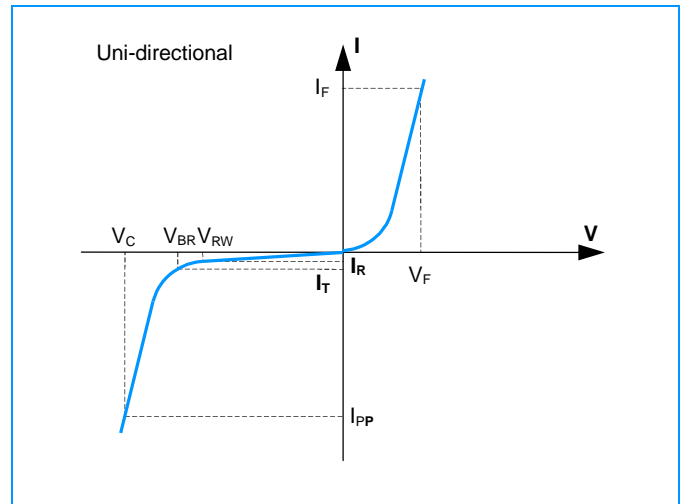
Symbol	Parameter	Value	Units
PPP	Peak Pulse Power (tp=8/20µs waveform)	120	W
TL	Lead Soldering Temperature	260 (10sec)	°C
TSTG	Storage Temperature Range	-55 to +150	°C
TJ	Operating Temperature Range	-55 to +150	°C
	IEC61000-4-2 (ESD)		
	Air Discharge	±30	KV
	Contact Discharge	±30	
	IEC61000-4-4 (EFT)	40	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
I_F	Forward Current
V_F	Forward Voltage @ I_F
P_{PK}	Peak Power Dissipation
C	Max Capacitance @ $V_R=0V$ & $f=1MHz$



Electrical Characteristics (@ 25°C 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)		
ESD3.3V52D-A	ZD	3.3	4	1	6.5	14.1	11.2	200	200
ESD05V52D-A	KE	5	6	1	9	18.6	9.4	5	110
ESD08V52D-A	ZE	8	8.5	1	13	19.5	8.8	5	70
ESD12V52D-A	ZM	12	13.3	1	15	17	5	1	60
ESD15V52D-A	KP	15	16.6	1	20	22	5	1	50
ESD24V52D-A	KR	24	26.7	1	30	32	5	1	25

Characteristic Curves

Fig1. 8/20 μs Pulse Waveform

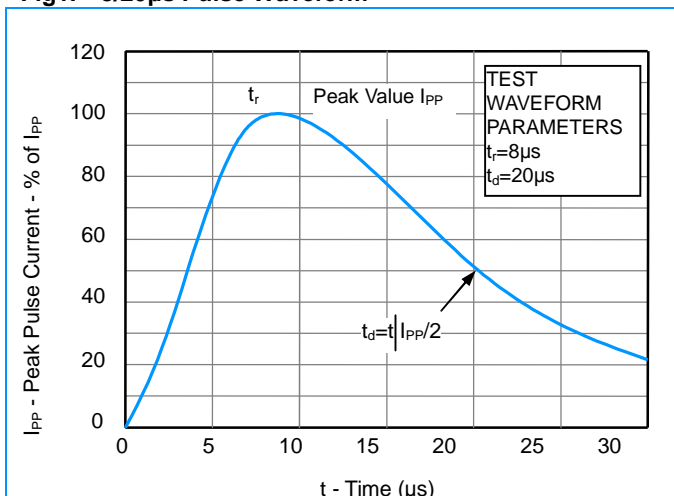
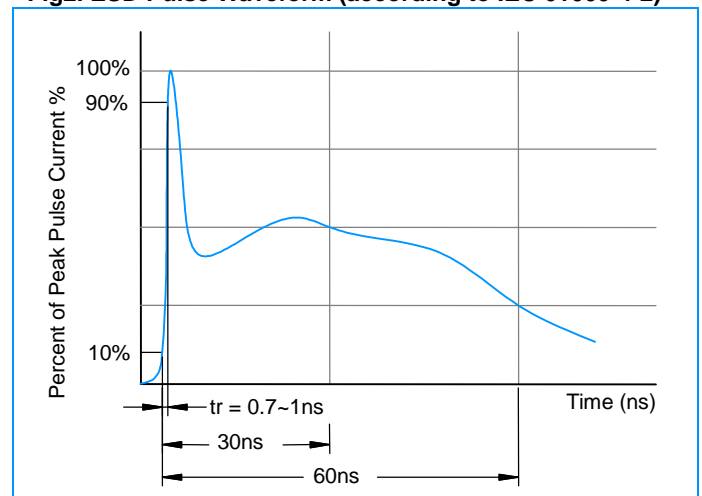


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)



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Characteristic Curves

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

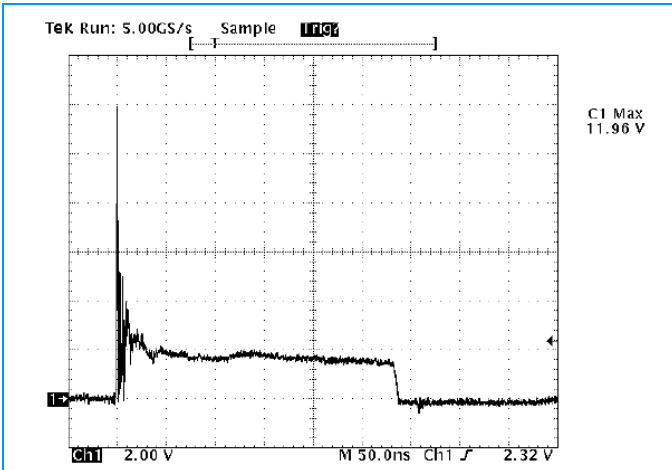
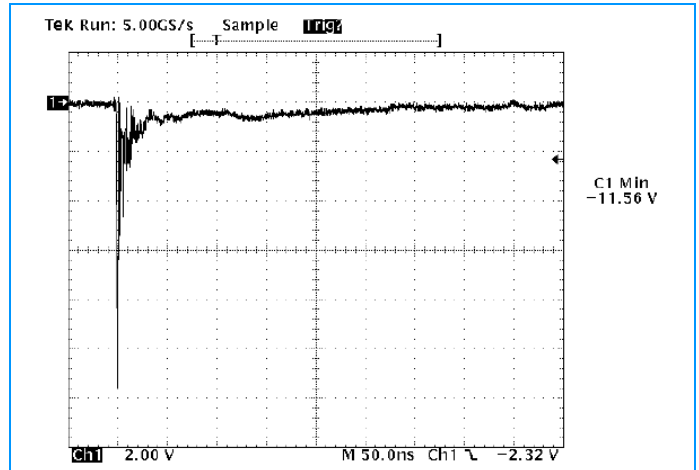
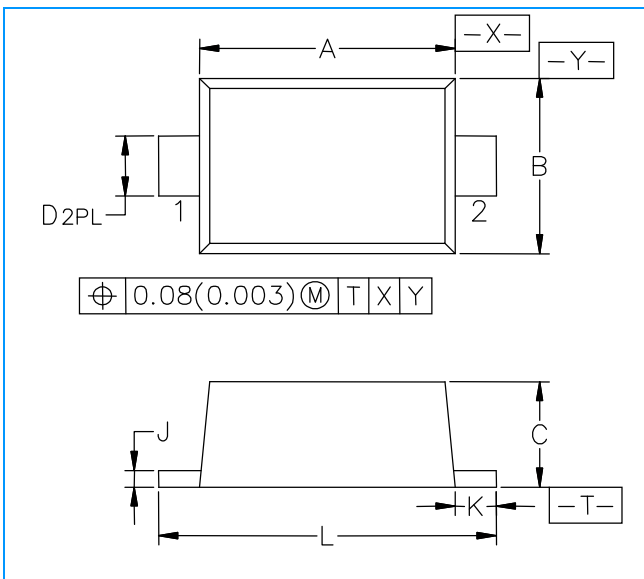


Fig4. ESD Clamping (-8KV Contac per IEC61000-4-2)

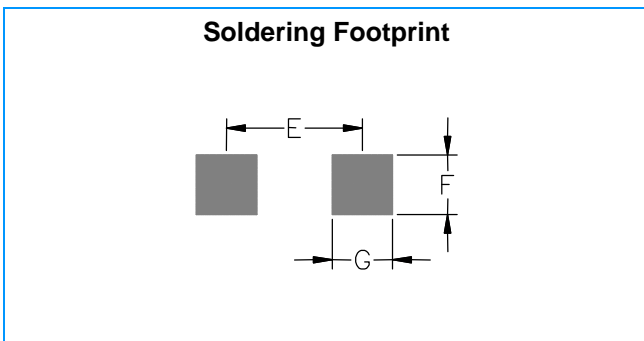


SOD-523 Package Outline & Dimensions



Symbol	Millimeters			Inches		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	1.10	1.20	1.30	0.043	0.047	0.051
B	0.70	0.80	0.90	0.028	0.032	0.035
C	0.50	0.60	0.70	0.020	0.024	0.028
D	0.25	0.30	0.35	0.010	0.012	0.014
J	0.07	0.14	0.20	0.0028	0.0055	0.0079
K	0.15	0.20	0.25	0.006	0.008	0.010
S	1.50	1.60	1.70	0.059	0.063	0.067

Soldering Footprint



Symbol	Millimeters	Inches
E	1.40	0.0547
F	0.40	0.0157
G	0.40	0.0157