



## Small Signal Schottky Diode



### SOT-23

#### Features

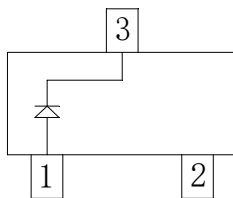
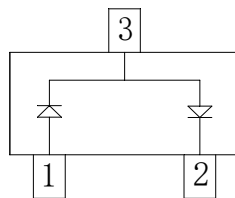
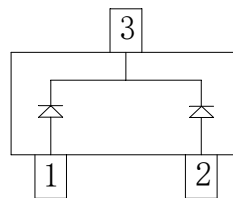
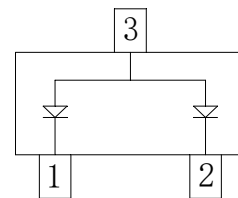
- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 1
- Low Forward Voltage Schottky Rectifier
- $V_{RRM}$  40V
- $I_{FAV}$  0.12A
- Part no. with suffix "Q" means AEC-Q101 qualified

#### Applications

- Ultra high speed switching
- Voltage clamping

#### Mechanical Data

- **Case:** SOT-23
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102

**BAS40Q****BAS40-04Q****BAS40-05Q****BAS40-06Q**

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

| PARAMETER                                 | SYMBOL     | UNIT                 | CONDITIONS                      | VALUE       |
|-------------------------------------------|------------|----------------------|---------------------------------|-------------|
| Peak Repetitive Reverse Voltage           | $V_{RRM}$  | V                    |                                 | 40          |
| Average Forward Current                   | $I_{FAV}$  | mA                   |                                 | 120         |
| Non-repetitive Peak Forward Surge Current | $I_{FSM}$  | A                    | square wave $t_p < 10\text{ms}$ | 0.6         |
| Power Dissipation                         | $P_D$      | mW                   |                                 | 250         |
| Thermal Resistance Junction to Ambient    | $R_{thJA}$ | $^{\circ}\text{C/W}$ |                                 | 500         |
| Junction Temperature                      | $T_j$      | $^{\circ}\text{C}$   |                                 | -55 to +150 |
| Storage Temperature Range                 | $T_{stg}$  | $^{\circ}\text{C}$   |                                 | -55 to +150 |



# BAS40Q/BAS40-04Q/BAS40-05Q/BAS40-06Q

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

| PARAMETER                 | SYMBOL      | UNIT          | CONDITIONS                                                     | MIN | MAX  |
|---------------------------|-------------|---------------|----------------------------------------------------------------|-----|------|
| Reverse Breakdown Voltage | $V_{(BR)R}$ | V             | $I_R=10\mu\text{A}$                                            | 40  |      |
| Forward Voltage           | $V_F$       | V             | $I_F=1.0\text{mA}$                                             | -   | 0.38 |
|                           |             |               | $I_F=40\text{mA}$                                              | -   | 1.0  |
| Reverse Current           | $I_R$       | $\mu\text{A}$ | $V_R=30\text{V}$                                               | -   | 0.2  |
| Junction Capacitance      | $C_J$       | pF            | $V_R=0\text{V}$ , $f=1\text{MHz}$                              | -   | 5    |
| Reverse Recovery Time     | $t_{rr}$    | ns            | $I_F=I_R=5\text{mA}$ , $I_{tr}=0.5\text{mA}$ , $R_L=100\Omega$ | -   | 5    |

## ■ Ordering Information (Example)

| PREFERRED P/N                        | PACKING CODE | UNIT WEIGHT(g)   | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|--------------------------------------|--------------|------------------|----------------------|-------------------------|----------------------------|---------------|
| BAS40Q/BAS40-04Q/BAS40-05Q/BAS40-06Q | F2           | Approximate 0.01 | 3000                 | 30000                   | 120000                     | 7" reel       |

## ■ Characteristics(Typical)

Figure 1. FORWARD CHARACTERISTICS

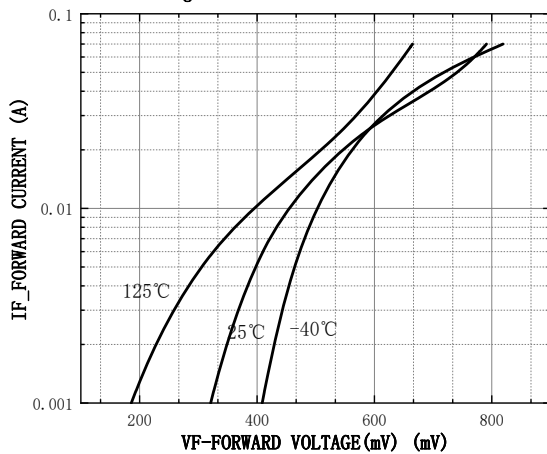


Figure 2. REVERSE CHARACTERISTICS

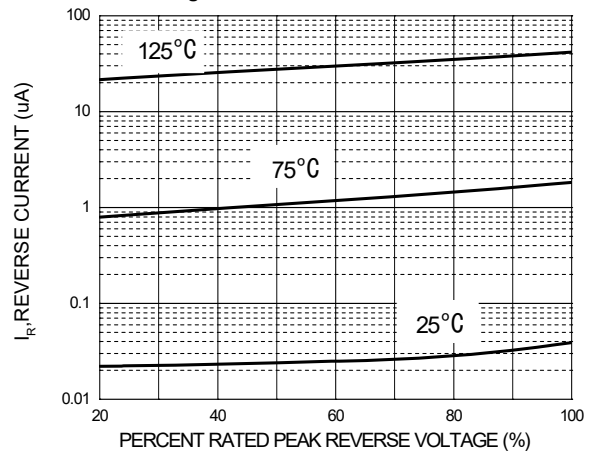


Figure 3. JUNCTION CAPACITANCE

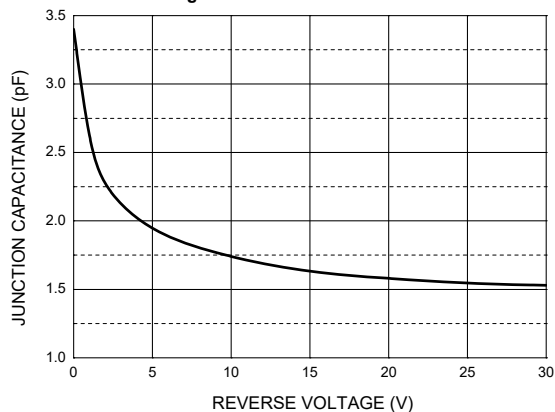
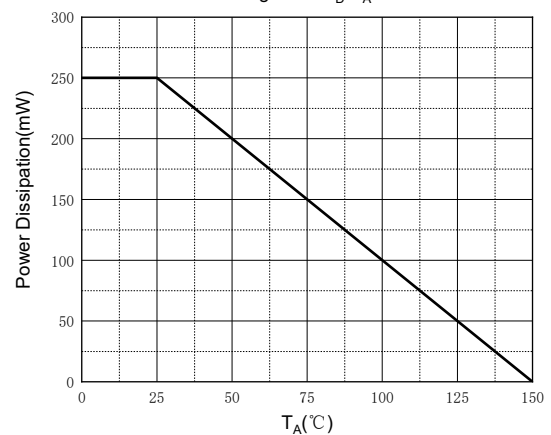


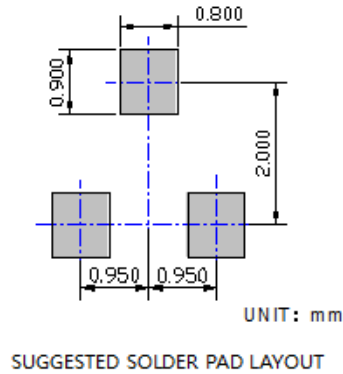
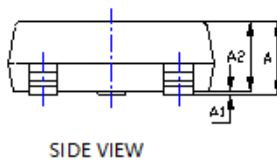
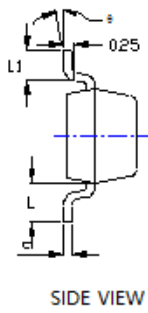
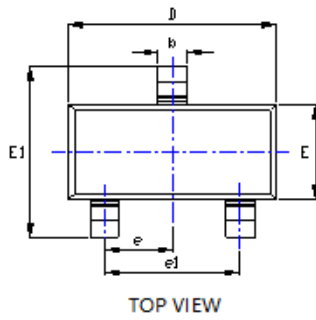
Figure 4.  $P_D-T_A$





# BAS40Q/BAS40-04Q/BAS40-05Q/BAS40-06Q

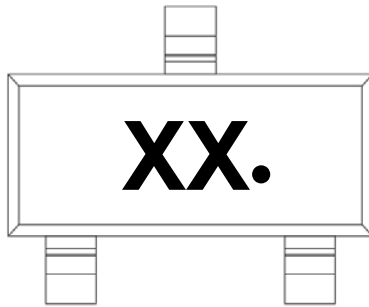
## ■SOT-23 Package Outline Dimensions



| SYMBOL | DIMENSIONS |       |            |       |
|--------|------------|-------|------------|-------|
|        | INCHES     |       | Millimeter |       |
|        | MIN.       | MAX.  | MIN.       | MAX.  |
| A      | 0.035      | 0.045 | 0.900      | 1.150 |
| A1     | 0.000      | 0.004 | 0.000      | 0.100 |
| A2     | 0.035      | 0.041 | 0.900      | 1.050 |
| b      | 0.012      | 0.020 | 0.300      | 0.500 |
| c      | 0.004      | 0.008 | 0.100      | 0.200 |
| D      | 0.110      | 0.118 | 2.800      | 3.000 |
| E      | 0.047      | 0.055 | 1.200      | 1.400 |
| E1     | 0.089      | 0.100 | 2.250      | 2.550 |
| e      | 0.037TYP   |       | 0.950TYP   |       |
| e1     | 0.071      | 0.079 | 1.800      | 2.000 |
| L      | 0.022REF   |       | 0.550REF   |       |
| L1     | 0.012      | 0.020 | 0.300      | 0.500 |
| θ      | 0°         | 8°    | 0°         | 8°    |

NOTE:  
 1.PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.  
 2.TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.  
 3.THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.

## ■ Marking Information



| PN        | Marking Code |
|-----------|--------------|
| BAS40Q    | 43.          |
| BAS40-04Q | 44.          |
| BAS40-05Q | 45.          |
| BAS40-06Q | 46.          |

Note:

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



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