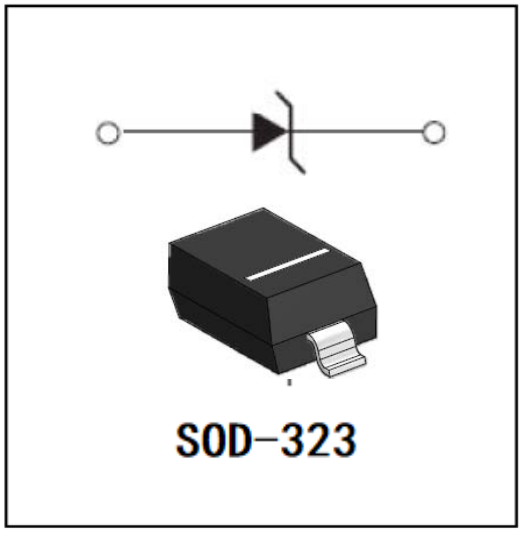
# ESD Protection Diode




## Features

- For sensitive ESD protection
- Low leakage
- Uni-directional ESD protection of one line
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

## Mechanical Data

- **Package**: SOD323
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end
- **Marking:** ZE

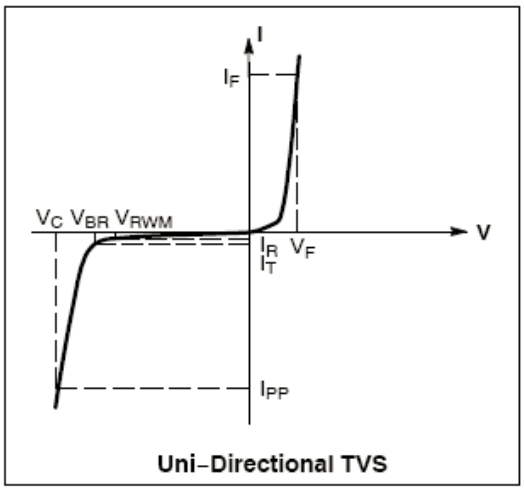
## ■Maximum Ratings

| PARAMETER | SYMBOL | LIMITS | UNIT |
|---|---|---|---|
| Operating Junction & Storage Temperature | $T_J$&$T_{STG}$ | -45 to +125 | ℃ |
| IEC61000-4-2(ESD)Air | VESD (1) | ±15 | KV |
| IEC61000-4-2(ESD)Contact | | ±8 | KV |
| Peak Pulse Current | $I_{PP}$ (2) | 22 | A |
| Peak Power Dissipation, tP=8/20μs | PPK (2) | 374 | W |

(1).Device stressed with ten non-repetitive ESD pulses.
(2).Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5.

## ■Electrical Parameter

| PARAMETER | SYMBOL |
|---|---|
| Clamping Voltage@ $I_{PP}$ | $V_C$ |
| Breakdown Voltage@ $I_T$ | $V_{BR}$ |
| Peak Pulse Current | $I_{PP}$ |
| Test Current | $I_T$ |
| Reverse Leakage Current@ $V_{RWM}$ | $I_R$ |
| Reverse Standoff Voltage | $V_{RWM}$ |
| Forward Voltage@ $I_F$ | $V_F$ |
| Forward Current | $I_F$ |
| Peak Power Dissipation | $P_{Pk}$ |
| Max. Capacitance @ $V_R$=0 and f=1MHz | C |



## ■Electrical Characteristics（$T_a$=25℃ Unless otherwise specified）

| PARAMETER | Symbol | UNIT | Conditions | Min | Typ | Max |
|---|---|---|---|---|---|---|
| Reverse Standoff Voltage | $V_{RWM}$ (1) | V | | | | 3.3 |
| Reverse Leakage Current | $I_R$ | uA | VRWM=3.3V | | | 0.5 |
| Breakdown Voltage | $V_{(BR)}$ | V | $I_T$=1mA | 4.5 | | 6.5 |
| Clamping Voltage | $V_C$ (2) | V | $I_{PP}$=22A | | | 17 |
| Forward voltage | VF | V | IF=10mA | | | 1.1 |
| Junction Capacitance | $C_J$ | pF | $V_R$=0V,f=1MHz | | | 400 |

(1).Other voltages available upon request.
(2).Non-repetitive current pulse 8/20 μ s exponential decay waveform according to IEC61000-4-5

## ■Ordering Information (Example)

| PREFERED P/N | PACKING CODE | UNIT WEIGHT(g) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---|---|---|---|---|---|---|
| ESD3V3D3 | F2 | Approximate 0.004 | 3000 | 30000 | 120000 | 7” reel |

## ■ Characteristics (Typical)

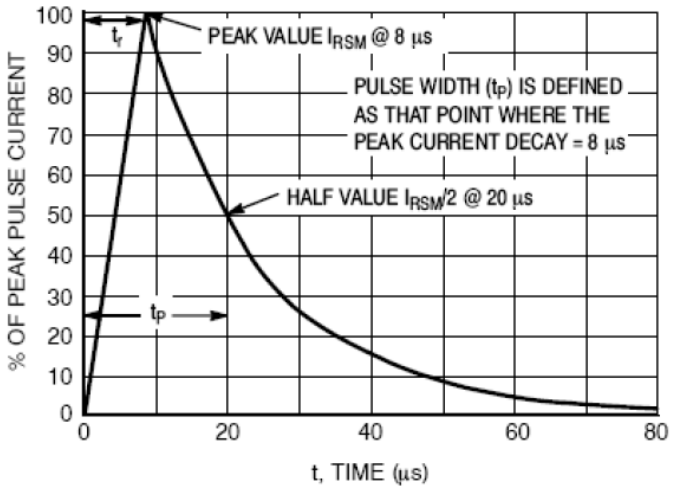



Figure 1. 8 x 20 μs Pulse Waveform

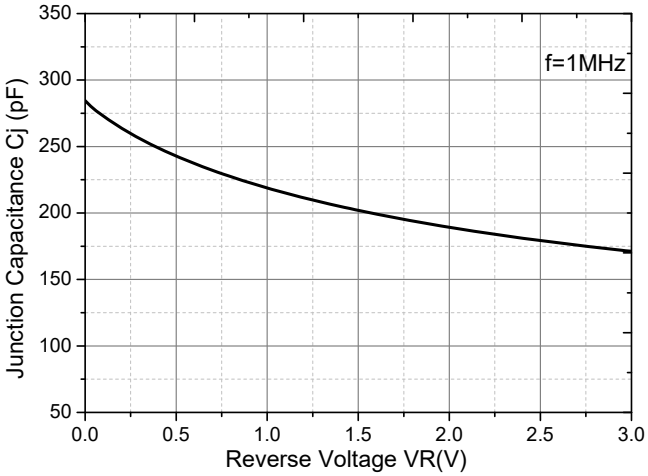
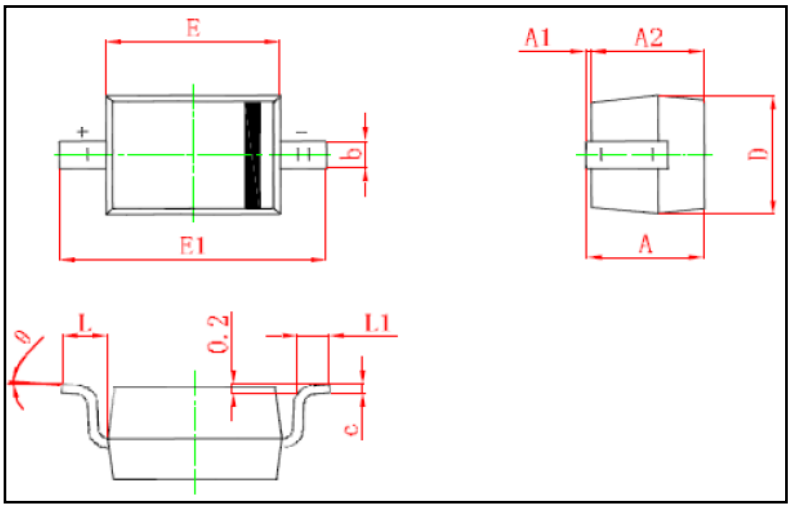


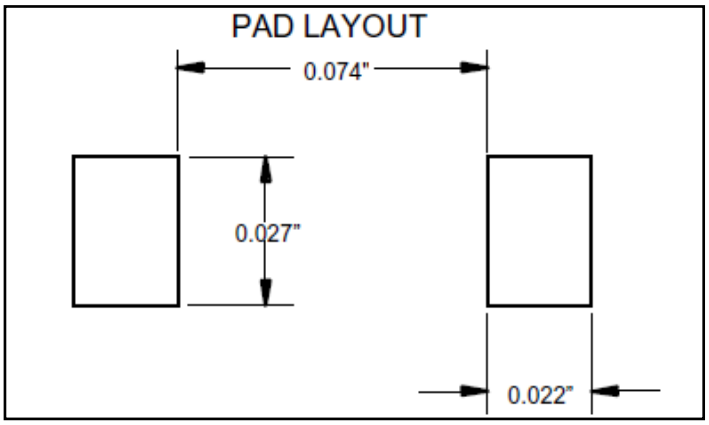

Figure 2. Capacitance Characteristics

## ■ Outline Dimensions




| Symbol | Min. (mm) | Max. (mm) |
|---|---|---|
| A | | 1.000 |
| A1 | 0.000 | 0.100 |
| A2 | 0.800 | 0.900 |
| b | 0.250 | 0.400 |
| c | 0.080 | 0.150 |
| D | 1.200 | 1.400 |
| E | 1.600 | 1.800 |
| E1 | 2.500 | 2.700 |
| L | 0.475REF | |
| L1 | 0.250 | 0.400 |
| θ | 0° | 8° |

## ■ Soldering Footprint




Unit：inches

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