

# SOD-123 Plastic-Encapsulate Diodes

## ESD1Z18 Uni-direction ESD Protection Diode

### DESCRIPTION

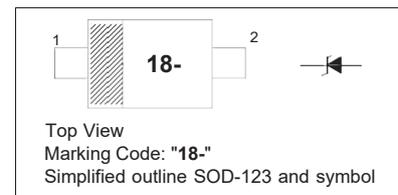
Unidirectional ElectroStatic Discharge (ESD) protection diode designed to protect one signal line from the damage caused by ESD and other transients.

### FEATURES

- Uni-directional ESD protection
- Low reverse stand-off voltage: 18V
- 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 )

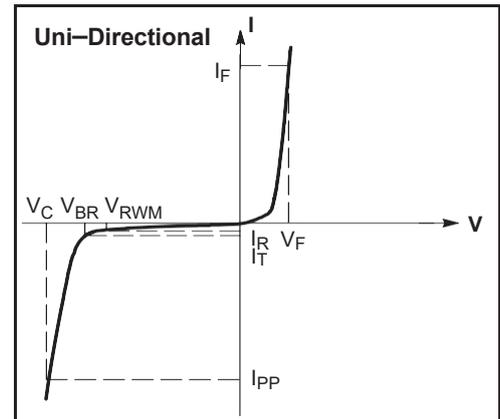
Parameter	Symbol	Limit	Unit	
IEC 61000-4-2 ESD Voltage	$V_{\text{ESD}}^{(1)}$	Air Model	$\pm 5$	kV
		Contact Model	$\pm 5$	
JESD22-A114-B ESD Voltage		Per Human Body Model	$\pm 10$	
ESD Voltage		Machine Model	$\pm 0.4$	
Peak Pulse Power	$P_{\text{PP}}^{(2)}$	500	W	
Peak Pulse Current	$I_{\text{PP}}^{(2)}$	1.5	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	$T_{\text{stg}}$	-55 ~ +150	$^\circ\text{C}$	

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

(2).Non-repetitive current pulse 8/20 $\mu\text{s}$  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

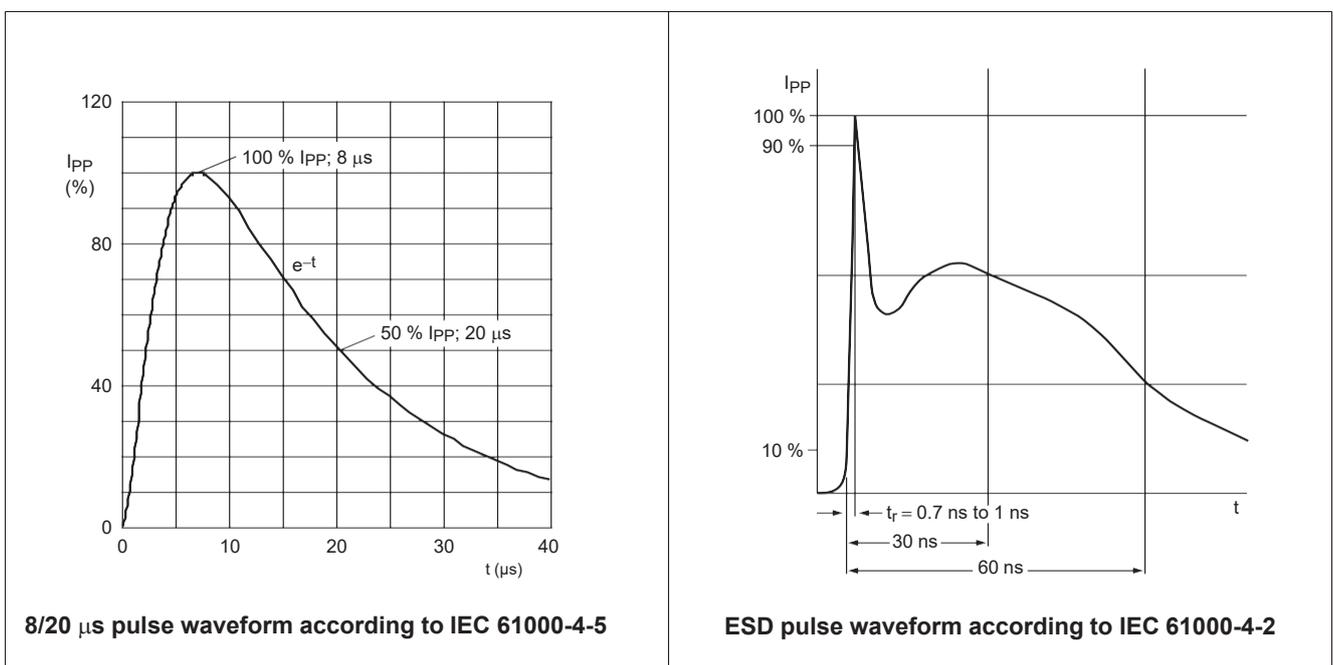


### ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ$ unless otherwise noted )

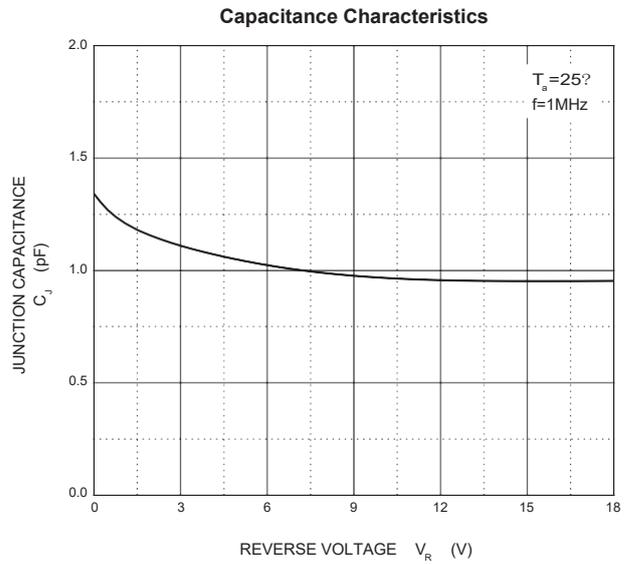
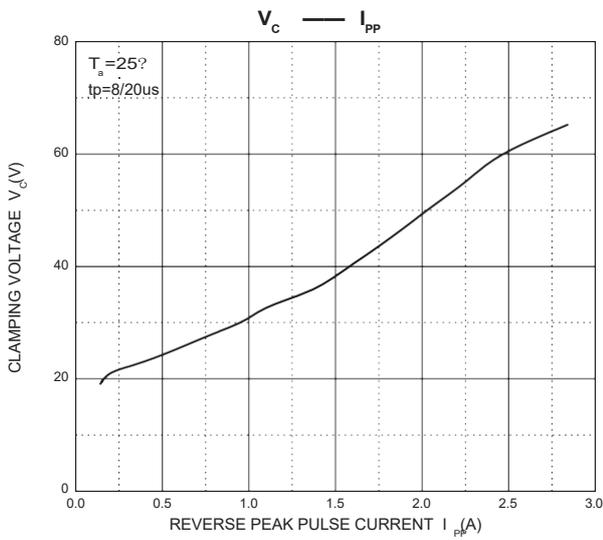
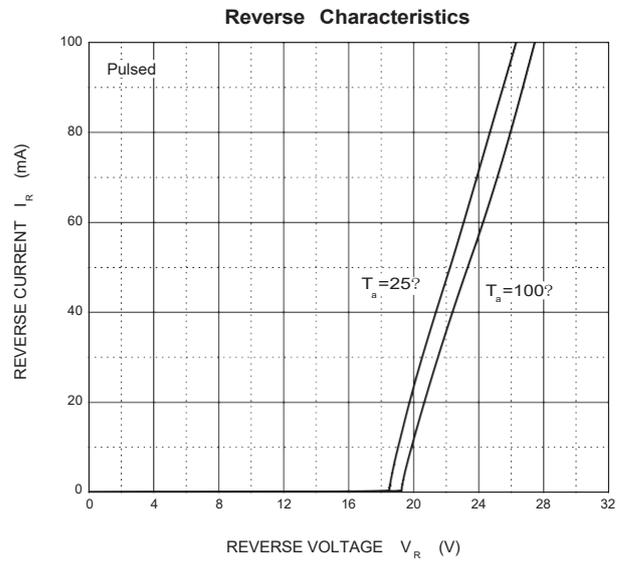
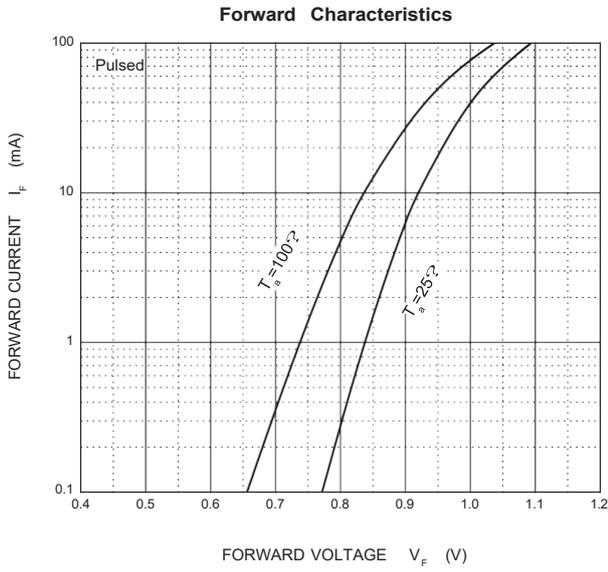
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse stand off voltage	$V_{RWM}^{(1)}$				18	V
Reverse leakage current	$I_R$	$V_{RWM}=18V$			0.05	$\mu A$
Breakdown voltage	$V_{(BR)}$	$I_T=10mA$	18.5		23.0	V
Clamping voltage	$V_C^{(2)}$	$I_{PP}=1.5A$			40	V
Junction capacitance	$C_J$	$V_R=0V, f=1MHz$		2.0		pF

(1).Other voltages available upon request.

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



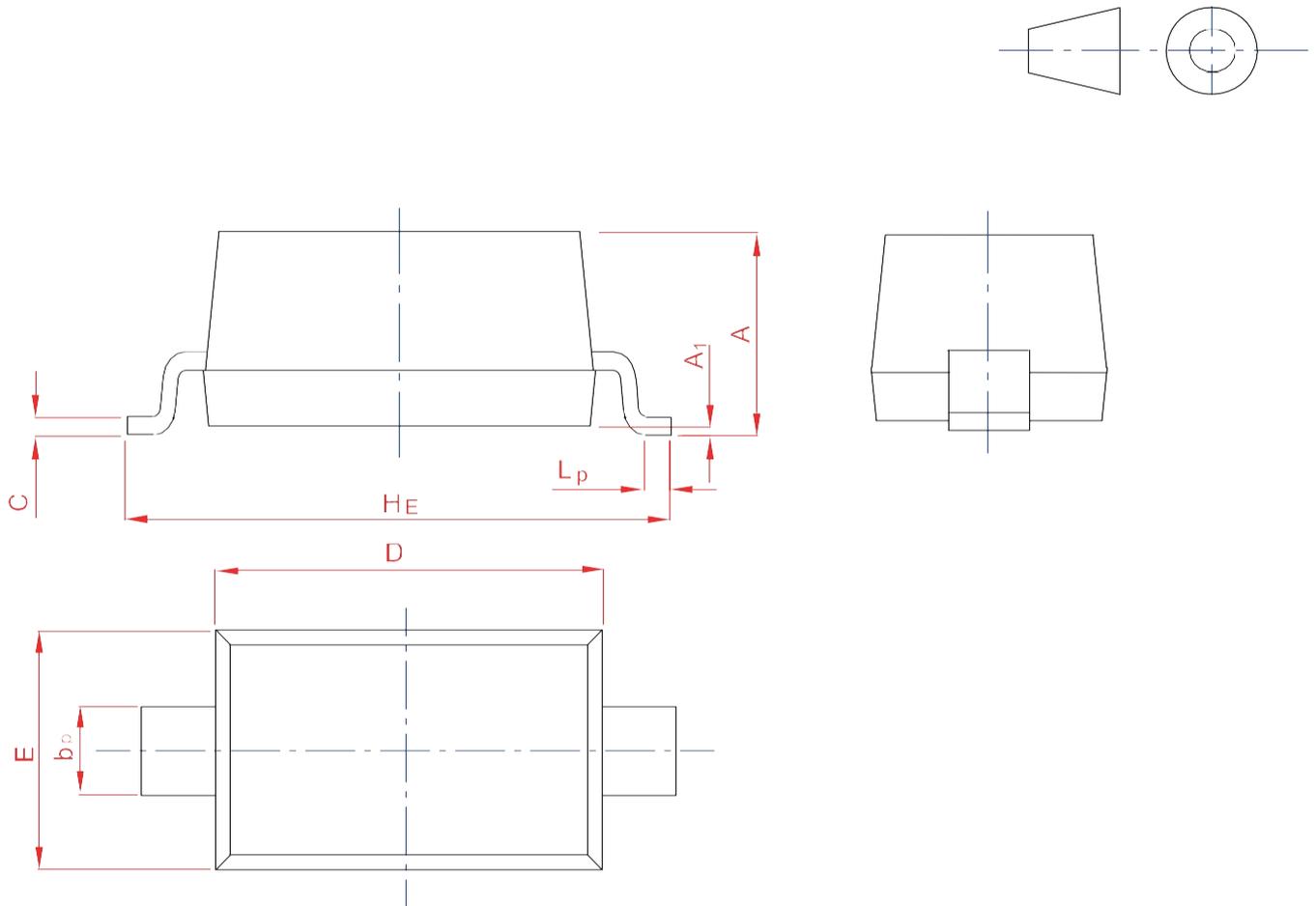
TYPICAL CHARACTERISTICS



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