

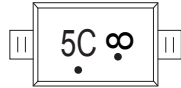
SOD-523 Plastic-Encapsulate ESD Protection Diodes
DESCRIPTION

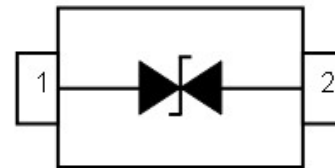
The LESD5Z5.0C_H is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium.

This device has been specifically designed to protect sensitive components which are connected to data and transmission lines from overvoltage caused by ESD (electrostatic discharge), CDE (Cable Discharge Events), and EFT (electrical fast transients).

Features

- ◆ Peak Power Dissipation 75 W (8/20μs)
- ◆ IEC61000-4-2 (ESD) ±30kV (air),
±30kV (contact)
- ◆ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◆ Protects one directional I/O line
- ◆ Low clamping voltage
- ◆ Working voltages : 5V
- ◆ Low leakage current
- ◆ Meets MSL 1 Requirements

Marking

Pin Configuration

Circuit Diagram

Applications

- ◆ Cellular handsets and accessories
- ◆ High Speed Line :USB1.0/2.0, VGA, DVI, SDI
- ◆ Serial and Parallel Ports
- ◆ Notebooks, Desktops, and Servers
- ◆ Portable Instrumentation
- ◆ Peripherals
- ◆ Projection TV

Mechanical Characteristics

- ◆ Package: SOD-523
- ◆ Flammability Rating: UL 94V-0
- ◆ High temperature soldering guaranteed:
260°C/10s
- ◆ Packaging: Tape and Reel
- ◆ Reel size: 7 inch

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
ESD per IEC 61000-4-2 (Air)	VESD	± 30	KV
ESD per IEC 61000-4-2 (Contact)		± 30	
Peak Pulse Power(8/20us)	PPP	75	W
Operating Temperature	T _{OPT}	-40 to +150	°C
Storage Temperature	T _{STG}	-40 to +150	°C
Lead Solder Temperature – Maximum (10 Second Duration)	T _L	260(10 sec.)	°C

The above data are for reference only.

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

Symbol	Param	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Working Voltage				5.0	V
V_{BR}	Reverse Breakdown Voltage	$I_T = 1\text{mA}$	5.6		9.0	V
I_R	Reverse Leakage Current	$V_{RWM} = 5\text{V}$			1.0	μA
V_C	Clamping Voltage	$I_{PP} = 1\text{A}, t_p = 8/20\mu\text{s}$			9.5	V
		$I_{PP} = 5\text{A}, t_p = 8/20\mu\text{s}$			15.0	V
C_J	Junction Capacitance	$V_R = 0\text{V}, f = 1\text{MHz}$		10	15	pF

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ELECTRICAL CHARACTERISTICS CURVE

Fig 1 8/20 μ s Waveform per IEC61000-4-5

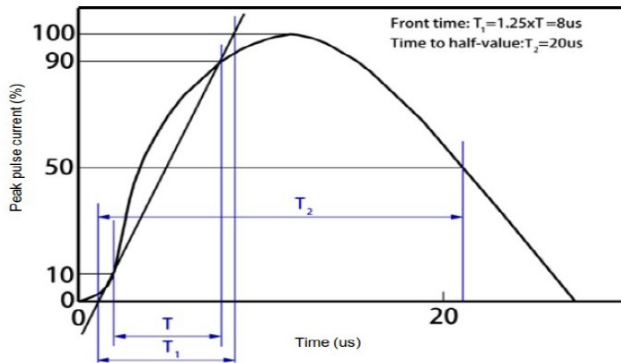


Fig 2 Contact Discharge Current Waveform per IEC 61000-4-2)

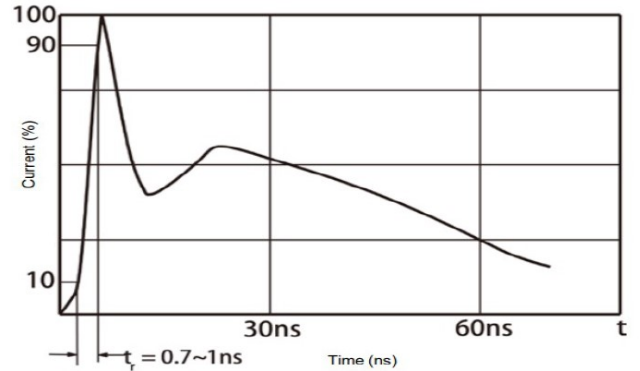


Fig 3 Power Derating Curve

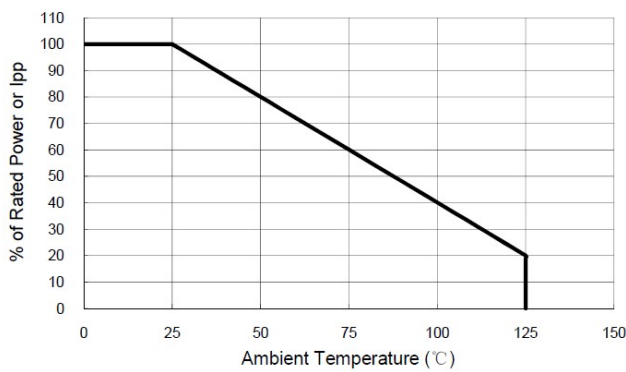


Fig 4 Voltage vs Capacitance

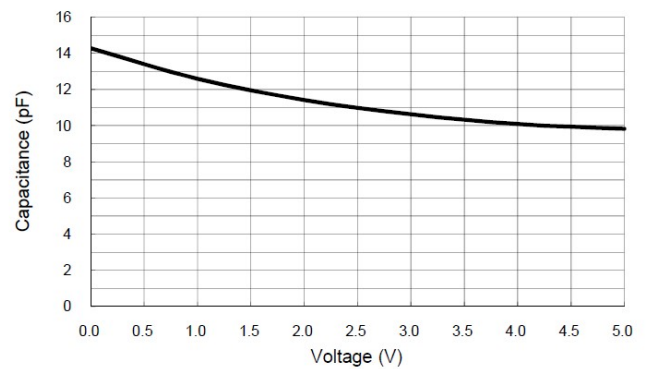


Fig 5 Transmission Line Pulsing (TLP) Measurement

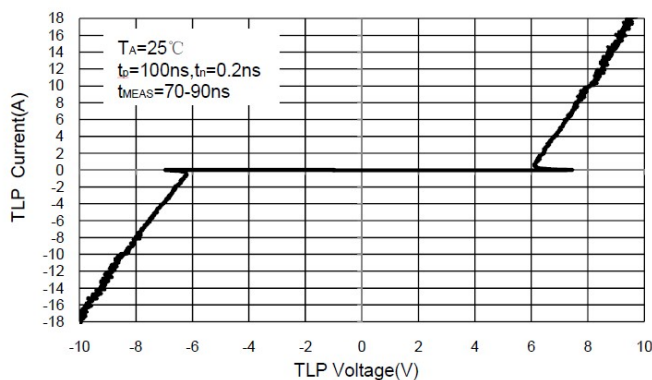
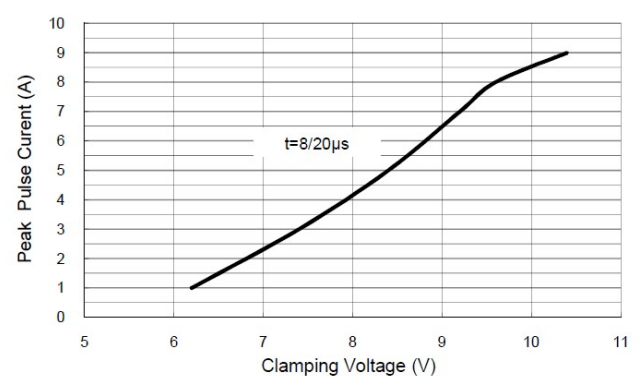


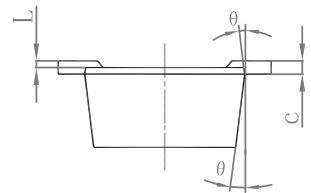
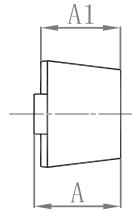
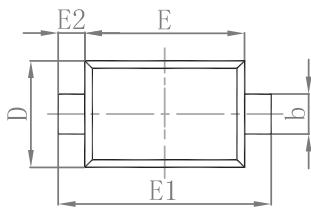
Fig 6 Clamping Voltage vs Peak Pulse Current



The curve above is for reference only.

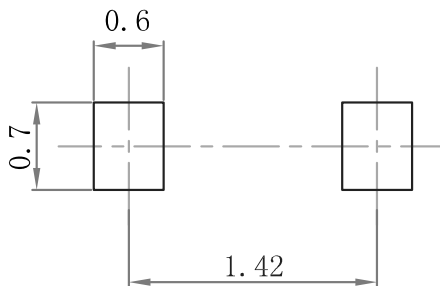
Outline Drawing

SOD-523 Package Outline Dimensions



Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min	Max	Min	Max
A	0.510	0.770	0.020	0.031
A1	0.500	0.770	0.020	0.031
b	0.250	0.400	0.010	0.016
c	0.080	0.150	0.003	0.006
D	0.750	1.000	0.030	0.040
E	1.100	1.300	0.043	0.051
E1	1.500	1.700	0.059	0.067
E2	0.150	0.250	0.006	0.010
L	0.000	0.070	0.000	0.003
K	0°	8°	0°	8°

Suggested Pad Layout



Note:

1. Controlling dimension: in/millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

PACKAGE SPECIFICATIONS

Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (pcs)	Box Size (mm)	QTY/Box (pcs)	Carton Size (mm)	Q'TY/Carton (pcs)
SOD-523	7'	178	3000	183×188×80	18000	386×265×215	108000

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