

## SOD-323 Plastic-Encapsulate ESD Protection Diodes

### DESCRIPTION

The LESD3Z5.0C 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).

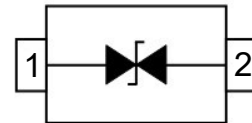
### Features

- ◆ Peak power dissipation: 60W (8/20 $\mu$ s)
- ◆ IEC61000-4-2 (ESD)  $\pm 15$ kV (air),  $\pm 8$ kV (contact)
- ◆ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◆ Protects one I/O line)
- ◆ Low clamping voltage
- ◆ Working voltages : 5V
- ◆ Low leakage current
- ◆ Meets MSL 1 Requirements

### Pin Configuration



### Circuit Diagram



### Applications

### Absolute Maximum Ratings (T<sub>A</sub>=25°C unless otherwise specified)

| Parameter                                              | Symbol           | Value        | Unit |
|--------------------------------------------------------|------------------|--------------|------|
| ESD per IEC 61000-4-2 (Air)                            | VESD             | $\pm 30$     | KV   |
| ESD per IEC 61000-4-2 (Contact)                        |                  | $\pm 30$     |      |
| Peak Pulse Power(8/20 $\mu$ s )                        | PPP              | 60           | W    |
| Operating Temperature                                  | T <sub>OPT</sub> | -55 to +150  | °C   |
| Storage Temperature                                    | T <sub>STG</sub> | -55 to +150  | °C   |
| Lead Solder Temperature – Maximum (10 Second Duration) | T <sub>L</sub>   | 260(10 sec.) | °C   |

The above data are for reference only.

**Electrical Characteristics** (TA=25°C unless otherwise specified)

| Symbol    | Parameter                 | Test Condition                 | Min | Typ | Max | Units |
|-----------|---------------------------|--------------------------------|-----|-----|-----|-------|
| $V_{RWM}$ | Reverse Working Voltage   |                                |     |     | 5.0 | V     |
| $V_{BR}$  | Reverse Breakdown Voltage | $I_T = 1mA$                    | 5.6 |     | 7.8 | V     |
| $I_R$     | Reverse Leakage Current   | $V_{RWM} = 5.0V$               |     |     | 1.0 | uA    |
| $V_C$     | Clamping Voltage          | $I_{PP} = 5A, t_p = 8/20\mu s$ |     |     | 12  | V     |
| $C_J$     | Junction Capacitance      | $V_R = 0V, f = 1MHz$           |     |     | 18  | pF    |

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## ELECTRICAL CHARACTERISTICS CURVE

Fig 1 8/20 $\mu$ s Waveform per IEC61000-4-5

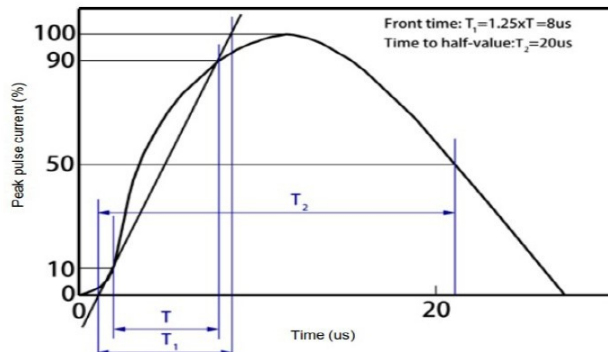


Fig 2 Contact Discharge Current Waveform per IEC 61000-4-2)

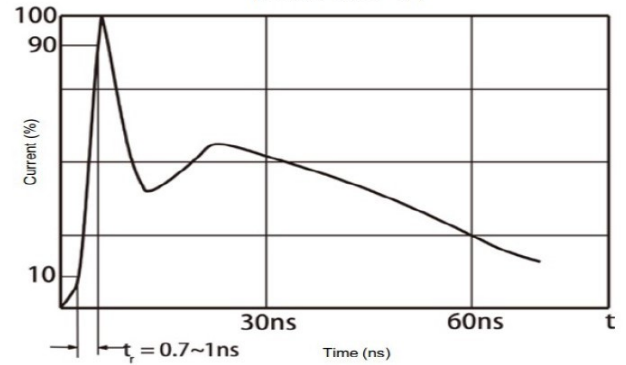


Fig 3 Power Derating Curve

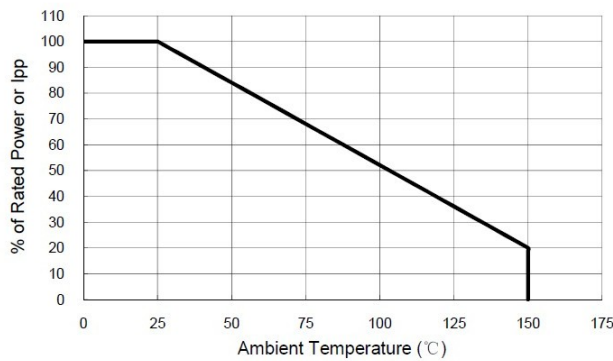


Fig 4 Voltage vs Capacitance

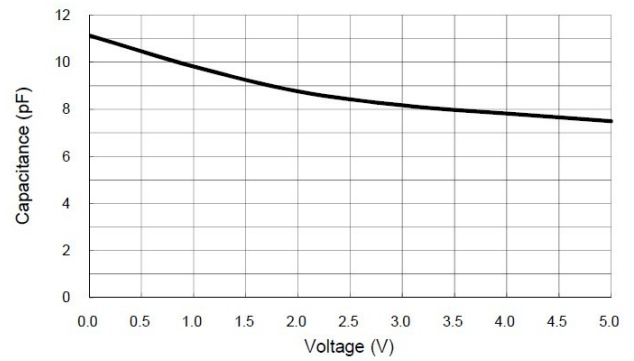


Fig 5 Voltage Sweeping

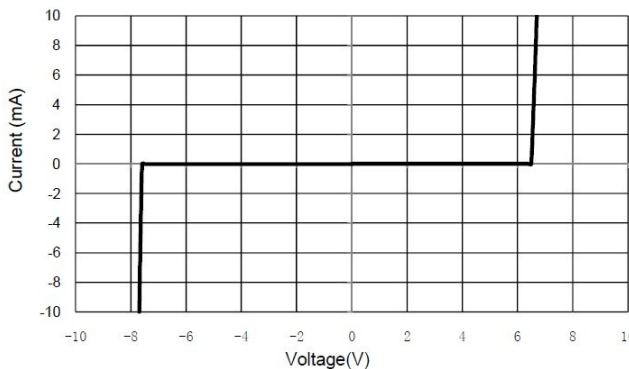
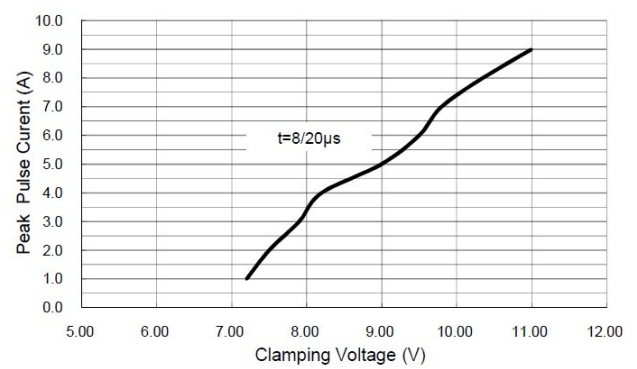


Fig 6 Clamping Voltage vs Peak Pulse Current



The curve above is for reference only.