

SOT-23 Plastic-Encapsulate Diodes

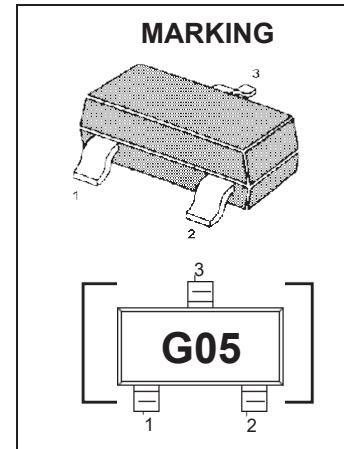
DESDSOT05C Bi-direction ESD Protection Diode

DESCRIPTION

Low capacitance bidirectional double ElectroStatic Discharge (ESD) protection diode in a small SOT-23 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 of two lines
- Low capacitance: 12pF(Typ.)
- 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 ($T_a=25^\circ\text{C}$ unless otherwise noted)

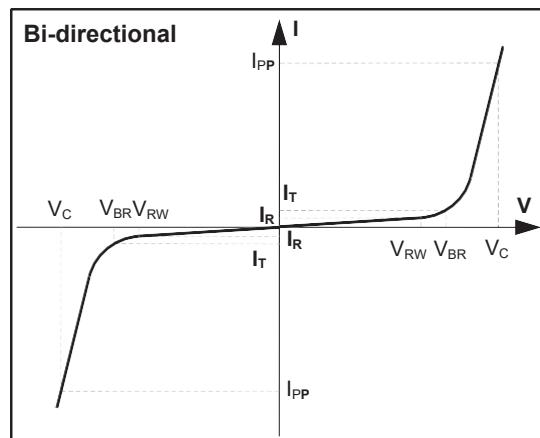
Parameter	Symbol	Limit	Unit
IEC 61000-4-2 ESD Voltage	$V_{ESD}^{(1)}$	± 15	kV
Air Model		± 8	
Contact Model		± 10	
JESD22-A114-B ESD Voltage		± 0.4	
Per Human Body Model			
ESD Voltage			
Machine Model			
Peak Pulse Power	$P_{PP}^{(2)}$	350	W
Peak Pulse Current	$I_{PP}^{(2)}$	12	A
Lead Solder Temperature – Maximum (10 Second Duration)	T_L	260	°C
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{stg}	-55 ~ +150	°C

(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

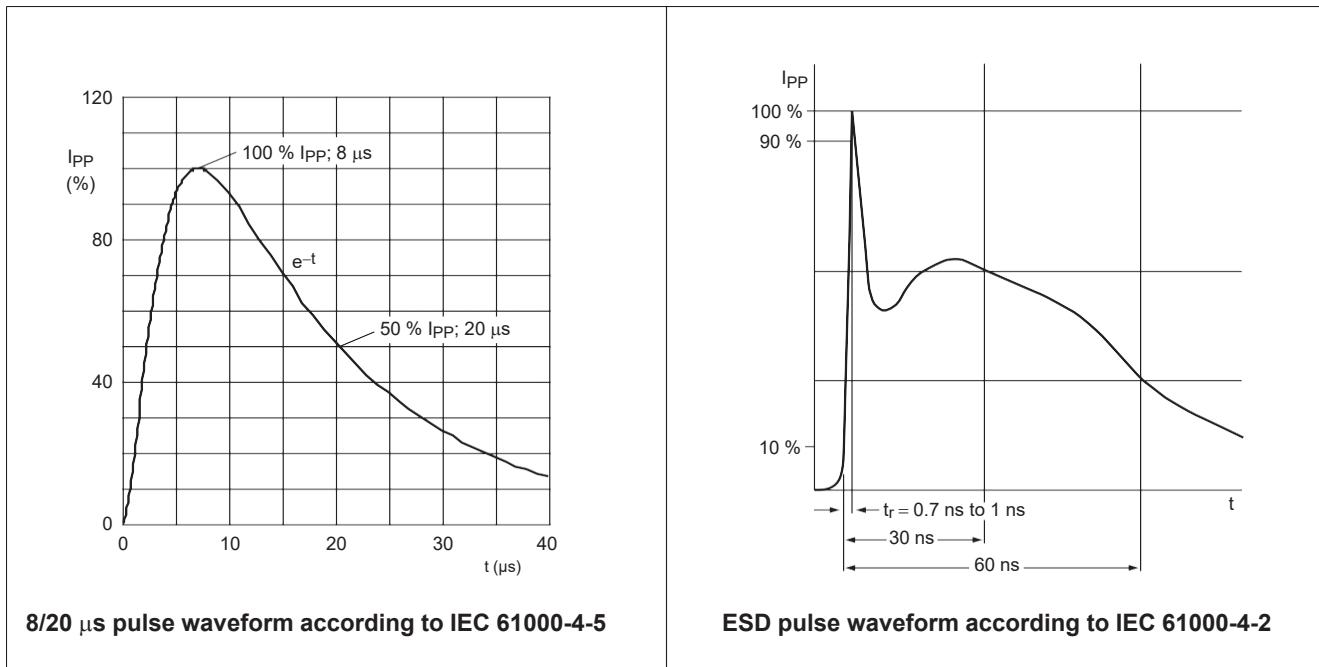
Symbol	Parameter
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Peak Pulse Current
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_R	Reverse Leakage Current @ V_{RWM}
V_{RWM}	Reverse Standoff Voltage

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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse stand off voltage	$V_{RWM}^{(1)}$				5	V
Reverse leakage current	I_R	$V_{RWM}=5\text{V}$			0.1	μA
Breakdown voltage	$V_{(BR)}$	$I_T=1\text{mA}$	5.8		8.3	V
Clamping voltage	$V_C^{(2)}$	$I_{PP}=5\text{A}$			10	V
Junction capacitance	C_J	$V_R=0\text{V}, f=1\text{MHz}$		12	15	pF

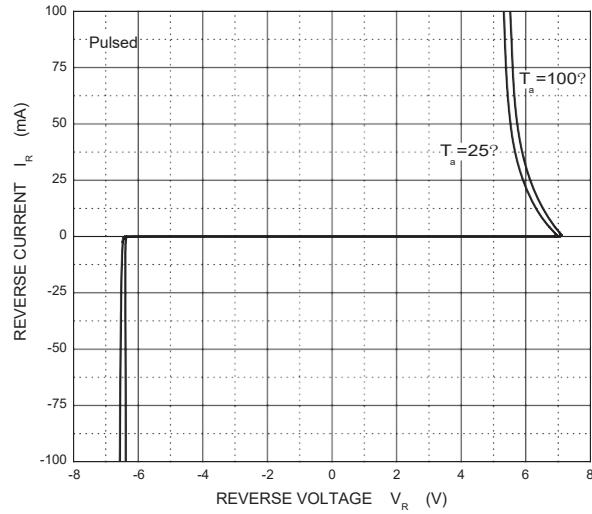
(1).Other voltages available upon request.

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

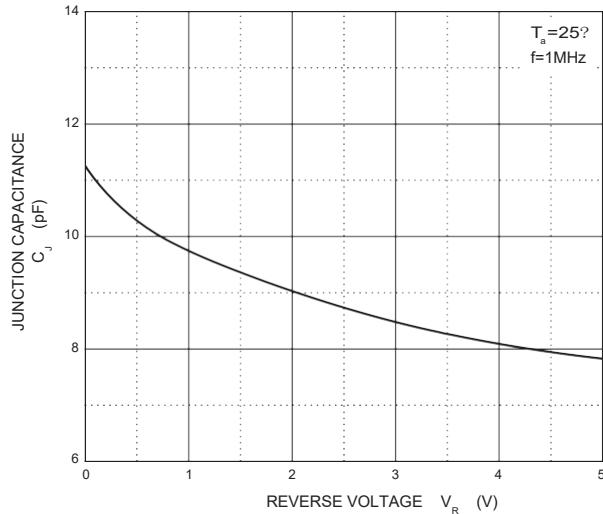


TYPICAL CHARACTERISTICS

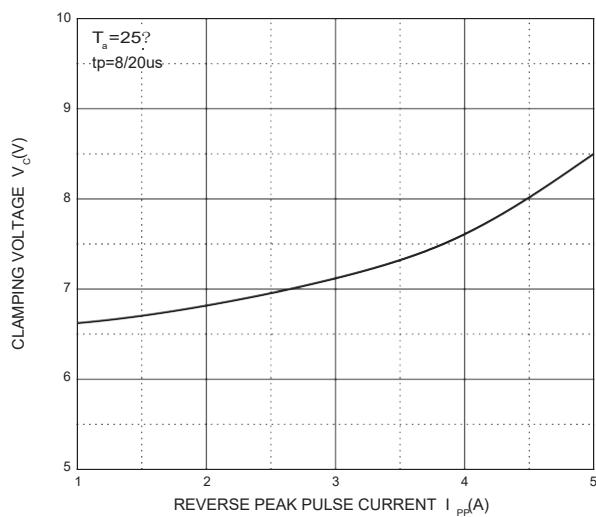
Reverse Characteristics



Capacitance Characteristics



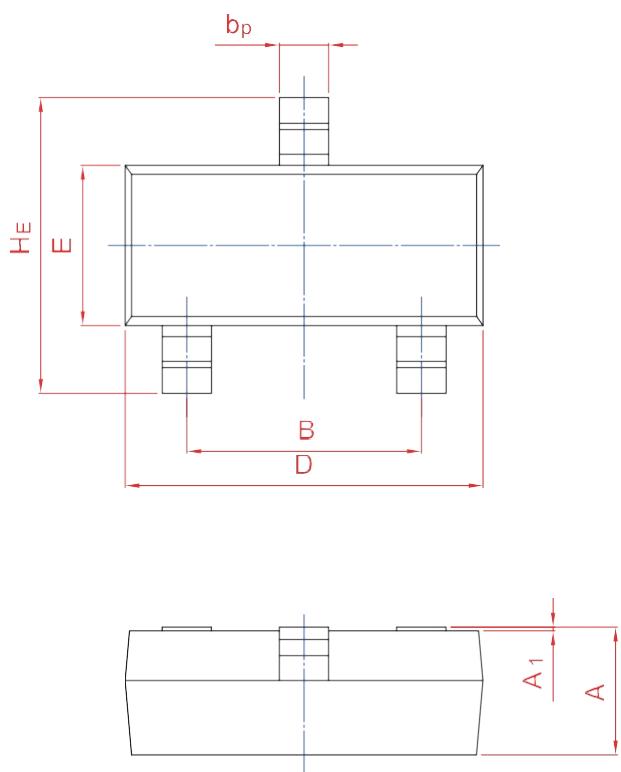
V_c — I_{pp}



PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



UNIT	A	B	b_p	C	D	E	H_E	A_1	L_p
mm	1.40 0.95	2.04 1.78	0.50 0.35	0.19 0.08	3.10 2.70	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20