

SOD-123 Plastic-Encapsulate Diodes

ESD1Z5V0 Uni-direction ESD Protection Diode

DESCRIPTION

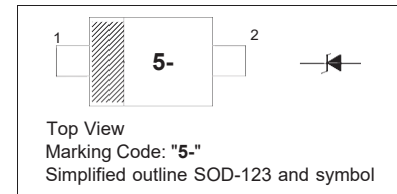
Unidirectional ElectroStatic Discharge (ESD) protection diode designed to protect one signal line from the damage caused by ESD and other transients.

FEATURES

- Uni-directional ESD protection
- Low reverse stand-off voltage: 5V
- 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

PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode



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

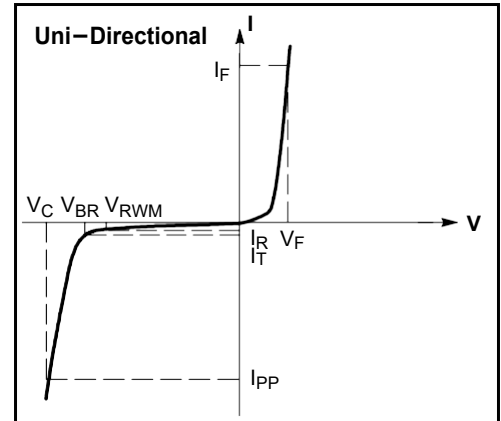
Parameter	Symbol	Limit	Unit
IEC 61000-4-2 ESD Voltage	$V_{\text{ESD}}^{(1)}$	± 25	kV
		± 25	
JESD22-A114-B ESD Voltage		± 16	
ESD Voltage		± 0.4	
Peak Pulse Power	$P_{\text{PP}}^{(2)}$	260	W
Peak Pulse Current	$I_{\text{PP}}^{(2)}$	13	A
Lead Solder Temperature – Maximum (10 Second Duration)	T_L	260	$^{\circ}\text{C}$
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
V_F	Forward Voltage @ I_F
I_F	Forward Current

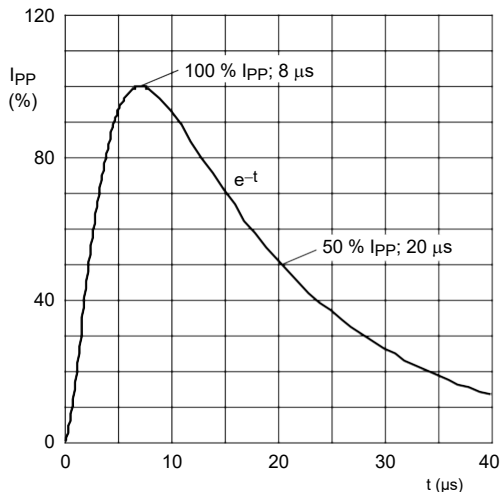


ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

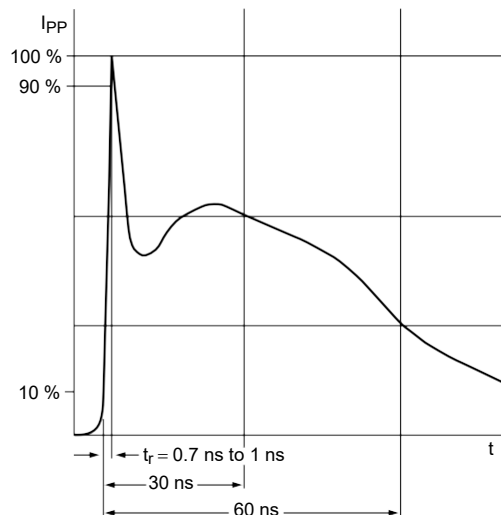
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse stand off voltage	$V_{RWM}^{(1)}$				5.0	V
Reverse leakage current	I_R	$V_{RWM}=5.0\text{V}$			1.0	μA
Breakdown voltage	$V_{(BR)}$	$I_T=1\text{mA}$	6.2		7.3	V
Clamping voltage	$V_C^{(2)}$	$I_{PP}=13\text{A}$			13	V
Junction capacitance	C_J	$V_R=0\text{V}, f=1\text{MHz}$		95		pF

(1). Other voltages available upon request.

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

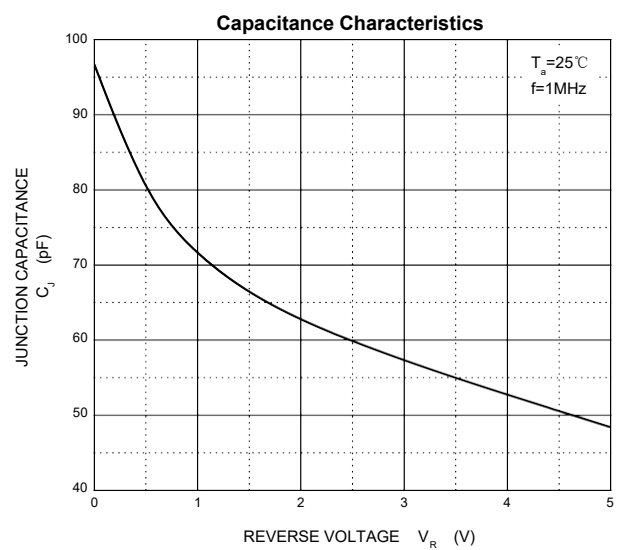
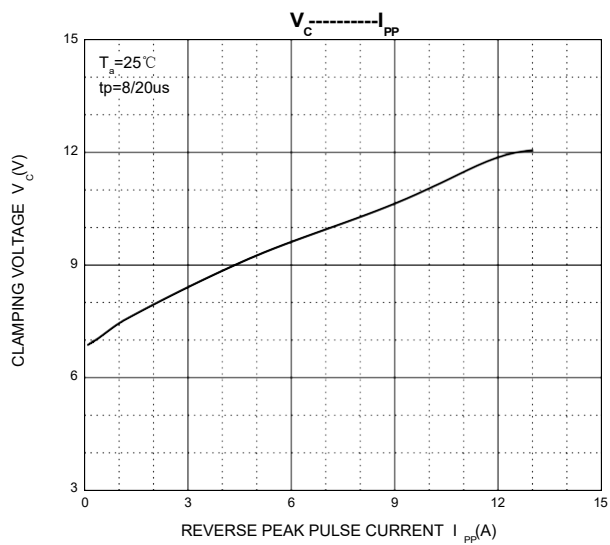
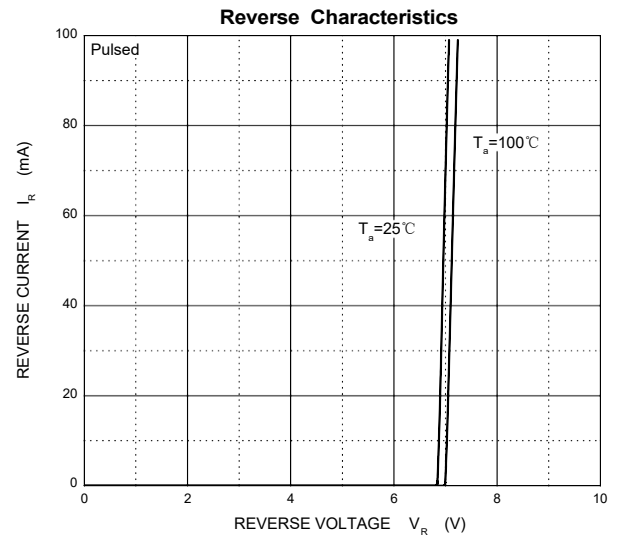
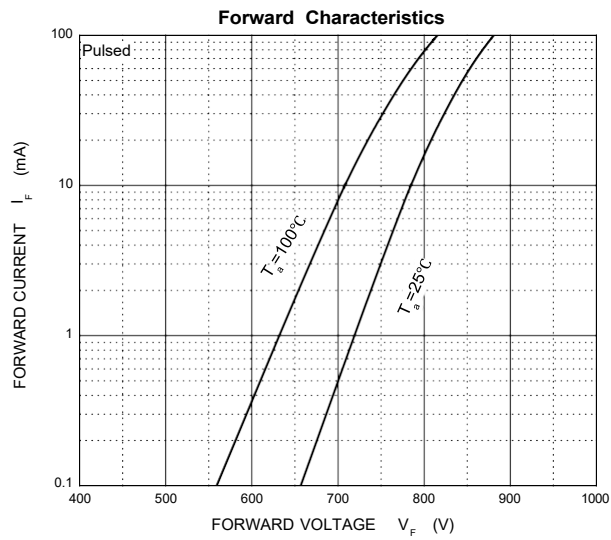


8/20 μs pulse waveform according to IEC 61000-4-5



ESD pulse waveform according to IEC 61000-4-2

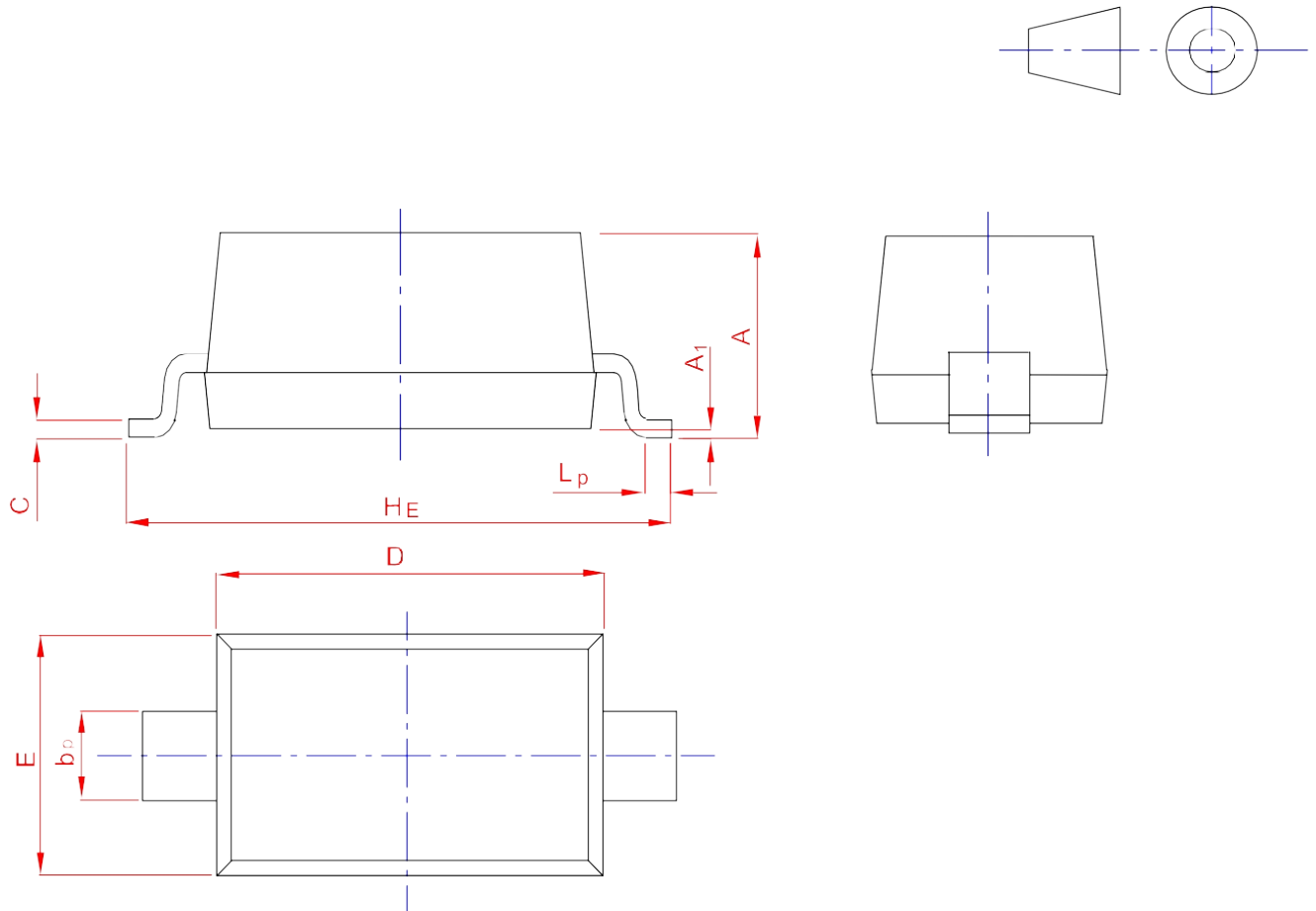
TYPICAL CHARACTERISTICS



PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD-123



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

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