

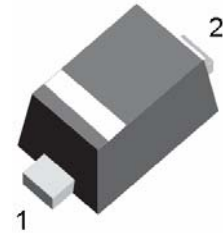
ESD9X3V3 SERIES



ESD PROTECTION DIODE

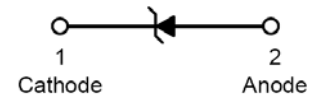
Features

- Small SOD-923 Package
- Unidirectional Configurations
- Low Leakage
- Fast Response Time < 1 ns
- Protects One Power or I/O Port
- ESD Rating of Class 3 (>16KV) per Human Body Model
- ESD Protection to IEC 61000-4-2 Level 4
- RoHS Compliant in Lead-Free Versions



Applications

- Communication Systems & Cellular Phones
- Personal Digital Assistant (PDA)
- Digital Cameras
- Power Supplies



Absolute Maximum Ratings

Parameter	Symbol	Value	Units	
IEC 61000-4-2 (ESD) Contact		±30	kV	
ESD Voltage		Per Human Body Model	16	kV
		Per Machine Model	400	V
Total Power Dissipation on FR-5 Board (Note 1) @ T _A =25°C	P _D	150	Mw	
Junction and Storage Temperature Range	T _J , T _{STG}	-55 to 150	°C	
Lead Solder Temperature – Maximum (10 Second Duration)	T _L	260	°C	

Stresses exceeding Maximum Ratings may damage the device. Maximum Rating are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

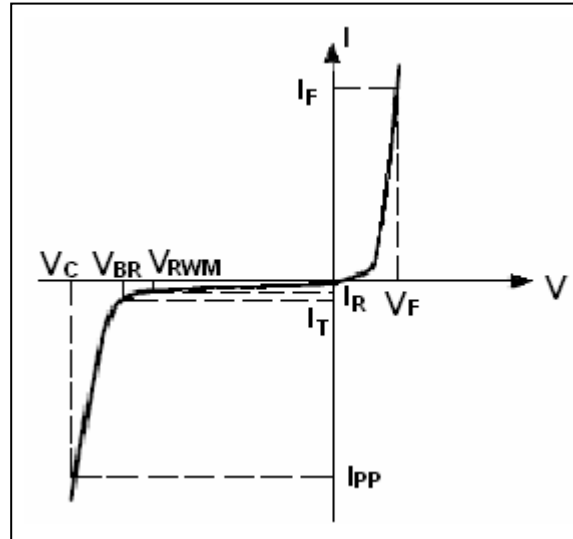
1. FR-5 = 1.0*0.75*0.62 in.

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Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

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_F	Forward Current
V_F	Forward Voltage @ I_F



Electrical Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

Device	Device Marking	V_{RWM} (V)	I_R (uA) @ V_{RWM}	V_{BR} (V) @ I_T (Note 2)	I_T (mA)	I_{PP} (A) (Note 2)	V_C (V) @ Max I_{PP} (Note 3)	P_{PK} (W) (8*20 μ s)	C (pF)
		Max	Max	Min		Max	Max	Typ	Typ
ESD9X3V3	A	3.3	2.5	5.0	1.0	9.8	10.4	102	80
ESD9X5V	B	5.0	1.0	6.2	1.0	8.7	12.3	107	65
ESD9X12V	C	12	1.0	13.5	1.0	5.9	23.7	140	30

- V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25°C
- Surge current waveform per Figure 3.

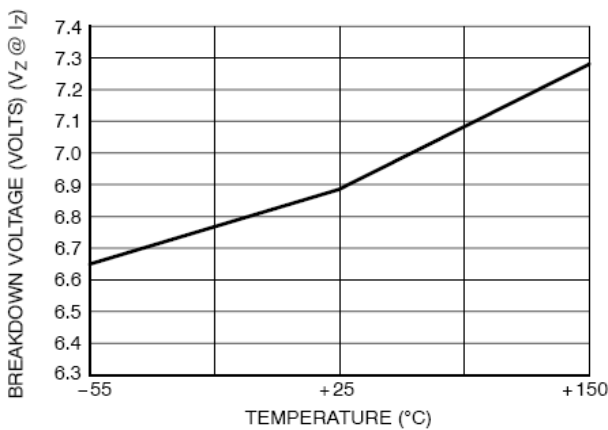


Figure 1. Typical Breakdown Voltage versus Temperature

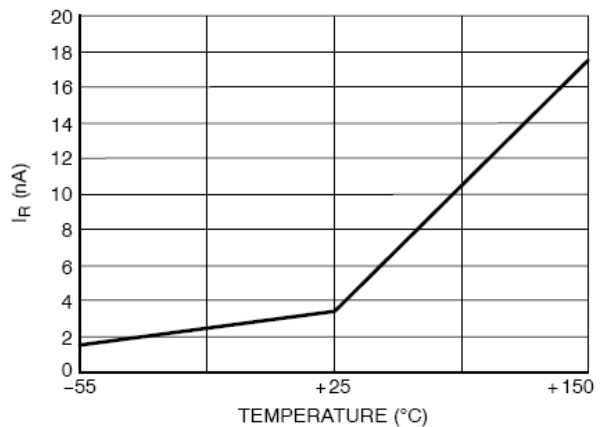


Figure 2. Typical Leakage Current versus Temperature

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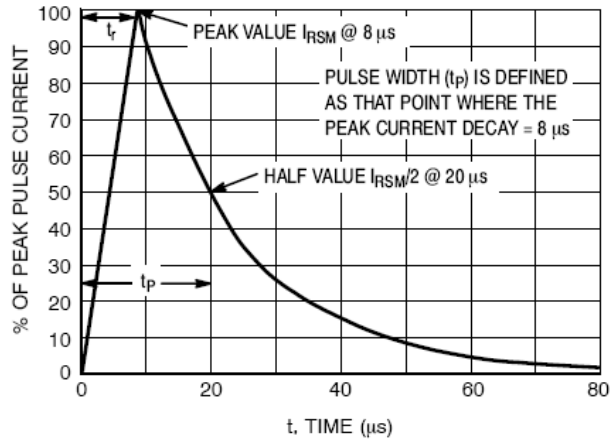
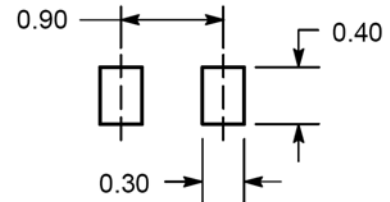
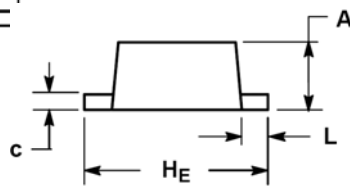
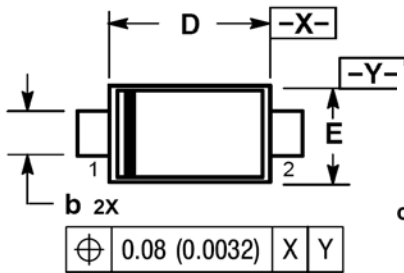


Figure 3. 8*20 μs Pulse Waveform

Package Dimensions

SOD-923

SOLDERING FOOTPRINT*



DIMENSIONS: MILLIMETERS

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