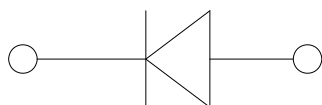


## Small-Signal Fast Switching Diodes



SOD523



## Features

- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 1
- $V_R$  100V
- $I_{FAV}$  250mA
- Part no. with suffix "Q" means AEC-Q101 qualified

## Typical Applications

- Extreme fast switches
- Automotive

## Mechanical Data

- **Package:** SOD523
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end
- **Marking:** 61

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

| PARAMETER                                 | SYMBOL     | UNIT               | Conditions                  | VALUE       |
|-------------------------------------------|------------|--------------------|-----------------------------|-------------|
| Repetitive peak reverse voltage           | $V_{RRM}$  | V                  |                             | 100         |
| Reverse voltage                           | $V_R$      | V                  | $I_R=100\mu\text{A}$        | 100         |
| Peak forward surge current                | $I_{FSM}$  | A                  | Pulse width=1 $\mu\text{s}$ | 2           |
|                                           |            |                    | Pulse width=1 s             | 1           |
| Non-repetitive peak forward surge current | $I_{FSM}$  | A                  | 8.3ms half sine-wave        | 1           |
| Average forward current                   | $I_{FAV}$  | mA                 |                             | 250         |
| Thermal Resistance Junction to Ambient    | $R_{thJA}$ | $^\circ\text{C/W}$ |                             | 833         |
| Power dissipation                         | $P_D$      | mW                 |                             | 150         |
| Maximum junction temperature              | $T_j$      | $^\circ\text{C}$   |                             | -55 to +150 |
| Storage temperature range                 | $T_{stg}$  | $^\circ\text{C}$   |                             | -55 to +150 |

# BAS516Q

## ■Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

| PARAMETER               | Symbol          | UNIT | Conditions                                                                                       | Min | Max   |
|-------------------------|-----------------|------|--------------------------------------------------------------------------------------------------|-----|-------|
| Breakdown Voltage       | V <sub>R</sub>  | V    | I <sub>R</sub> =100uA                                                                            | 100 |       |
| Forward Voltage         | V <sub>F</sub>  | V    | I <sub>F</sub> =1mA                                                                              |     | 0.715 |
|                         |                 |      | I <sub>F</sub> =10mA                                                                             |     | 0.855 |
|                         |                 |      | I <sub>F</sub> =50mA                                                                             |     | 1.00  |
|                         |                 |      | I <sub>F</sub> =150mA                                                                            |     | 1.25  |
| Reverse Leakage Current | I <sub>R1</sub> | nA   | V <sub>R</sub> =25V                                                                              |     | 30    |
|                         | I <sub>R2</sub> | uA   | V <sub>R</sub> =75V                                                                              |     | 1     |
| Capacitance             | C <sub>j</sub>  | pF   | V <sub>R</sub> =0V, f=1MHz; V <sub>sig</sub> =50mV <sub>p-p</sub>                                |     | 4     |
| Reverse Recovery Time   | T <sub>rr</sub> | ns   | I <sub>F</sub> =I <sub>R</sub> =10mA, I <sub>rr</sub> =0.1*I <sub>R</sub> , R <sub>L</sub> =100Ω |     | 4     |

## ■Ordering Information (Example)

| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(g)    | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|-------------------|----------------------|-------------------------|----------------------------|---------------|
| BAS516Q       | F2           | Approximate 0.002 | 8000                 | 80000                   | 320000                     | 7" reel       |

# BAS516Q

## ■ Characteristics (Typical)

Fig.1:  $P_D$ - $T_A$

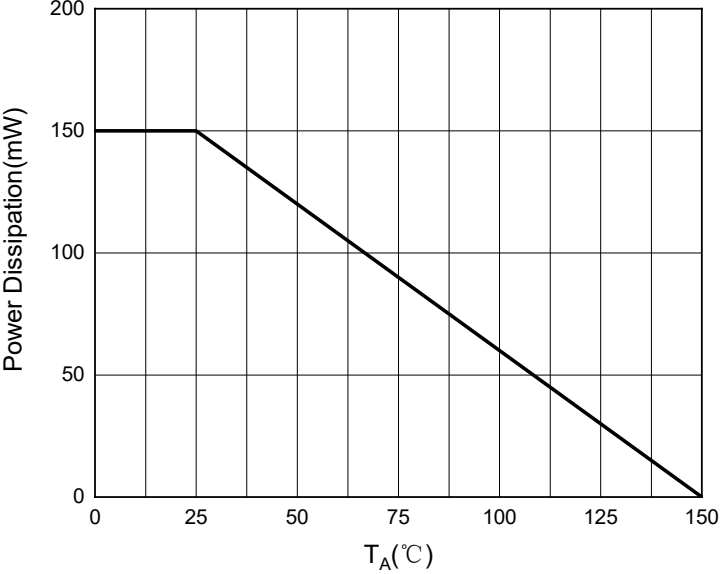


Fig.2: Capacitance Characteristics

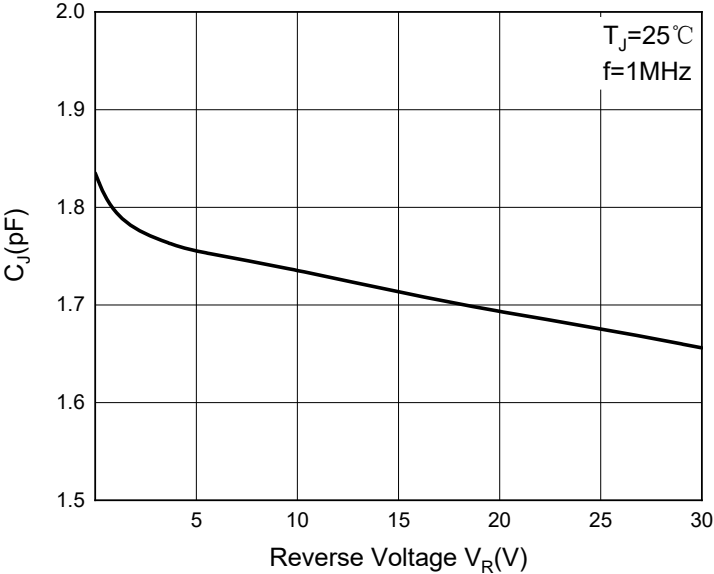


Fig.3: Forward Characteristics

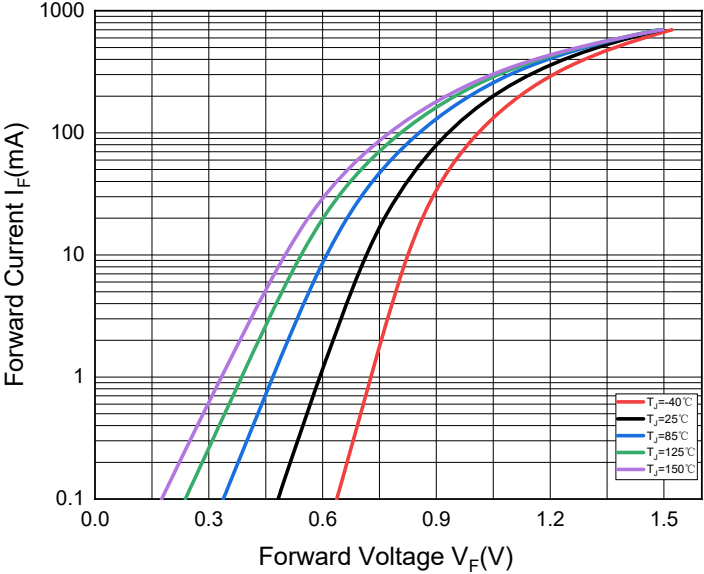
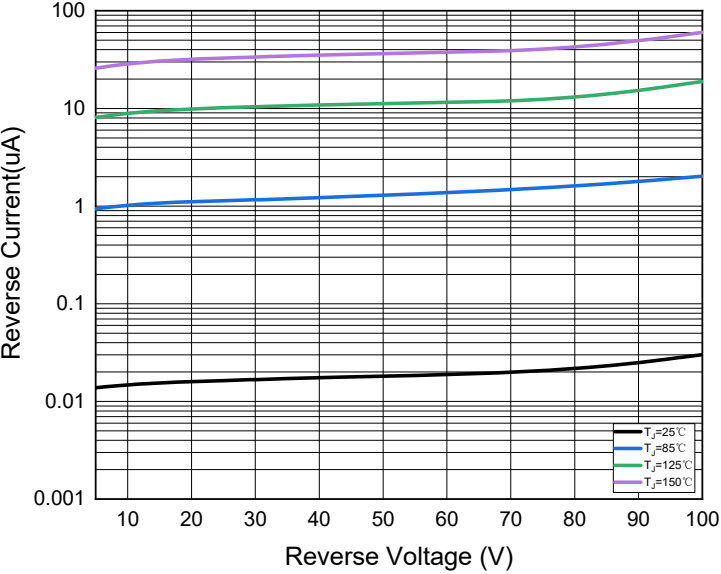
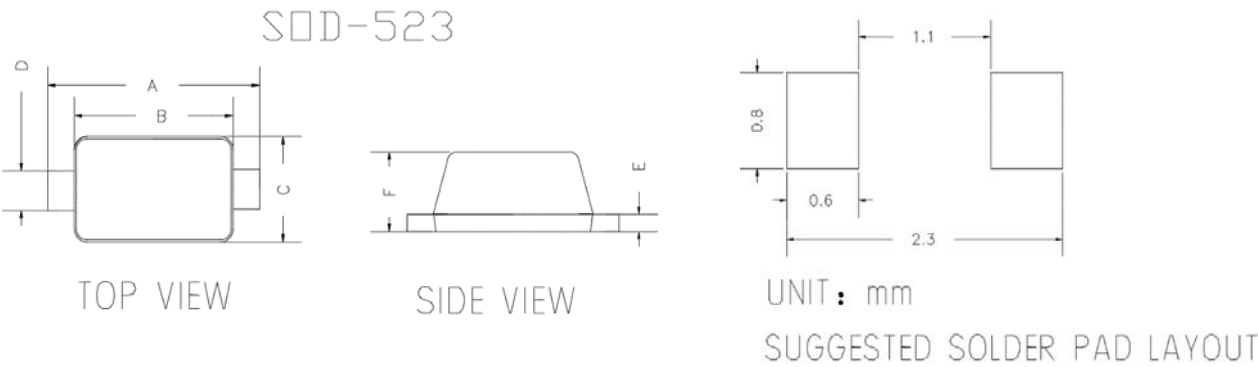


Fig.4: Reverse Characteristics



BAS516Q

■ Outline Dimensions



| DIMENSIONS |        |       |       |       |
|------------|--------|-------|-------|-------|
| DIM        | INCHES |       | MM    |       |
|            | MIN    | MAX   | MM    | MAX   |
| A          | 0.059  | 0.067 | 1.500 | 1.700 |
| B          | 0.043  | 0.051 | 1.100 | 1.300 |
| C          | 0.028  | 0.035 | 0.700 | 0.900 |
| D          | 0.010  | 0.014 | 0.250 | 0.350 |
| E          | 0.002  | 0.008 | 0.050 | 0.200 |
| F          | 0.020  | 0.028 | 0.500 | 0.700 |

■ Marking Information



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

# BAS516Q

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## Disclaimer

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