

SOD-123 Plastic-Encapsulate Diodes

DESD1Z3V3C Bi-direction ESD Protection Diode

DESCRIPTION

Low capacitance bidirectional double ElectroStatic Discharge (ESD) protection diode in a small Surface-Mounted Device (SMD) plastic package designed to protect two data lines from the damage caused by ESD and other transients.

FEATURES

- Bi-directional ESD protection
- Low reverse stand-off voltage: 3.3V
- Low reverse clamping voltage
- Low leakage current
- Fast response time
- JESD22-A114-B ESD Rating of class 3B per human body model
- IEC 61000-4-2 Level 4 ESD protection

SOD-123



Top View
Marking Code: "5M"
Simplified outline SOD-123 and symbol

MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

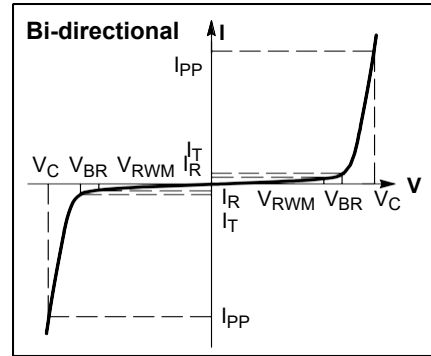
Parameter	Symbol	Limit	Unit
IEC 61000-4-2 ESD Voltage	$V_{\text{ESD}}^{(1)}$	Air Model ± 25	kV
		Contact Model ± 25	
JESD22-A114-B ESD Voltage		Per Human Body Model ± 16	
ESD Voltage		Machine Model ± 0.4	
Peak Pulse Power	$P_{\text{PP}}^{(2)}$	360	W
Peak Pulse Current	$I_{\text{PP}}^{(2)}$	7	A
Lead Solder Temperature – Maximum (10 Second Duration)	T_L	260	$^{\circ}\text{C}$
Junction Temperature	T_j	150	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-55 ~ +150	$^{\circ}\text{C}$

(1).Device stressed with ten non-repetitive ESD pulses.

(2).Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5.

ELECTRICAL PARAMETER

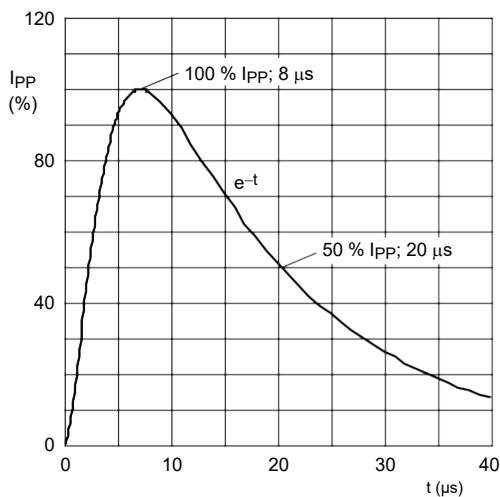
Symbol	Parameter
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Peak Pulse Current
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_R	Reverse Leakage Current @ V_{RWM}
V_{RWM}	Reverse Standoff Voltage

ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless otherwise noted)

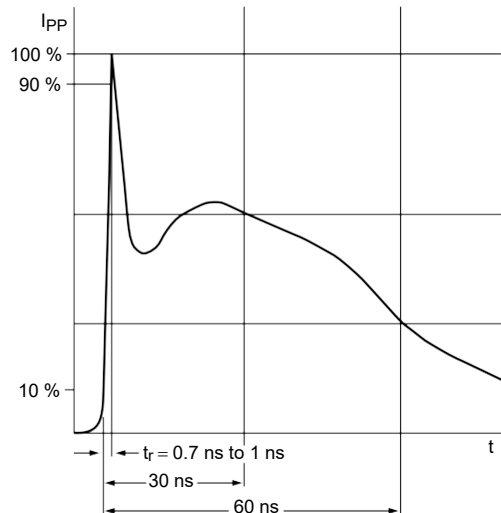
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse stand off voltage	$V_{RWM}^{(1)}$				3.3	V
Reverse leakage current	I_R	$V_{RWM}=3.3\text{V}$			1.0	μA
Breakdown voltage	$V_{(BR)}$	$I_T=1\text{mA}$	3.5		6.3	V
Clamping voltage	$V_C^{(2)}$	$I_{PP}=7\text{A}$			10	V
Junction capacitance	C_J	$V_R=0\text{V}, f=1\text{MHz}$		10		pF

(1).Other voltages available upon request.

(2).Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5

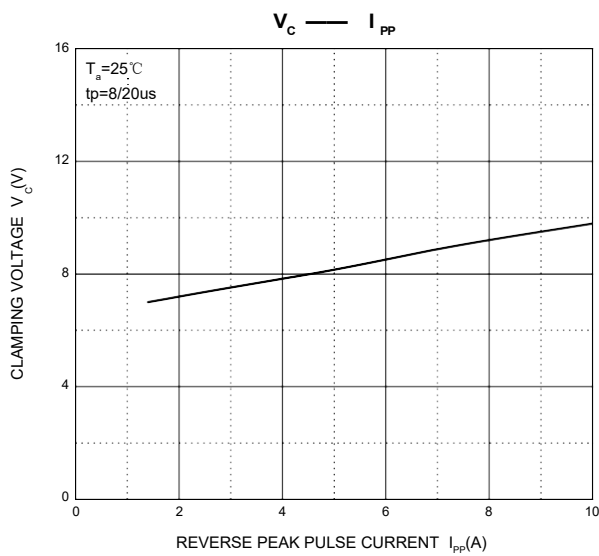
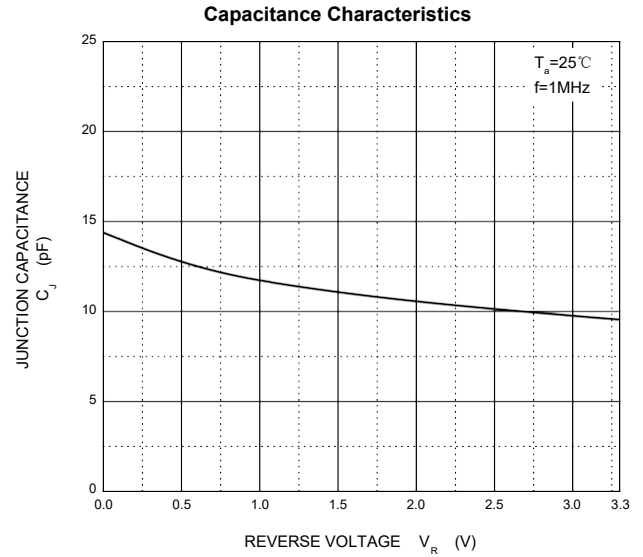
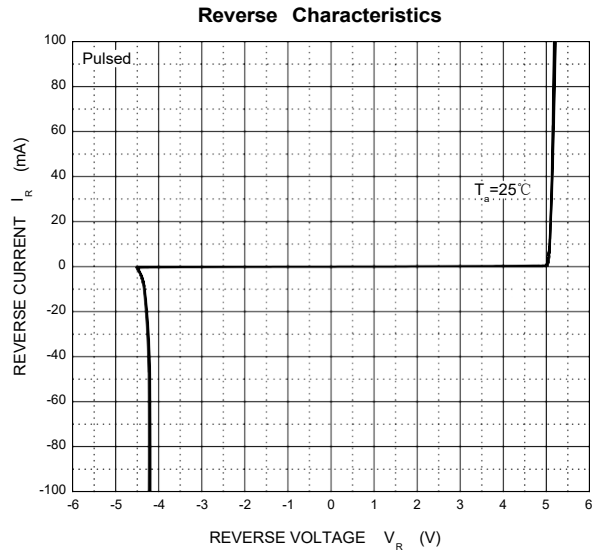


8/20 μs pulse waveform according to IEC 61000-4-5



ESD pulse waveform according to IEC 61000-4-2

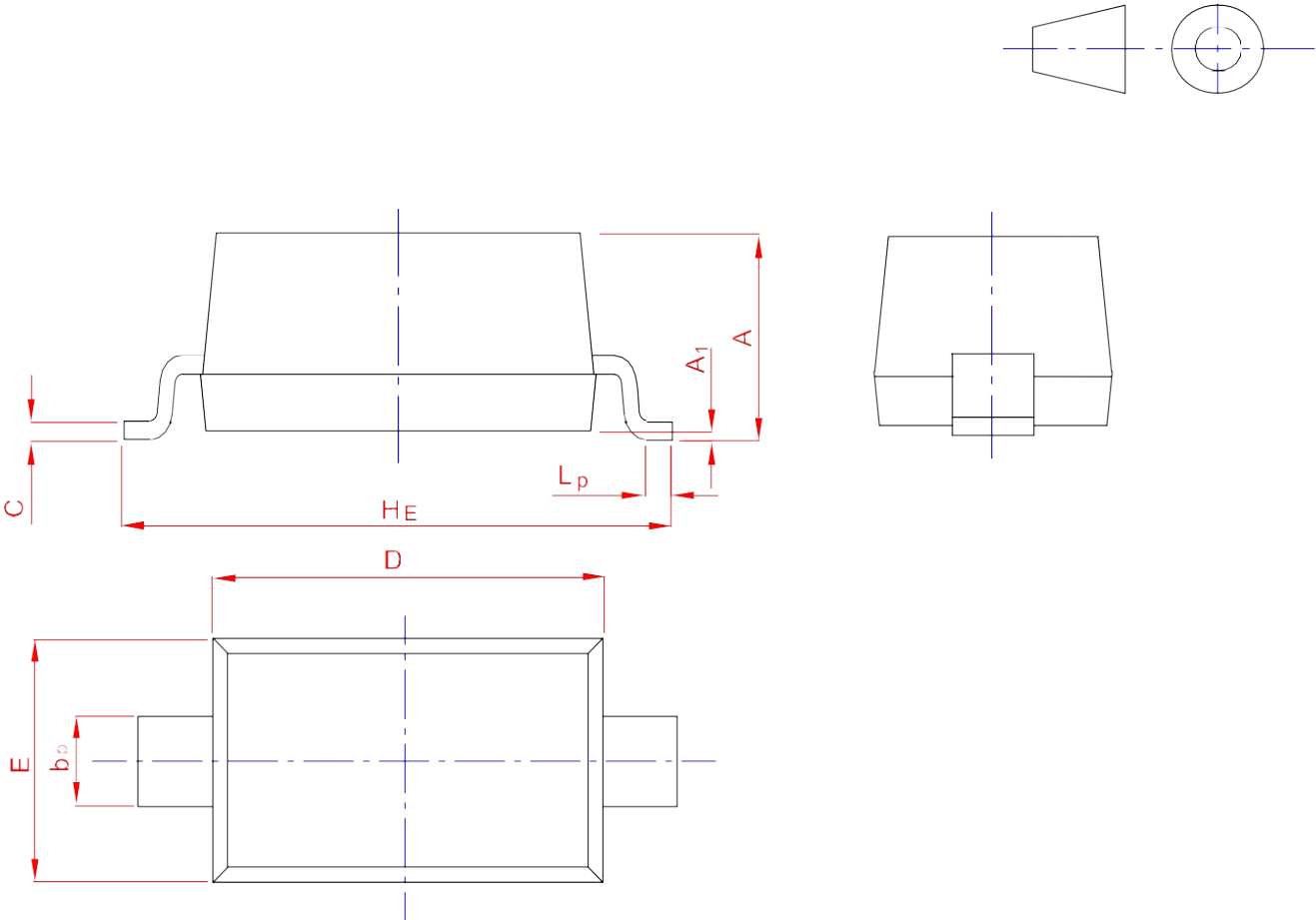
TYPICAL CHARACTERISTICS



PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD-123



UNIT	A	bp	C	D	E	HE	A1	Lp
mm	1.20	0.60	0.135	2.75	1.65	3.85	0.10	0.50
	0.90	0.50	0.100	2.55	1.55	3.55	0.01	0.20

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