JKSEMI
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ESD9DxxC BIDIRECTIONAL TVS DIODE

DESCRIPTION

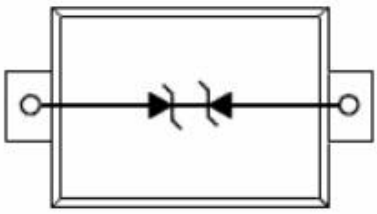
The The ESD9DxxC is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space is at a premium.

SOD-923

APPLICATIONS

- ✧ Cellular phones.
- ✧ Portable devices.
- ✧ Digital cameras.
- ✧ Power supplies.

PIN CONFIGURATION



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.

COMPLIES WITH THE FLLOWING STANDARDS

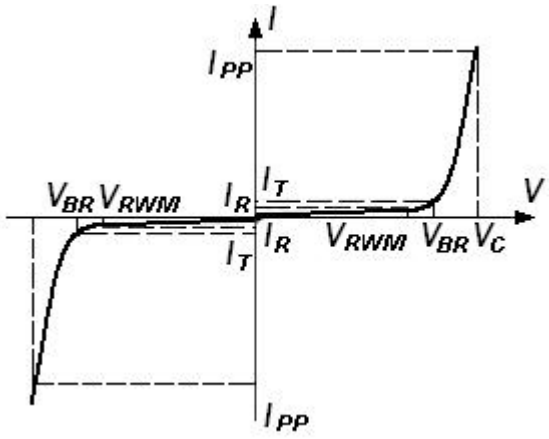
- ✧ IEC61000-4-2.
- ✧ Level 4 15 kV (air discharge)
  8 kV(contact discharge) .
- ✧ MIL STD 883E - Method 3015-7 Class 3
  25 kV HBM (Human Body Model) .

DEVICE CHARACTERISTICS

Absolute Ratings (Tamb=25°C)			
Symbol	**Parameter**	**Value**	**Units**
P_{pp}	Peak Pulse Power (t_P= 8/20μs)	150	W
T_L	Maximum lead temperature for soldering dunng 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) contact discharge	±15 ±8	kV
	IEC61000-4-4 (EFT)	40	A
	ESD Voltage Per Human Body Model	25	kV
	Per Machine Model	400	V

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
I_T	Test Current
V_{BR}	Breakdown Voltage @ I_T



ELECTRICAL CHARACTERISTICS

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

Part Numbers	V_{BR}			I_R	V_{RWM}	I_R	C
	Min.	Typ.	Max.				Typ. 0v bias
	V	V	V	mA	V	pA	pF
ESD9D3V3C	5.1	6.0	6.8	1	3.3	1	20
ESD9D5C	5.6	6.7	7.8	1	5.0	1	10
ESD9D12C	13.3	14.5	15.7	1	12	1	9

*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.

TYPICAL CHARACTERISTICS

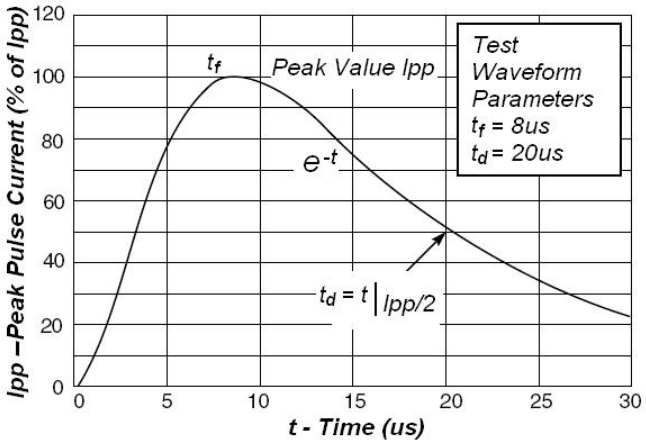


Fig1. Pulse Waveform

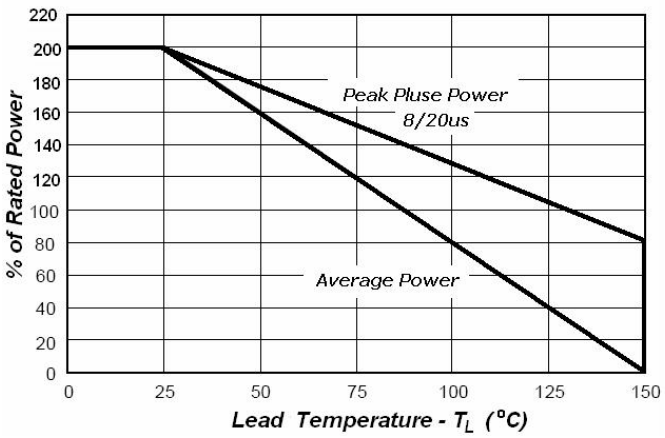
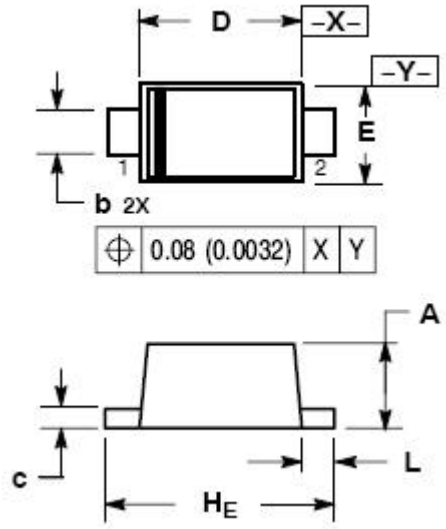
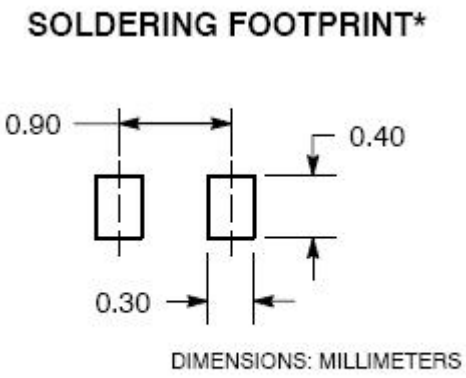


Fig2. Power Derating Curve

SOD-923 MECHNICAL DATA





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