

## General description

Unidirectional ElectroStatic Discharge (ESD) protection diode in a SOD523 plastic package designed to protect one transmission or data line from the damage caused by ESD and other transients

## Features and benefits

- Unidirectional ESD protection of one line
- Reverse stand-off voltage: 24V Max
- Low leakage current: nA Level
- Response time is typically < 1 ns
- Low clamping voltage:  $V_C < 55\text{ V}$  @  $I_{PP} = 4\text{A}$
- ESD Protection: 20kV(air)/ 15kV(contact) ( IEC61000-4-2)
- Surge Protection: 4A ( IEC 61000-4-5 8/20  $\mu\text{s}$ )



SOD523

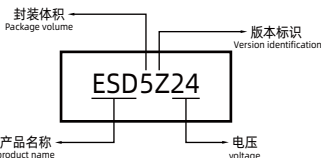
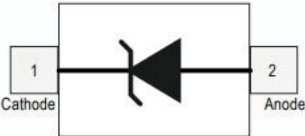
## Application information

- Computers and peripherals
- Communication systems
- Audio equipment
- CAN bus protection
- Power supplies

## Ordering information

| Device  | Package | Reel Size | Qty(PCS) |
|---------|---------|-----------|----------|
| ESD5Z24 | SOD523  | 7 Inch    | 3000     |

## Ordering information

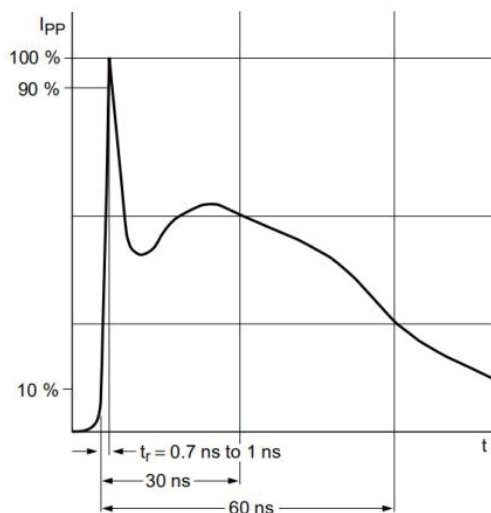
| Marking | Naming rule                                                                         | Graphic symbol                                                                       |
|---------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| N5      |  |  |

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

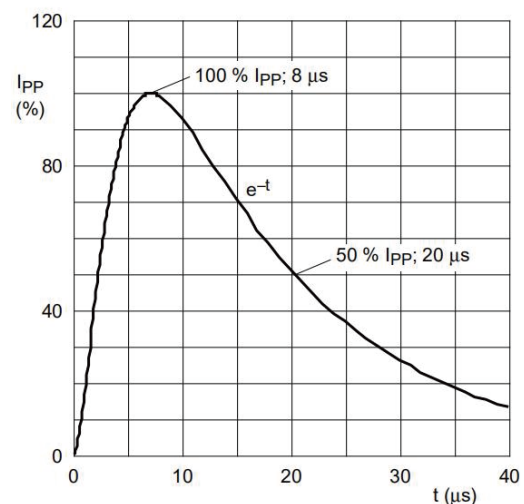
| Parameter                                         | Symbol    | Value       | Unit             |
|---------------------------------------------------|-----------|-------------|------------------|
| Peak Pulse Power ( $t_p = 8/20\mu\text{s}$ )      | $P_{PPM}$ | 330         | W                |
| Peak Pulse Current ( $t_p = 8/20\mu\text{s}$ )    | $I_{PPM}$ | 4           | A                |
| Maximum lead temperature for soldering during 10s | $T_L$     | 260         | $^\circ\text{C}$ |
| Storage Temperature Range                         | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |
| Operating Temperature Range                       | $T_{OP}$  | -40 to +125 | $^\circ\text{C}$ |
| Maximum junction temperature                      | $T_j$     | 150         | $^\circ\text{C}$ |
| ESD voltage IEC 61000-4-2 (air discharge)         | $V_{ESD}$ | 20          | kV               |
| ESD voltage IEC 61000-4-2 (contact discharge)     | $V_{ESD}$ | 15          | kV               |

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

| Parameter                  | Symbol    | Min  | Typ | Max  | Unit | Condition                                   |
|----------------------------|-----------|------|-----|------|------|---------------------------------------------|
| Reverse Working Voltage    | $V_{RWM}$ | --   | --  | 24.0 | V    |                                             |
| Breakdown Voltage          | $V_{BR}$  | 26.0 | --  | --   | V    | $I_T = 1\text{mA}$                          |
| Leakage Current $I_{Leak}$ | $I_R$     | --   | --  | 100  | nA   | $V_{RWM} = 24\text{V}$                      |
| Clamping Voltage           | $V_C$     | --   | --  | 55.0 | V    | $I_{PP} = 4\text{A}, t_p = 8/20\mu\text{s}$ |
| Junction Capacitance       | $C_J$     | --   | 20  | 30   | pF   | $V_R = 0\text{V}, f = 1\text{MHz}$          |

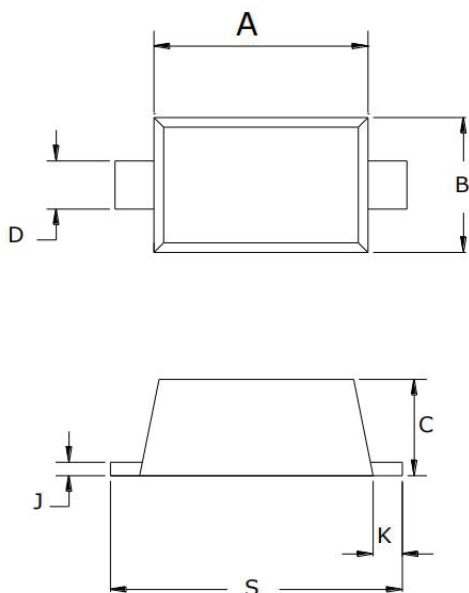


IEC61000-4-2 Waveform


IEC 61000-4-5 Waveform (8/20 $\mu\text{s}$  pulse)

## Package Outline Dimensions

SOD523



| SYMBOL | MILLIMETERS |      |
|--------|-------------|------|
|        | MIN         | MAX  |
| A      | 1.10        | 1.30 |
| B      | 0.70        | 0.90 |
| C      | 0.50        | 0.70 |
| D      | 0.25        | 0.35 |
| J      | 0.07        | 0.20 |
| K      | 0.15        | 0.25 |
| S      | 1.50        | 1.70 |

## Soldering Footprint (mm)

