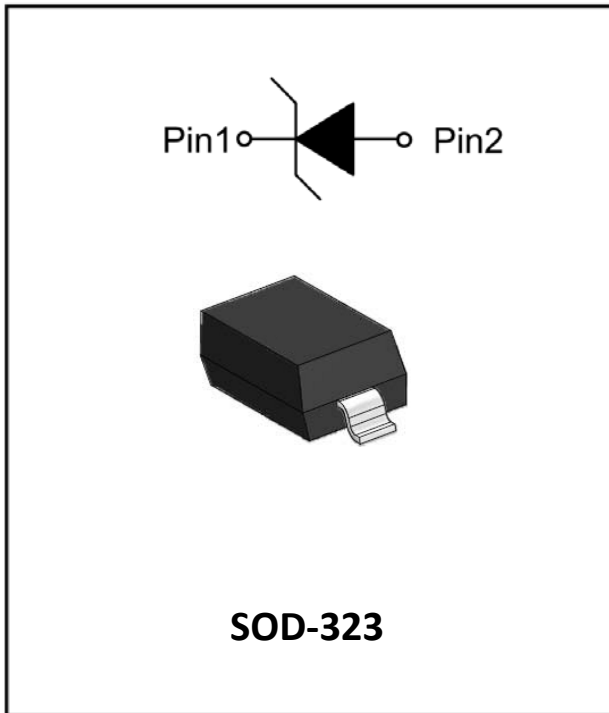


## 1- Line, Uni-directional, ESD protection diode



### Features

- Transient protection for each line according to IEC61000-4-2(ESD):  $\pm 30\text{kV}$  contact,  $\pm 30\text{kV}$  air IEC61000-4-5:5A( $t_p=8/20\mu\text{s}$ )
- Low leakage current
- Ultra low clamping voltage
- RoHS Compliant
- Part no. with suffix "Q" means AEC-Q101 qualified

### Applications

- Switches / Buttons
- Test Equipment/Instrumentation
- Point-of-Sale Terminals
- Medical Equipment
- Notebooks / Desktops / Servers
- Computer Peripherals
- CAN Bus protection
- Automotive applications

### Mechanical Data

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

### ■ Definitions of electrical characteristics





# ESD36VD3Q

## ■Maximum Ratings

| PARAMETER                                       | SYMBOL    | LIMITS   | UNIT        |
|---|-----------|----------|-------------|
| Peak pulse power ( $t_p = 8/20\mu s$ )          | $P_{pk}$  | 350      | W           |
| 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                            | $T_J$     | -55~150  | $^{\circ}C$ |
| Storage temperature                             | $T_{STG}$ | -55~150  | $^{\circ}C$ |

Notes:

CAUTION: Stresses above those listed in "Absolute Maximum Ratings" may cause permanent damage to the component. This is a stress only rating and operation of the component at these or any other conditions above those indicated in the operational sections of this specification is not implied.

## ■Electrical Characteristics ( $T_J=25^{\circ}C$ )

| PARAMETER                        | Symbol    | UNIT     | Conditions                      | Min | Typ | Max |
|----------------------------------|-----------|----------|---------------------------------|-----|-----|-----|
| Reverse Standoff Voltage         | $V_{RWM}$ | V        | $I_R \leq 1\mu A$               |     |     | 36  |
| Reverse breakdown voltage        | $V_{BR}$  | V        | $I_{BR} = 1mA$                  | 40  |     | 44  |
| Reverse leakage current          | $I_R$     | $\mu A$  | $V_{RWM} = 36V$                 |     |     | 1.0 |
| Forward Voltage                  | $V_F$     | V        | $I_F = 10mA$                    |     |     | 1.1 |
| Clamping voltage <sup>1)</sup>   | $V_C$     | V        | $I_{PP} = 1A, t_p = 8/20\mu s$  |     |     | 55  |
|                                  |           |          | $I_{PP} = 5A, t_p = 8/20\mu s$  |     |     | 75  |
| Dynamic resistance <sup>2)</sup> | $R_{DYN}$ | $\Omega$ | TLP, $t_p=100ns, I/O$ to Ground |     | 0.8 |     |
| Peak Pulse Current               | $I_{PP}$  | A        | $t_p = 8/20\mu s$               |     |     | 5   |
| Junction capacitance             | $C_J$     | pF       | $V_R = 0V, f = 1MHz$            |     | 24  | 35  |

Notes:

(1). Non-repetitive current pulse, according to IEC61000-4-5.

(2). 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.

## ■Ordering Information (Example)

| PREFERED P/N | PACKING CODE | UNIT WEIGHT(mg) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|--------------|--------------|-----------------|----------------------|-------------------------|----------------------------|---------------|
| ESD36VD3Q    | F2           | Approximate 4.5 | 3000                 | 30000                   | 120000                     | 7 reel        |



## ■ Characteristics (Typical)

Fig.1: Non-Repetitive Peak Pulse Power vs. Pulse Time

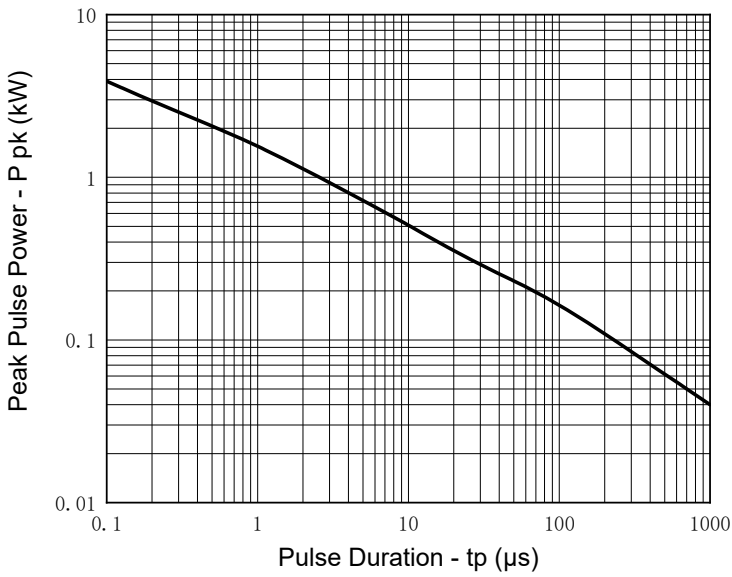


Fig.2: Capacitance vs. Bias

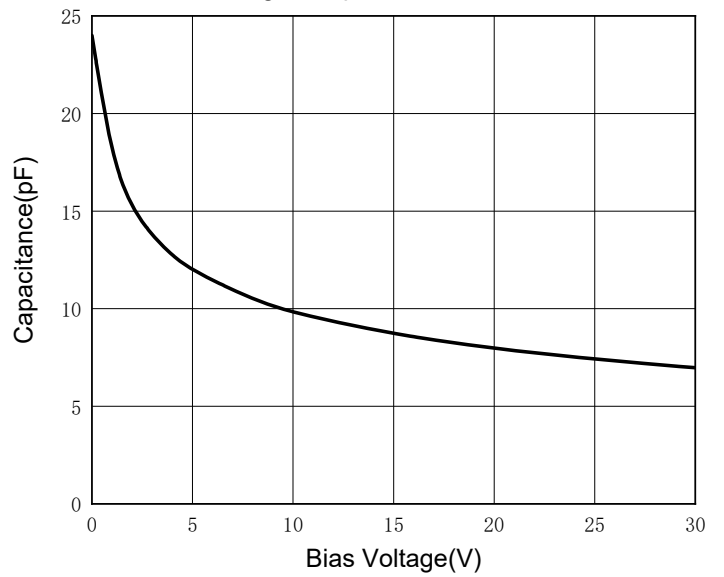


Fig.3: Power Derating Curve

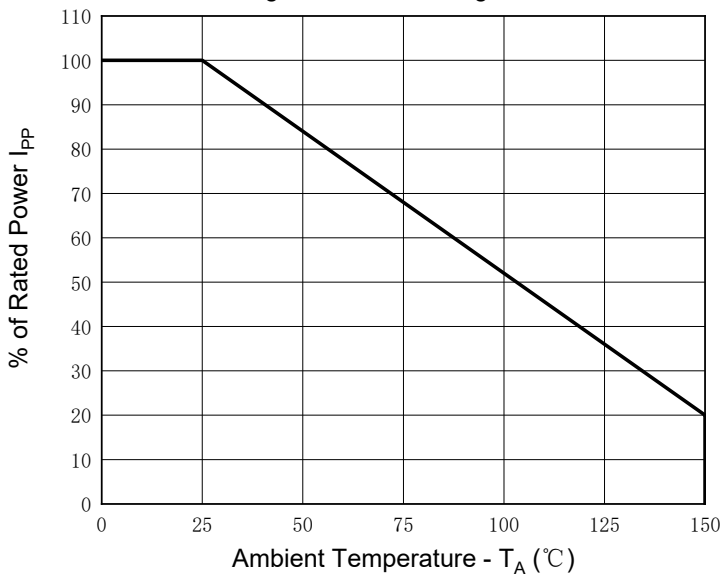


Fig.4: 8/20μs Pulse Waveform

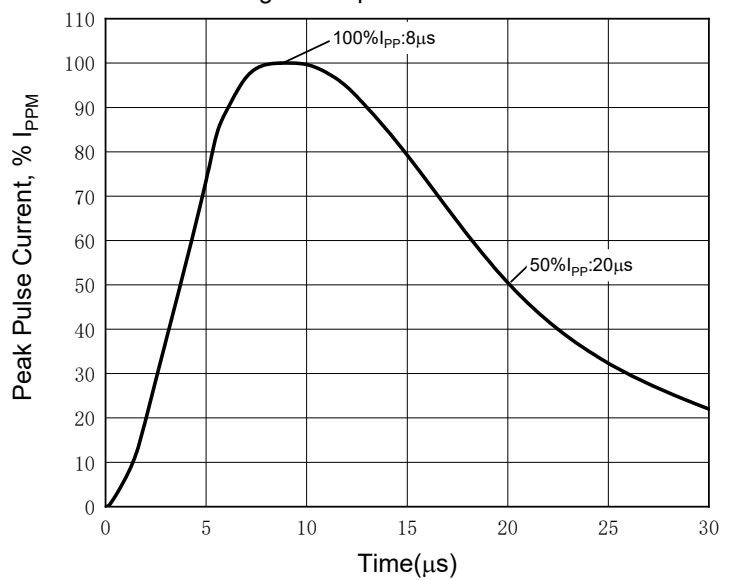
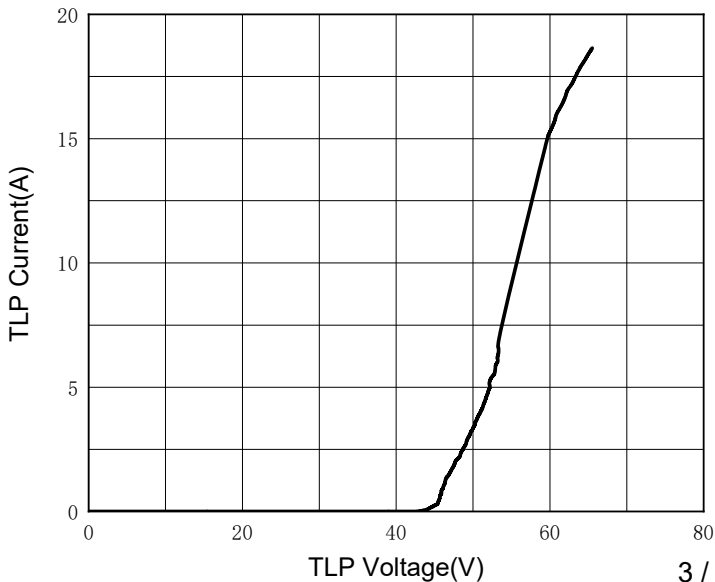


Fig.5: Transmission Line Pulsing (TLP) Plot

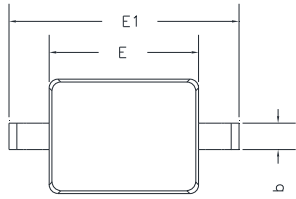




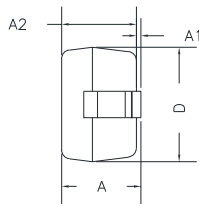
# ESD36VD3Q

## ■ Outline Dimensions

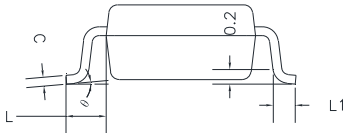
SOD-323



TOP VIEW

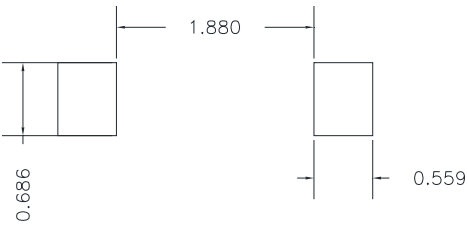


SIDE VIEW



SIDE VIEW

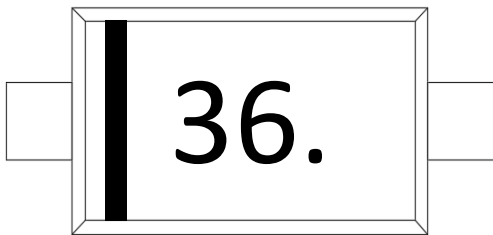
| DIM | DIMENSIONS |        |          |        |
|-----|------------|--------|----------|--------|
|     | INCHES     |        | MM       |        |
|     | MIN        |        | MIN      | MAX    |
| A   | ---        | 0.0393 | ---      | 1.0000 |
| A1  | 0.0000     | 0.0039 | 0.0000   | 0.1000 |
| 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  |
| e   | 0°         | 8°     | 0°       | 8°     |



UNIT: mm

SUGGESTED SOLDER PAD LAYOUT

## ■ Marking Information



Note:

1. All marking is at middle of the product body
2. All marking is in laser marking
3. Body color: Black



## ESD36VD3Q

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### Disclaimer

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