

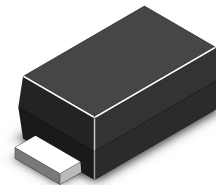
Transient Voltage Suppressors for ESD Protection

ESDXXV92D-C Series

Description

The ESDXXV92D-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.

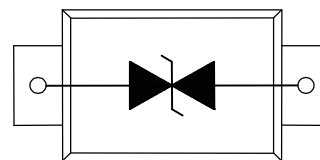
SOD-923



Feature

- u Small body outline dimensions
- u Low body height
- u Peak power up to 150 watts @ 8×20 μs Pulse
- u Low leakage current
- u Response time is typically < 1 ns
- u IEC61000-4-2 Level 4 15 kV (air discharge)
8 kV(contact discharge)
- u MIL STD 883E - Method 3015-7 Class 3
25 kV HBM (Human Body Model)

Functional Diagram



Applications

- u Cellular Phones
- u Portable Devices
- u Digital Cameras
- u Power Supplies

Mechanical Characteristics

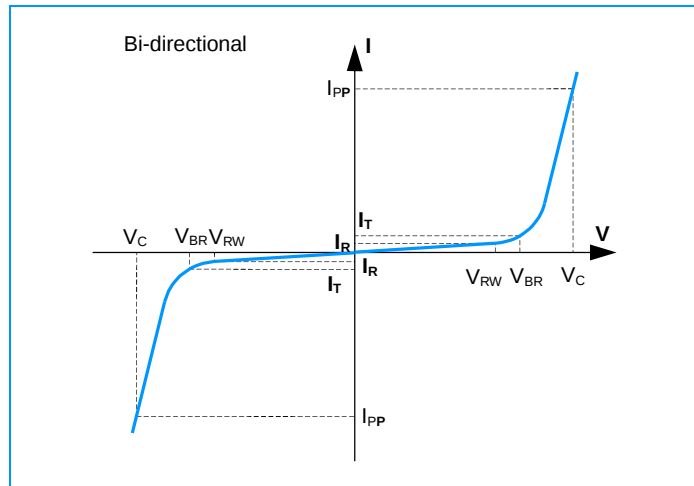
Symbol	Parameter	Value	Units
P _{PP}	Peak Pulse Power (tp=8/20μs waveform)	150	W
T _L	Maximum lead temperature for soldering during 10s	260	°C
T _{STG}	Storage Temperature Range	-55 to +155	°C
T _{OP}	Operating Temperature Range	-40 to +125	°C
T _J	Maximum junction temperature	150	°C
	IEC61000-4-2 (ESD)	Air Discharge	±15
		Contact Discharge	±8
	ESD Voltage	Per Human Body Model	25
		Per Machine Model	400
			KV
			V

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Electrical Parameter

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_{BR}	Breakdown Voltage @ I_T

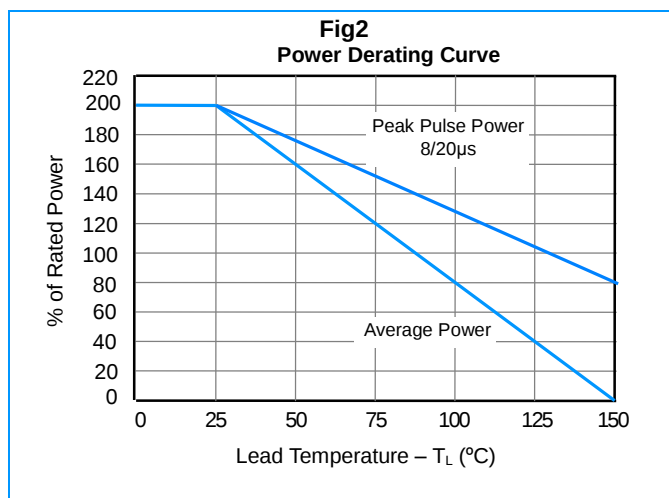
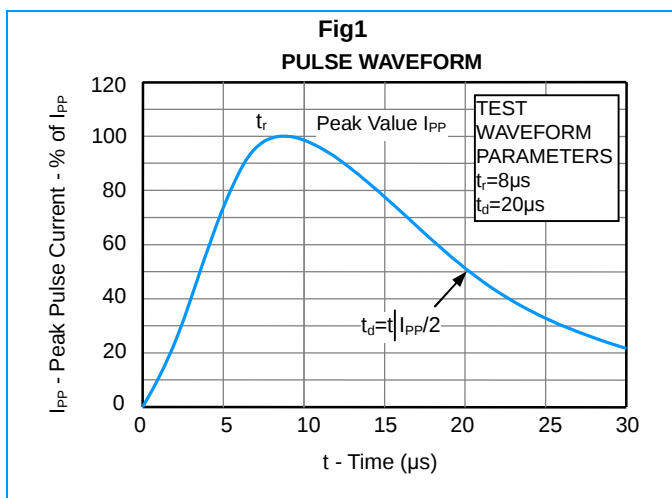


Electrical Characteristics (Ratings at 25 °C ambient temperature unless otherwise specified VF=0.9v at IF=10mA)

Part Number	V_{BR}			I_R	V_{RWM}	I_R	V_C	C
	Min.	Typ.	Max.					
	V	V	V					Typ. 0V bias
ESD3.3V92D-C	5.1	6.0	6.8	1	3.3	1	14.1	25
ESD05V92D-C	5.6	6.7	7.8	1	5.0	1	18.6	15

*Surge current waveform per Figure 1.

1. V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25 °C.



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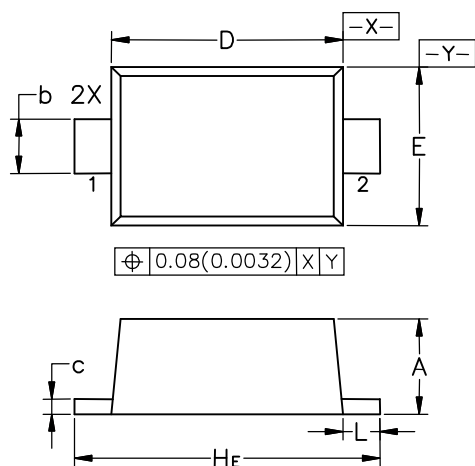
Application Note

Electrostatic discharge (ESD) is a major cause of failure in electronic systems. Transient Voltage Suppressors (TVS) are an ideal choice for ESD protection. They are capable of clamping the incoming transient to a low enough level such that damage to the protected semiconductor is prevented.

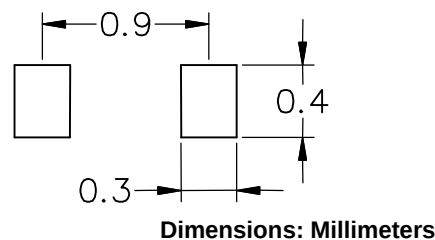
Surface mount TVS offers the best choice for minimal lead inductance. They serve as parallel protection elements, connected between the signal lines to ground. As the transient rises above the operating voltage of the device, the TVS becomes a low impedance path diverting the transient current to ground. The ESD9DXXCA is the ideal board level protection of ESD sensitive semiconductor components.

The tiny SOD-923 package allows design flexibility in the design of high density boards where the space saving is at a premium. This enables to shorten the routing and contributes to hardening against ESD.

SOD-923 Mechanical Data



Soldering Footprint



Dim	Millimeters			Inches		
	Min	Nom	Max	Min	Nom	Max
A	0.36	0.40	0.43	0.014	0.016	0.017
b	0.15	0.20	0.25	0.006	0.008	0.010
c	0.07	0.12	0.17	0.003	0.005	0.007
D	0.75	0.80	0.85	0.030	0.031	0.033
E	0.55	0.60	0.65	0.022	0.024	0.026
H _E	0.95	1.00	1.05	0.037	0.039	0.041
L	0.05	0.10	0.15	0.002	0.004	0.006