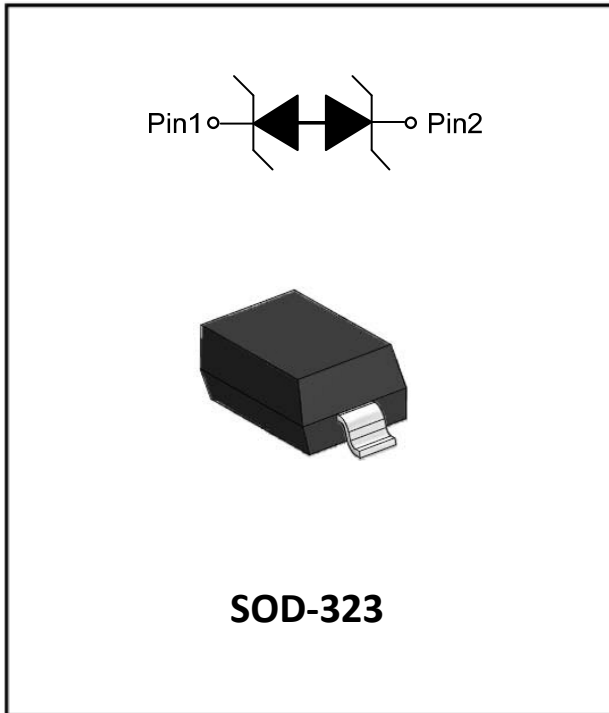


## 1- Line, Bi-directional, Transient Voltage Suppressor



### Features

- Stand-off voltage:  $\pm 36V$  Max
- Transient protection for each line according to  
IEC61000-4-2(ESD):  $\pm 30kV$  (contact)  
IEC61000-4-5(surge): 5A (8/20 $\mu s$ )
- Low leakage current:
- Ultra low clamping voltage
- RoHS Compliant

### Applications

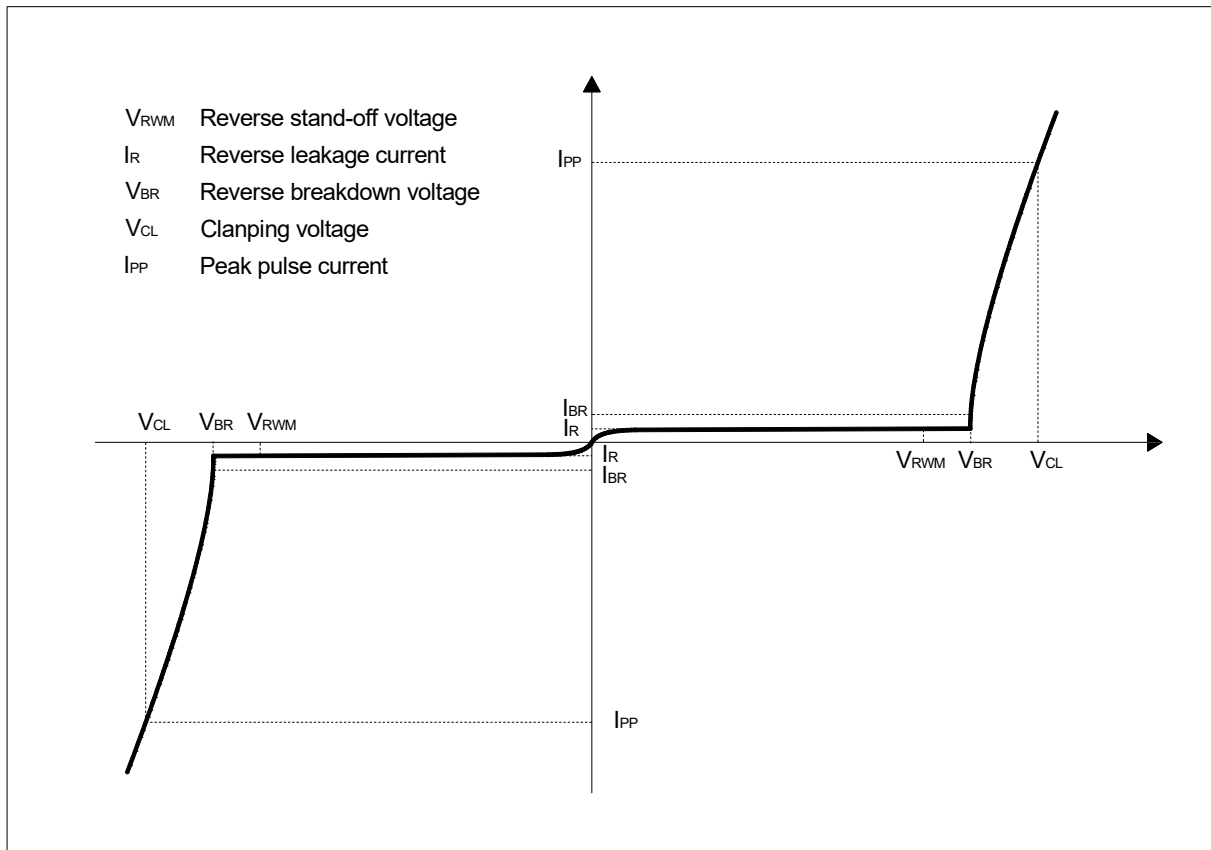
- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Peripherals
- Pagers Peripherals
- Desktop and Servers

### Mechanical Data

- Package: SOD-323
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound
- Moisture Sensitivity: Level 1 per J-STD-020
- Marking Information: See Below



### ■Definitions of electrical characteristics





# ESD36VD3B

## ■Maximum Ratings

| PARAMETER                                       | SYMBOL    | LIMITS   | UNIT        |
|---|-----------|----------|-------------|
| Peak pulse power ( $t_p = 8/20\mu s$ )          | $P_{pk}$  | 380      | W           |
| Peak pulse current ( $t_p = 8/20\mu s$ )        | $I_{PP}$  | 5        | A           |
| ESD according to IEC61000-4-2 air discharge     | $V_{ESD}$ | $\pm 30$ | KV          |
| ESD according to IEC61000-4-2 contact discharge |           | $\pm 30$ |             |
| Junction temperature                            | $T_J$     | 125      | $^{\circ}C$ |
| Storage temperature                             | $T_{STG}$ | -55~150  | $^{\circ}C$ |

## ■Electrical Characteristics ( $T_a=25^{\circ}C$ Unless otherwise specified)

| PARAMETER                       | Symbol    | UNIT    | Conditions                     | Min | Typ | Max |
|---------------------------------|-----------|---------|--------------------------------|-----|-----|-----|
| Reverse maximum working voltage | $V_{RWM}$ | V       |                                |     |     | 36  |
| Reverse leakage current         | $I_R$     | $\mu A$ | $V_{RWM} = 36V$                |     |     | 0.5 |
| Reverse breakdown voltage       | $V_{BR}$  | V       | $I_{BR} = 1mA$                 | 38  |     | 47  |
| Clamping voltage <sup>2)</sup>  | $V_{CL}$  | V       | $I_{PP} = 1A, t_p = 8/20\mu s$ |     | 52  | 56  |
|                                 |           | V       | $I_{PP} = 5A, t_p = 8/20\mu s$ |     | 70  | 76  |
| Junction capacitance            | $C_J$     | pF      | $V_R = 0V, f = 1MHz$           |     | 13  | 20  |

Notes:

- (1). TLP parameter:  $Z_0 = 50\Omega$ ,  $t_p = 100ns$ ,  $t_r = 2ns$ , averaging window from 60ns to 80ns.  $R_{DYN}$  is calculated from 4A to 16A.
- (2). Non-repetitive current pulse, according to IEC61000-4-5.

## ■Ordering Information (Example)

| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(mg) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|-----------------|----------------------|-------------------------|----------------------------|---------------|
| ESD36VD3B     | F2           | Approximate 4   | 3000                 | 30000                   | 120000                     | 7" reel       |



## ■ Characteristics (Typical)

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

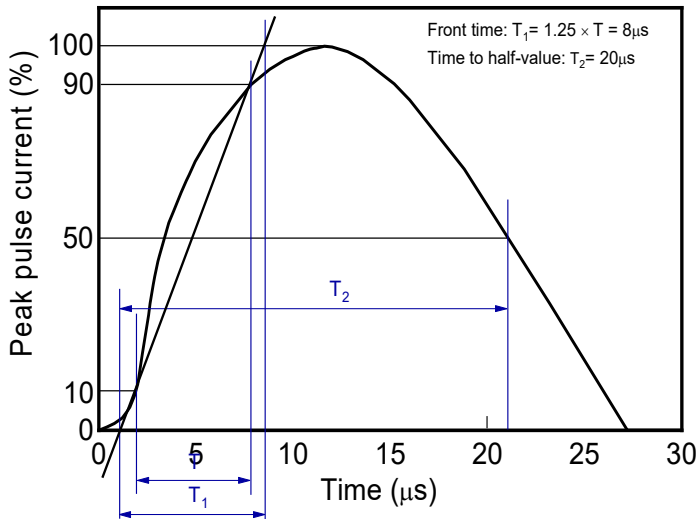


Fig.2 Contact discharge current waveform per IEC61000-4-2

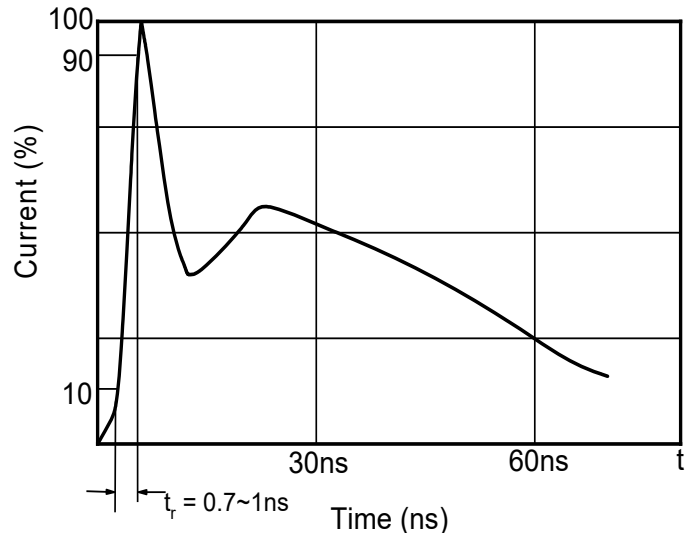


Fig.3 Clamping voltage vs. Peak pulse current

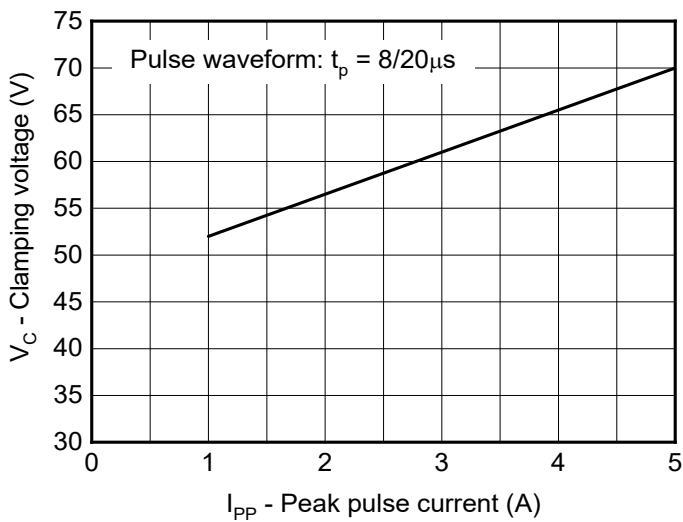


Fig.4 Capacitance vs. Reverse voltage

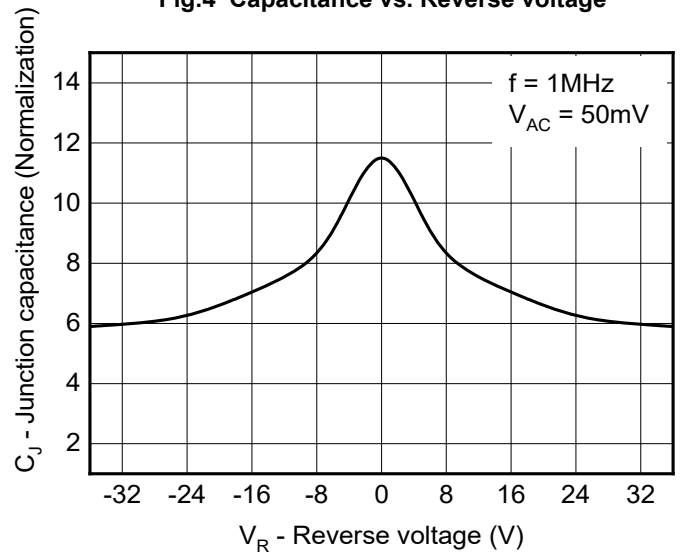


Fig.5 Non-repetitive peak pulse power vs. Pulse time

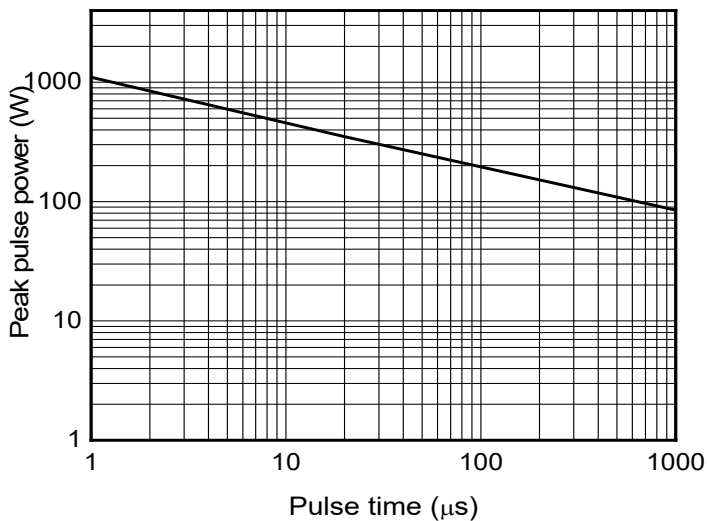
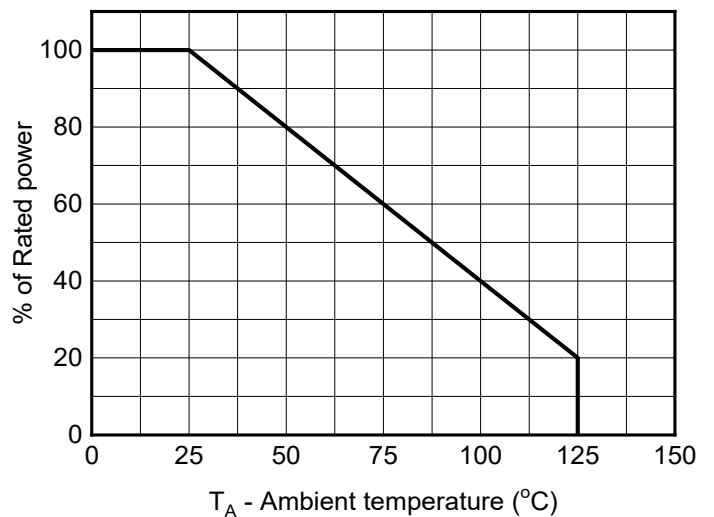


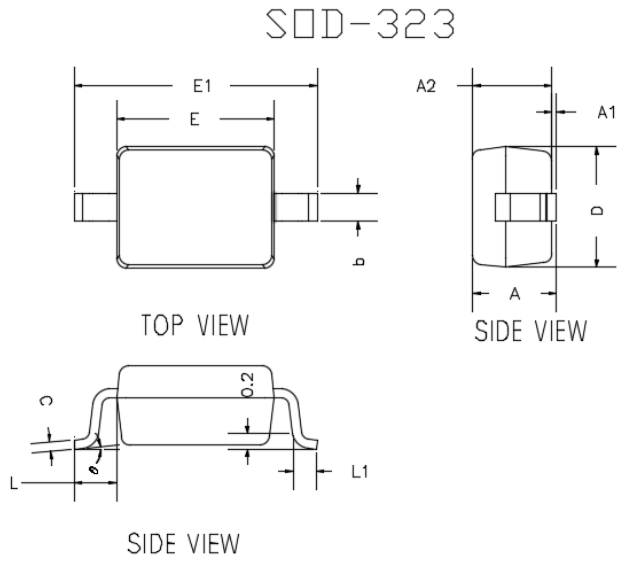
Fig.6 Power derating vs. Ambient temperature





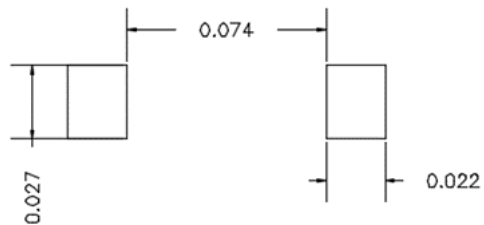
# ESD36VD3B

## ■ Outline Dimensions



| DIMENSIONS |           |        |          |        |
|------------|-----------|--------|----------|--------|
| DIM        | INCHES    |        | MM       |        |
|            | MIN       | MAX    | MIN      | MAX    |
| A          | ---       | 0.0393 | ---      | 1.0000 |
| A1         | 0.0000    | 0.0039 | 0.0000   | 0.1000 |
| A2         | 0.0314    | 0.0354 | 0.8000   | 0.9000 |
| b          | 0.0098    | 0.0157 | 0.2500   | 0.4000 |
| c          | 0.0031    | 0.0059 | 0.0800   | 0.1500 |
| D          | 0.0472    | 0.0551 | 1.2000   | 1.4000 |
| E          | 0.0629    | 0.0709 | 1.6000   | 1.8000 |
| E1         | 0.0984    | 0.1063 | 2.5000   | 2.7000 |
| L          | 0.0187TYP |        | 0.475TYP |        |
| L1         | 0.0098    | 0.0157 | 0.250    | 0.400  |
| θ          | 0°        | 8°     | 0°       | 8°     |

## ■ Soldering Footprint



UNIT: inch

SUGGESTED SOLDER PAD LAYOUT



## ESD36VD3B

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