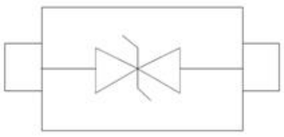
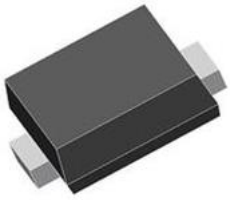
# ESD5Z5C

**TVS Diode**

## Features

- 150 Watts peak pulse power (tp = 8/20μs)
- Transient protection for high speed data lines to IEC 61000-4-2 (ESD) ±15kV (air), ±8kV (contact) IEC 61000-4-4 (EFT) 40A (5/50ns)
- Protects One Power or I/O Port
- Low leakage current
- Low operating and clamping voltages
- Solid-state silicon avalanche technology





SOD523

## Applications

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Portable Instrumentation
- Personal Digital Assistant (PDA)

## Maximum Rating @ Ta=25℃ unless otherwise specified

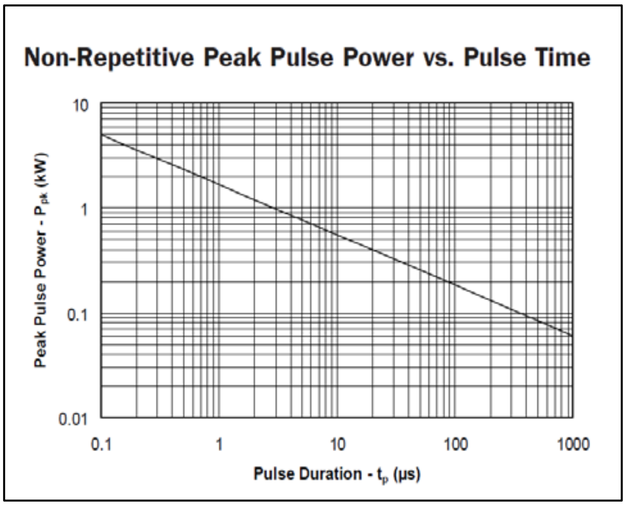
| Symbol | Parameter | Ratings | Units |
|---|---|---|---|
| $P_{PK}$ | Peak Pulse Power (tp = 8/20μs) | 150 | Watts |
| $T_L$ | Lead Soldering Temperature | 260(10sec.) | ℃ |
| $T_J$ | Operating Temperature | -55 to +125 | ℃ |
| $T_{STG}$ | Storage Temperature | -55 to +150 | ℃ |

## Electrical Characteristics@ Ta=25℃ unless otherwise

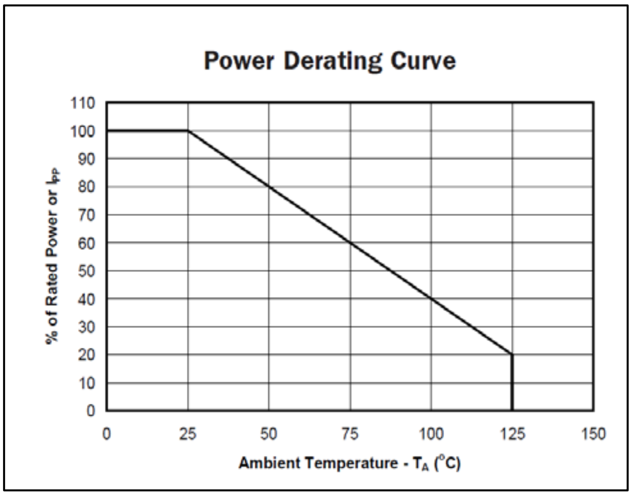
| Parameter | Marking | $V_{RWM}$ @$I_R$ | | $V_{BR}$@ImA | $V_C$@1A | $V_C$@$I_{PP}$ | | $C_J$ |
|---|---|---|---|---|---|---|---|---|
| | | V | μA | V | V | V | A | pF |
| | | | MAX | MIN | MAX | MAX | | MAX |
| **ESD5Z5C** | - | 5 | 1 | 6 | 9.5 | 15 | 8 | 15 |

Ver.1.0

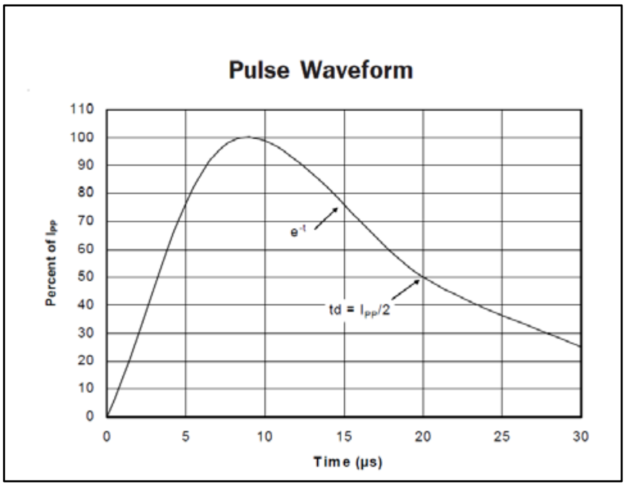
## Typical Characteristics@ Ta=25℃ unless otherwise specified



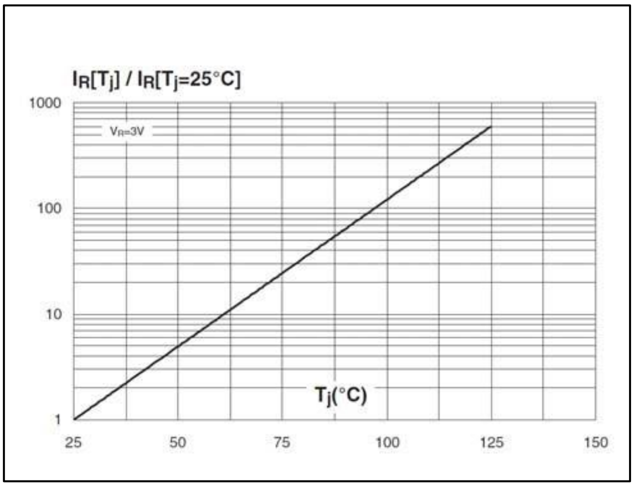
Non-Repetitive Peak Pulse Power vs. Pulse Time



Power Derating Curve



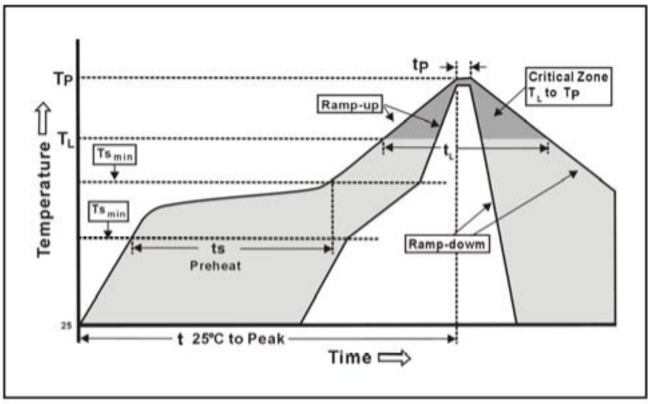
Pulse Waveform



$I_R[T_j] / I_R[T_j=25°C]$

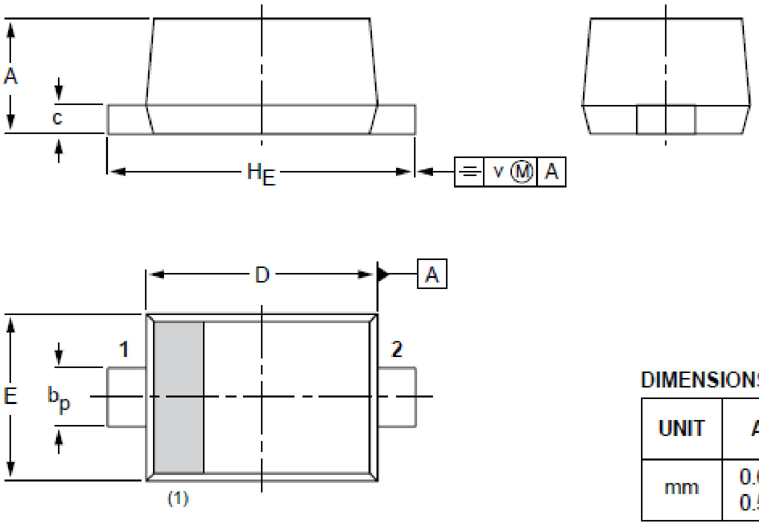
## Soldering Parameters

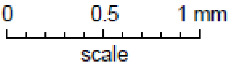
| | | |
|---|---|---|
| **Reflow Condition** | | **Fb – Free assembly** |
| **Pre Heat** | **-Temperature Min ($T_{s(Min)}$)** | **150°C** |
| | **-Temperature Max ($T_{s(Max)}$)** | **200°C** |
| | **-Time (Min to max) ($t_s$)** | **60 – 180 secs** |
| **Average ramp up rate (Liquidus) Temp ($T_L$) to peak** | | **3°C/second Max** |
| **$T_{S(Max)}$ to $T_L$ - Ramp-up Rate** | | **3°C/second Max** |
| **Reflow** | **-Temperature ($T_L$) (Liquidus)** | **217°C** |
| | **-Temperature ($t_L$)** | **60 – 150 seconds** |
| **Peak Temperature ($T_p$)** | | **$250^{+0/-5}$ °C** |
| **Time within 5°C of actual peak Temperature ($t_p$)** | | **20 – 40 seconds** |
| **Ramp-dowm Rate** | | **6°C/second Max** |
| **Time 25°C to peak Temperature ($T_p$)** | | **8 minutes Max.** |
| **Do not exceed** | | **260°C** |



## Package Outline

**SOD523**





DIMENSIONS (mm are the original dimensions)

| UNIT | A | $b_p$ | c | D | E | $H_E$ | v |
|---|---|---|---|---|---|---|---|
| mm | 0.65<br>0.58 | 0.34<br>0.26 | 0.17<br>0.11 | 1.25<br>1.15 | 0.85<br>0.75 | 1.65<br>1.55 | 0.1 |