WEITRON

ESD9DXXC Series

BI-Directional TVS for ESD Protection

Lead(Pb)-Free

TRANSIENT VOLTAGE SUPPRESSORS
150 WATTS
3.3-5.0 VOLTS



SOD-923

General Description:

The ESD9DXXC Series 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, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space is at a premium.

Applications:

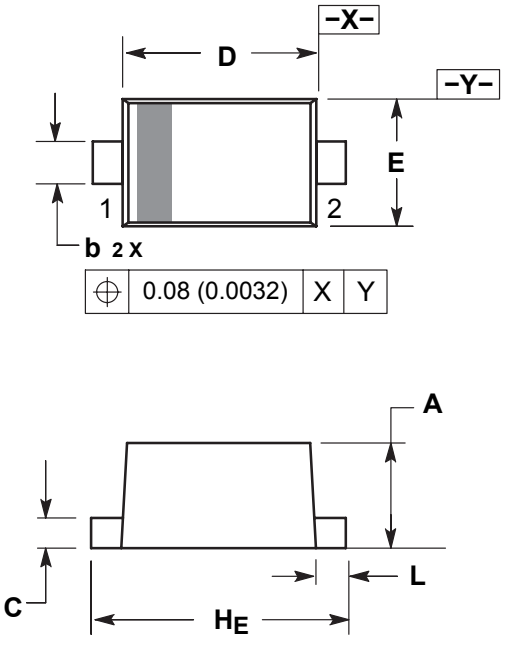
*Cellular phones
*Portable devices
*Digital cameras
*Power supplies

Features:

*Small Body Outline Dimensions
*Low Body Height
*Peak Power up to 150 Watts @ 8 x 20 μs Pulse
*Low Leakage current
*Response Time is Typically < 1 ns
*ESD Rating of Class 3 (> 16 kV) per Human Body Model
*IEC61000−4−2 Level 4 ESD Protection
*IEC61000−4−4 Level 4 EFT Protection

SOD-923 Outline Dimensions

Unit:mm



MILLIMETERS			
DIM	MIN	NOM	MAX
A	0.36	0.40	0.43
b	0.15	0.20	0.25
c	0.07	0.12	0.17
D	0.75	0.80	0.85
E	0.55	0.60	0.65
H_E	0.95	1.00	1.05
L	0.05	0.10	0.15

Maximum Ratings(T_A=25˚C Unless Otherwise Noted)

Characteristic	Symbol	Value	Unit
Peak Pulse Power (tp = 8/20 μs)	P_{PP}	150	W
IEC61000-4-2(ESD) air discharge contact discharge		±15 ±8	KV
IEC61000-4-2(EFT)		40	A
ESD Voltage Per Human Body Model		16	KV
Maximum Lead Temperature and Soldering during 10s	T_L	260	℃
Maximum Junction Temperature	T_J	150	℃
Operating Temperature Range	T_{op}	-40 to 125	℃
Storage Temperature Range	T_{stg}	-55 to +155	℃

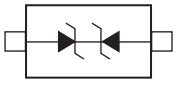
Electrical Characteristics Rating at 25°C ambient temperature unless otherwise specified.VF = 0.9V at IF 10mA

Device	Marking	V_{RWM} (V)	I_R (μA) @ V_{RWM}	V_{BR} (V) @ I_T (Note 1)		I_T	V_C (V)(Note 1) @ I_{PP} = 5.0 A*	V_C (V)(Note 1) @ Max I_{PP} *	I_{PP} (A)*	P_{pk} (W)*	C (pF)
		Max	Max	Min	Max	mA	Typ	Max	Max	Max	Typ
ESD9D3.3C	B	3.3	1.0	5.0	7.0	1.0	8.4	14.1	11.2	158	25
ESD9D5.0C	C	5.0	1.0	5.6	8.0	1.0	11.6	18.6	9.4	174	15

Note *Surge current waveform per Fig.1

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

Eqivalent Circuit Diagram

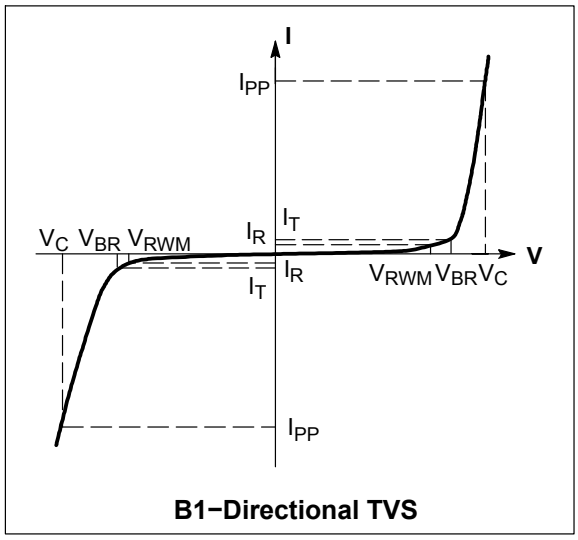


SOD-923
(Top View)

We declare that the material of product compliance with RoHS requirements.

Typical Characteristics (T_A = 25°C unless otherwise noted)

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}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current



B1−Directional TVS

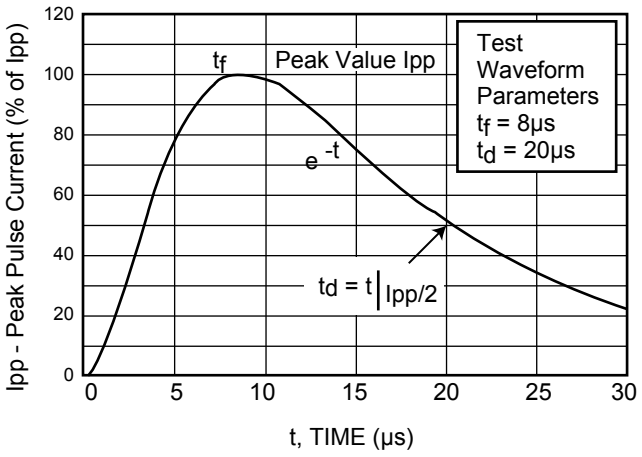


Fig1. Pulse Waveform

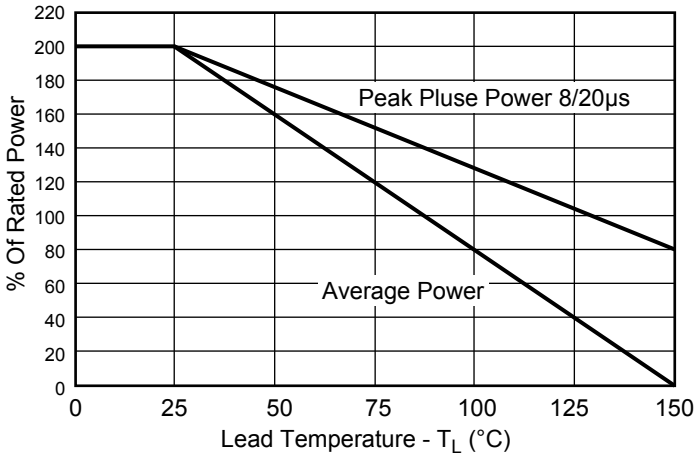


Fig2.Power Derating Curve

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 ESD9DXXC Series is the ideal board evel 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.