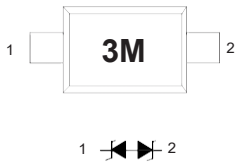
SOD-123 Plastic-Encapsulate Diodes

DESD1Z5V0C 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.

SOD-123



Top View
Marking Code: **"3M"**
Simplified outline and symbol

FEATURES

- Bi-directional ESD protection
- Low reverse stand−off voltage: 5.0V
- 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

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

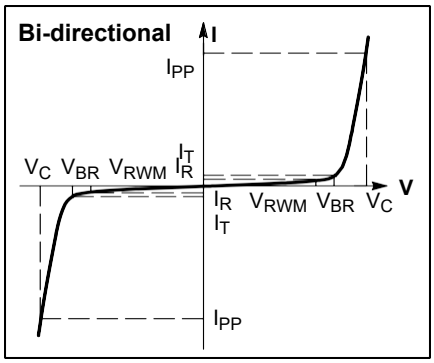
Parameter		Symbol	Limit	Unit
IEC 61000-4-2 ESD Voltage	Air Model	$V_{ESD}^{(1)}$	±25	kV
	Contact Model		±25	
JESD22-A114-B ESD Voltage	Per Human Body Model		±16	
ESD Voltage	Machine Model		±0.4	
Peak Pulse Power		$P_{PP}^{(2)}$	500	W
Peak Pulse Current		$I_{PP}^{(2)}$	28	A
Lead Solder Temperature − Maximum (10 Second Duration)		T_L	260	℃
Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-55 ~ +150	℃

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

(2).Non-repetitive current pulse 8/20μs 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

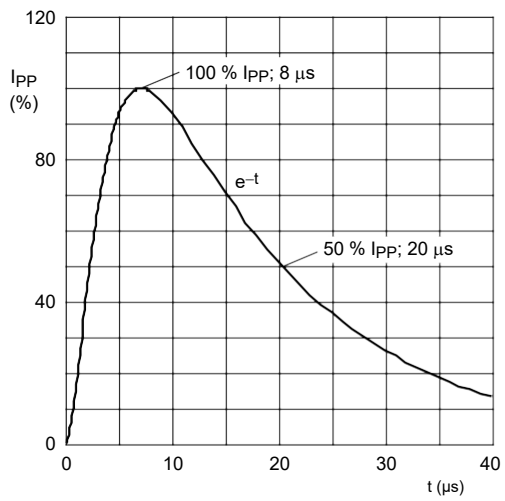


ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise noted)

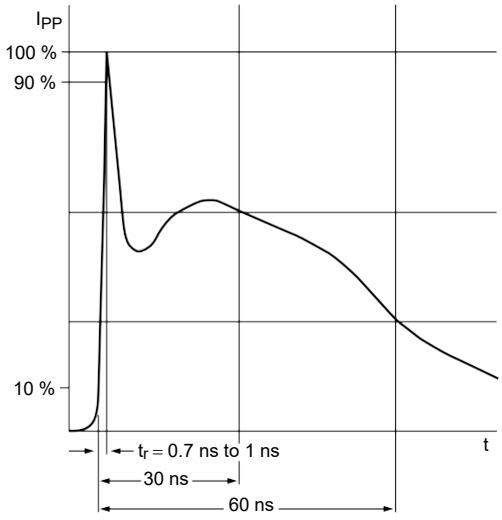
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse stand off voltage	V_{RWM} (1)				5.0	V
Reverse leakage current	I_R	V_{RWM}=5.0V			1.0	μA
Breakdown voltage	$V_{(BR)}$	I_T=1mA	5.5		8.0	V
Clamping voltage	V_C (2)	I_{PP}=28A			17	V
Junction capacitance	C_J	V_R=0V,f=1MHz		25		pF

(1).Other voltages available upon request.

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



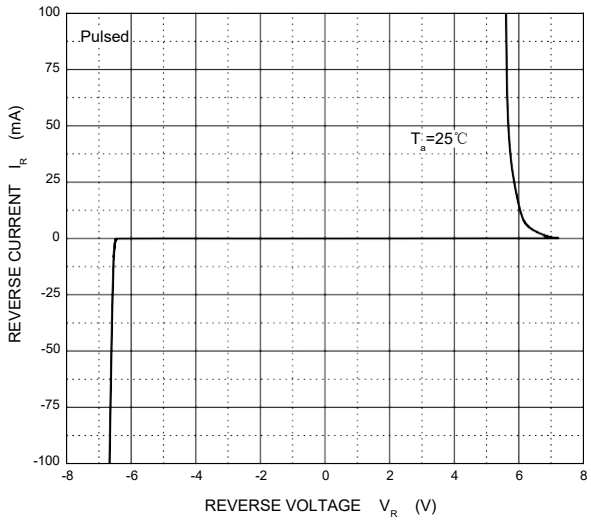
8/20 μs pulse waveform according to IEC 61000-4-5



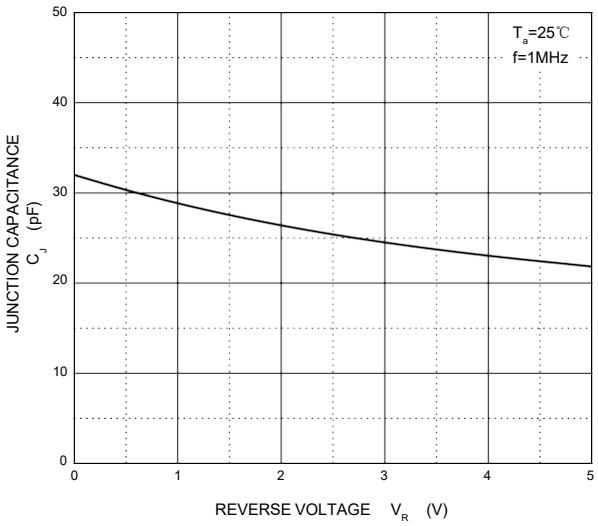
ESD pulse waveform according to IEC 61000-4-2

TYPICAL CHARACTERISTICS

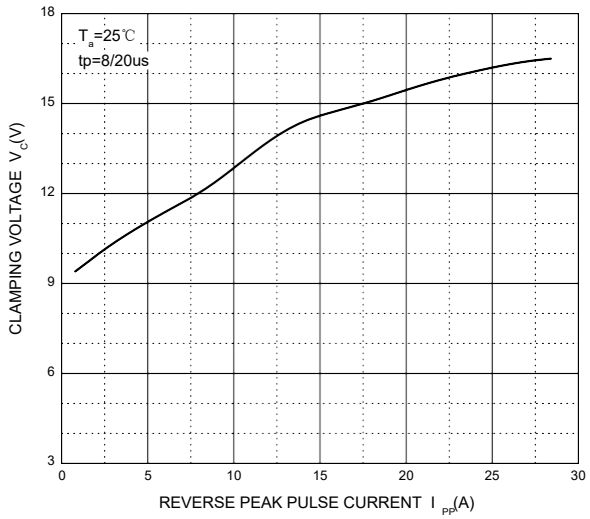
Reverse Characteristics



Capacitance Characteristics

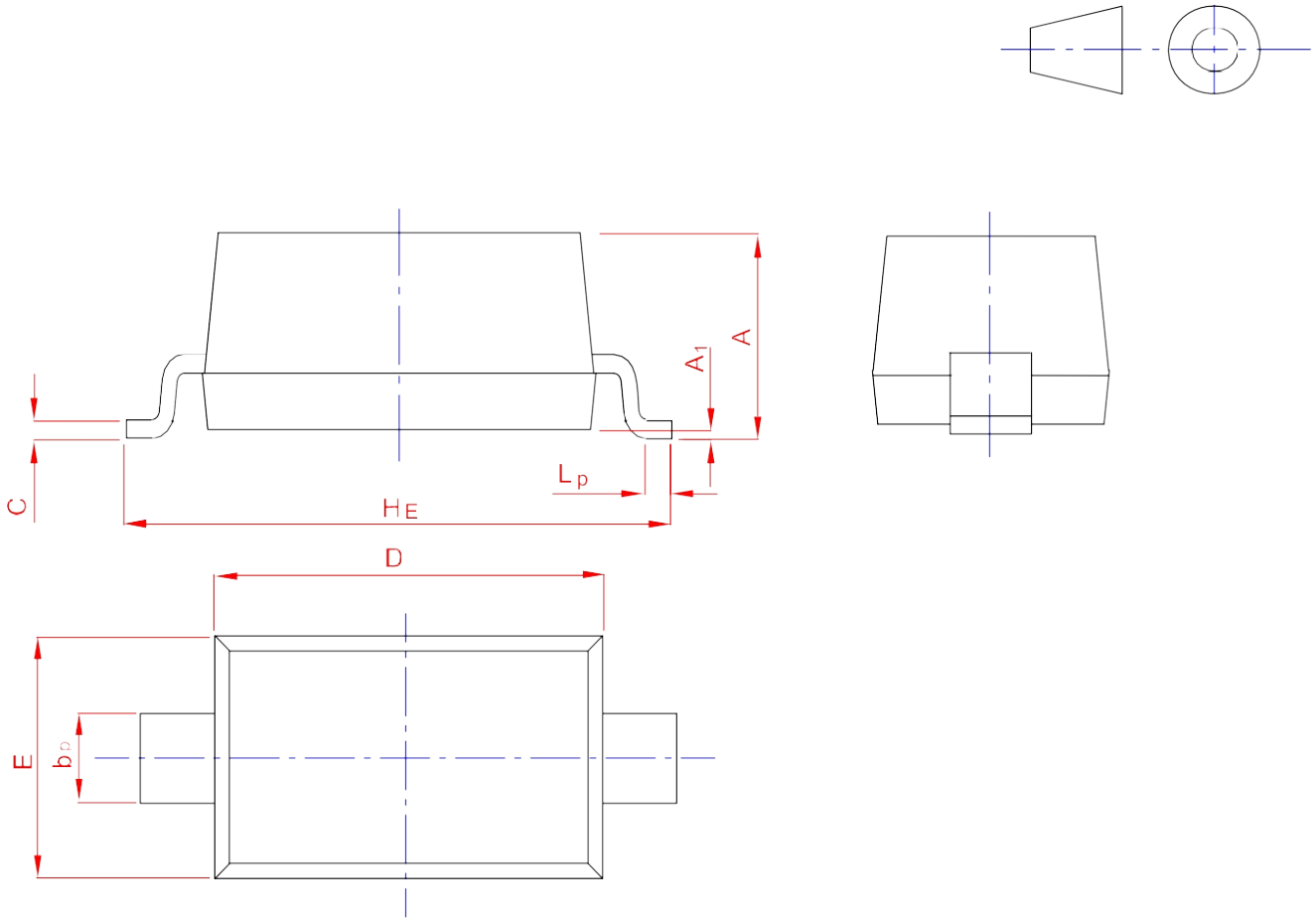


V_C —— I_{PP}



PACKAGE OUTLINE

Plastic surface mounted package; 2 leads **SOD-123**



UNIT	A	b_p	C	D	E	H_E	A_1	L_p
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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