

5V Uni-direction ESD Protection Diode

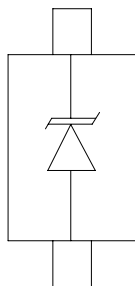
Description

The SESD5Z05D is an uni-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The SESD5Z05D complies with the IEC 61000-4-2(ESD) with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. It is assembled into an ultra-small SOD-523 lead-free package. The small size and high ESD surge protection make SESD5Z05D an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Mechanical Characteristics

- ◆ Package: SOD-523
- ◆ Case Material: "Green" Molding Compound.
- ◆ Moisture Sensitivity: Level 3 per J-STD-020
- ◆ Terminal Connections: See Diagram Below
- ◆ Marking Information: See Below

Dimensions and Pin Configuration



Circuit and Pin Schematic

Features

- ◆ Ultra small package: SOD-523
- ◆ Protects one data or power line
- ◆ Ultra low leakage: nA level
- ◆ Operating voltage: 5V
- ◆ Low clamping voltage
- ◆ 2-Pin leadless package
- ◆ Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 30\text{kV}$
 - Contact discharge: $\pm 30\text{kV}$
 - IEC61000-4-5 (Lightning) 8A (8/20 μs)
- ◆ ROHS Compliant

Applications

- ◆ Cellular Handsets and Accessories
- ◆ Personal Digital Assistants
- ◆ Notebooks and Handhelds
- ◆ Portable Instrumentation
- ◆ Digital Cameras
- ◆ Peripherals
- ◆ Audio Players
- ◆ Keypads, Side Keys, LCD Displays

Marking Information



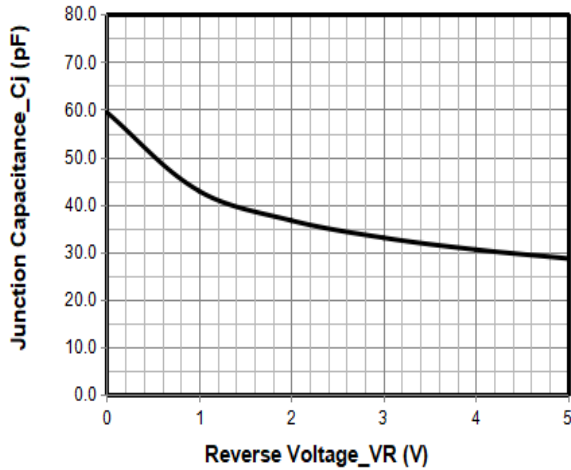
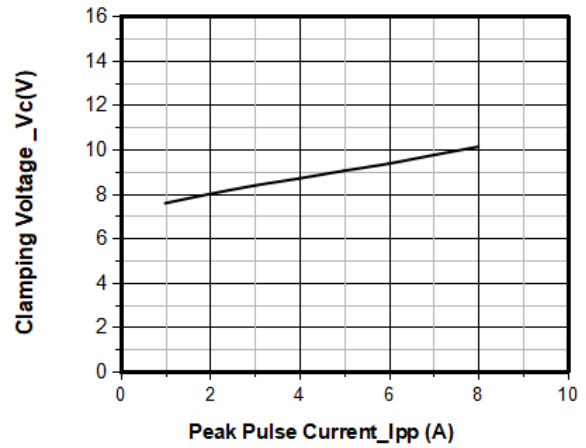
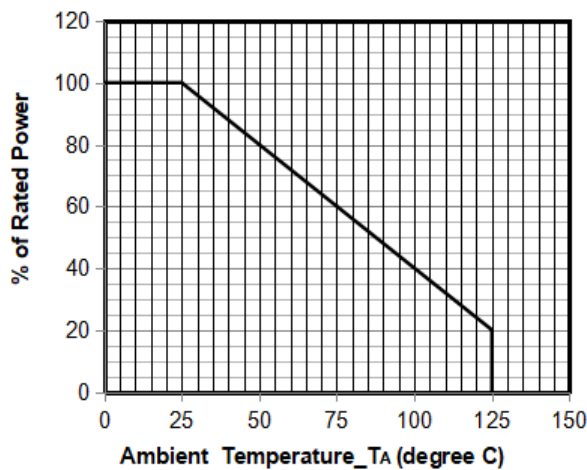
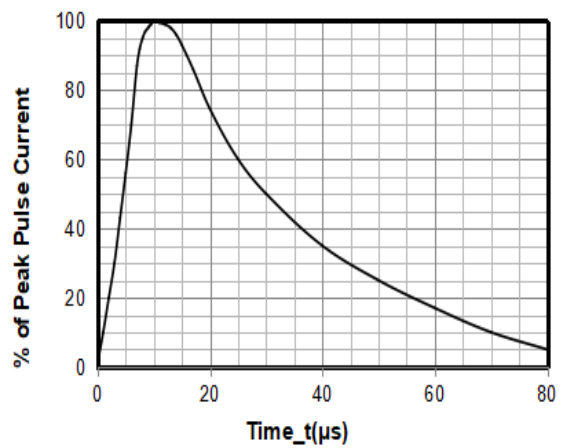
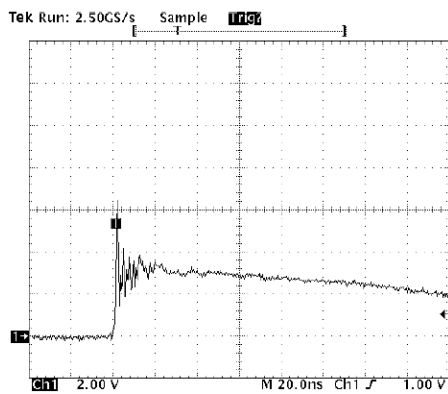
D5 = Device Marking Code
Bar denotes Pin1

Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Current (8/20 μs)	I_{pp}	8	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	± 30 ± 30	kV
Operating Temperature Range	T_J	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^{\circ}\text{C}$

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			5	V	Pin 1 to pin 2
Breakdown Voltage	V_{BR}	6		8.5	V	$I_T = 1\text{mA}$, Pin 1 to Pin 2
Reverse Leakage Current	I_R			0.2	μA	$V_{RWM} = 5\text{V}$, Pin 1 to Pin 2
Forward Voltage	V_F		1.0	1.2	V	$I_F = 10\text{mA}$, pin 2 to pin 1
Clamping Voltage	V_C			12	V	$I_{PP} = 8\text{A}$ (8 x 20 μs pulse), Pin 1 to pin2
Junction Capacitance	C_J		60		pF	$V_R = 0\text{V}$, $f = 1\text{MHz}$

Typical Performance Characteristics (TA=25°C unless otherwise Specified)

Junction Capacitance vs. Reverse Voltage

Clamping Voltage vs. Peak Pulse Current

Power Derating Curve

8 X 20µs Pulse Waveform


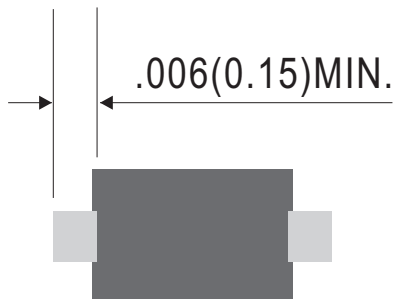
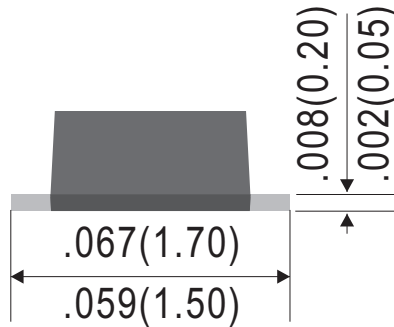
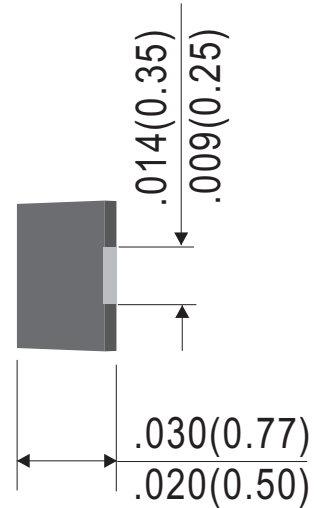
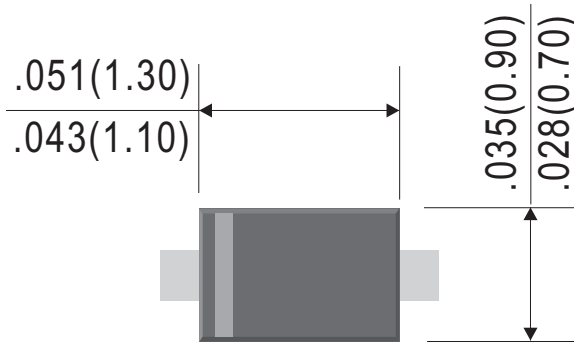
Note: Data is taken with a 10x attenuator

ESD Clamping Voltage

8 kV Contact per IEC61000-4-2

Outline Drawing

SOD-523



Dimensions in inches and (millimeters)

Rev.D

Ordering Information:

Device PN	Packing
SESD5Z05D-T ⁽¹⁾ H ⁽²⁾ -WS ⁽³⁾	Tape&Reel: 3 Kpcs/Reel

Note: (1) Packing code, Tape & Reel Packing

(2) RoHS product for packing code suffix "G" ; Halogen free product for packing code suffix "H"

(3) WS : Willas brand abbreviation, Label Type does not display

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