

## High Speed Switching Diode



**SOD-323**



### Features

- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 1
- $V_{BR}$  100V
- $I_{FAV}$  200mA
- Part no. with suffix "Q" means AEC-Q101 qualified

### Applications

- Low-Leakage
- Automotive

### Mechanical Data

- **Case:** SOD-323
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** D4

### ■ Maximum Ratings ( $T_a=25^{\circ}\text{C}$ Unless otherwise specified)

| PARAMETER                                 | SYMBOL     | UNIT                        | CONDITIONS        | VALUE       |
|-------------------------------------------|------------|-----------------------------|-------------------|-------------|
| Reverse Breakdown Voltage                 | $V_{BR}$   | V                           |                   | 100         |
| Average Forward Current                   | $I_{FAV}$  | mA                          |                   | 200         |
| Non-Repetitive Peak Forward Surge Current | $I_{FSM}$  | A                           | $t_p=1\text{ us}$ | 4           |
| Power Dissipation                         | $P_D$      | mW                          |                   | 250         |
| Thermal Resistance Junction to Ambient    | $R_{thJA}$ | $^{\circ}\text{C}/\text{W}$ |                   | 500         |
| Maximum Junction Temperature              | $T_j$      | $^{\circ}\text{C}$          |                   | 150         |
| Storage Temperature Range                 | $T_{stg}$  | $^{\circ}\text{C}$          |                   | -55 to +150 |

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

| PARAMETER                 | SYMBOL   | UNIT          | CONDITIONS                                                | MIN. | TPY. | MAX. |
|---------------------------|----------|---------------|-----------------------------------------------------------|------|------|------|
| Forward Voltage           | $V_F$    | mV            | $I_F=1\text{mA}$                                          |      |      | 900  |
|                           |          |               | $I_F=10\text{mA}$                                         |      |      | 1000 |
|                           |          |               | $I_F=50\text{mA}$                                         |      |      | 1100 |
|                           |          |               | $I_F=150\text{mA}$                                        |      |      | 1250 |
| Reverse Current           | $I_R$    | nA            | $V_R=75\text{V}$                                          |      |      | 5    |
| Reverse Breakdown Voltage | $V_{BR}$ | V             | $I_R=100\mu\text{A}$                                      | 100  |      |      |
| Junction Capacitance      | $C_j$    | pF            | $V_R=0\text{V}$ , $f=1\text{MHz}$                         |      |      | 4    |
| Reverse Recovery Time     | $t_{rr}$ | $\mu\text{s}$ | $I_F=I_R=10\text{mA}$ , $I_{rr}=0.1I_R$ , $R_L=100\Omega$ |      |      | 3    |



## ■ Ordering Information (Example)

| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(g)     | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|--------------------|----------------------|-------------------------|----------------------------|---------------|
| BAS416Q       | F2           | Approximate 0.0045 | 3000                 | 30000                   | 120000                     | 7" reel       |

## ■ Characteristics (Typical)

Fig.1:  $P_D-T_A$

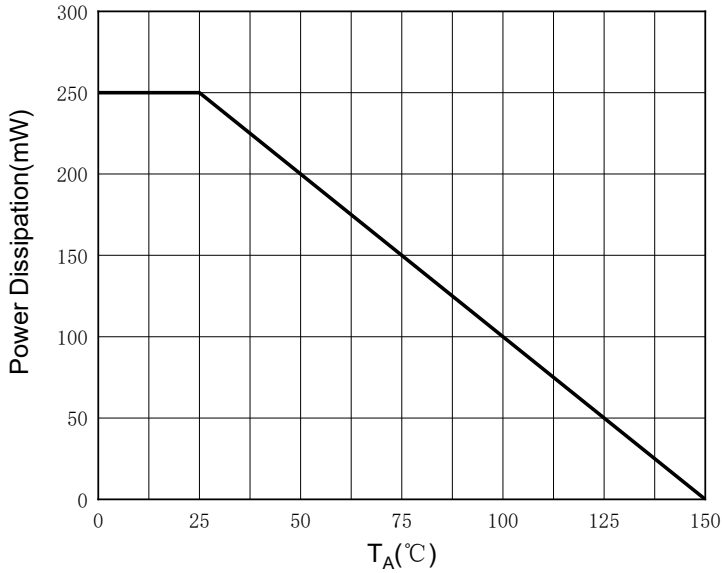


Fig.2: Forward Characteristics

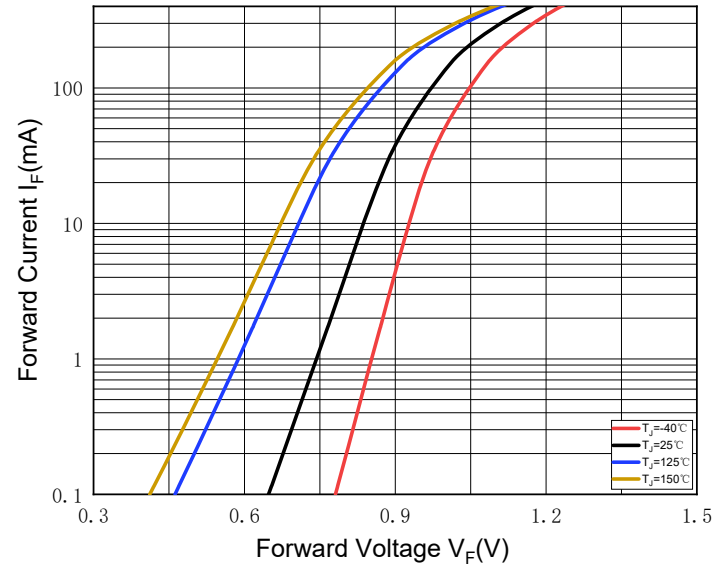


Fig.3: Reverse Characteristics

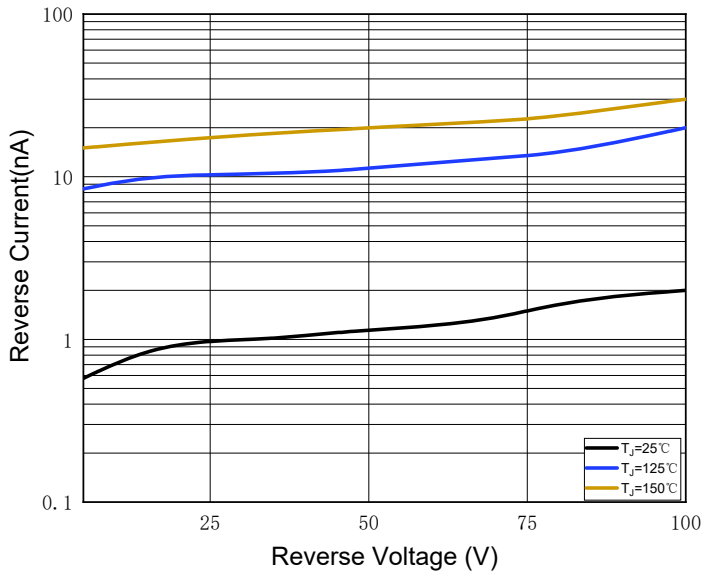
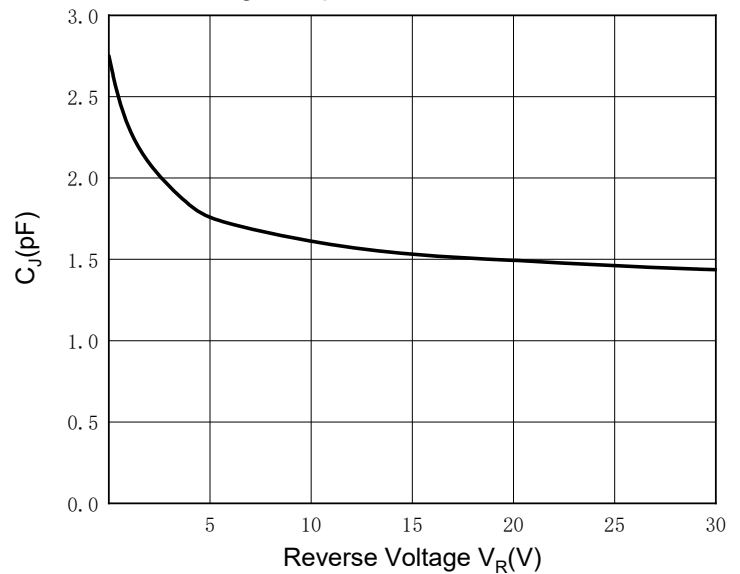
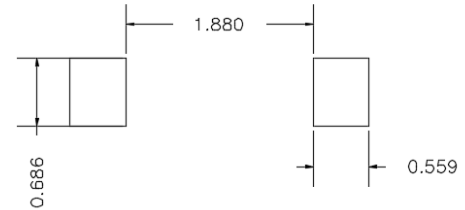
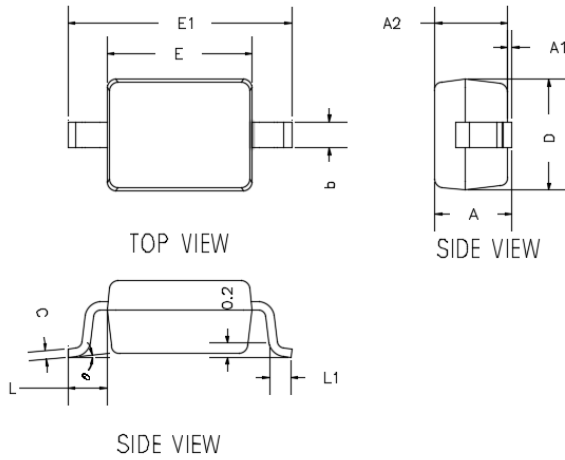


Fig.4: Capacitance Characteristics



## ■ Outline Dimensions

SOD-323

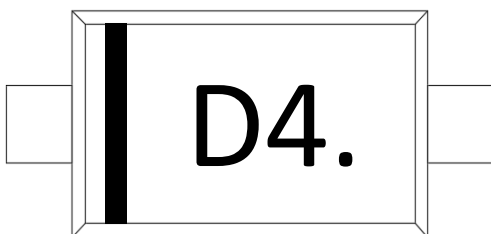


UNIT : mm

SUGGESTED SOLDER PAD LAYOUT

| 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°     |

## ■ Marking Information



### Note:

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



## Disclaimer

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