

## Small Signal Schottky Diode



### SOT-323

#### Features

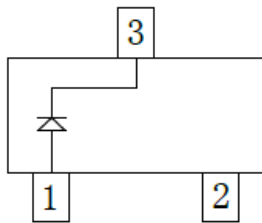
- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 1
- Low Forward Voltage Schottky Rectifier
- $V_{RRM}$  40V
- $I_{FAV}$  120mA
- Part no. with suffix "Q" means AEC-Q101 qualified

#### Applications

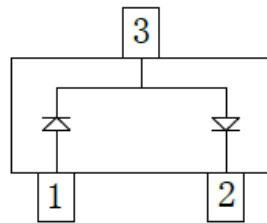
- Ultra high speed switching
- Voltage clamping
- Automotive

#### Mechanical Data

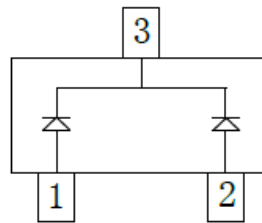
- **Case:** SOT-323
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102



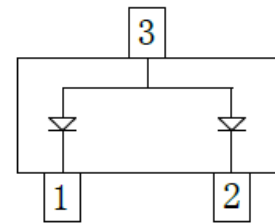
BAS40WTQ  
Marking:43



BAS40WT-04Q  
Marking:44



BAS40WT-05Q  
Marking:45



BAS40WT-06Q  
Marking:46

#### ■ 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 $t_p < 10\text{ms}$ | 2           |
| 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 |



## BAS40WTQ THRU BAS40WT-06Q

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

| PARAMETER                 | SYMBOL          | UNIT | CONDITIONS   | MIN | MAX  |
|---------------------------|-----------------|------|--|-----|------|
| Forward Voltage           | V <sub>F</sub>  | V    | I <sub>F</sub> =1mA  |     | 0.38 |
|                           |                 |      | I <sub>F</sub> =40mA   |     | 1    |
| Reverse Current           | I <sub>R</sub>  | μA   | V <sub>R</sub> =30V  |     | 0.2  |
| Reverse Breakdown Voltage | V <sub>BR</sub> | V    | I <sub>R</sub> =10μA   | 40  |      |
| Junction Capacitance      | C <sub>J</sub>  | pF   | V <sub>R</sub> =0V, f =1MHz  |     | 5    |
| Reverse Recovery Time     | t <sub>rr</sub> | ns   | I <sub>F</sub> =I <sub>R</sub> =10mA, I <sub>rr</sub> =1mA, R <sub>L</sub> =100Ω |     | 7    |

### ■ Ordering Information (Example)

| PREFERRED P/N   | PACKING CODE | UNIT WEIGHT(g)    | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---|--------------|-------------------|----------------------|-------------------------|----------------------------|---------------|
| BAS40WTQ<br>BAS40WT-04Q<br>BAS40WT-05Q<br>BAS40WT-06Q | F2           | Approximate 0.006 | 3000                 | 30000                   | 120000                     | 7" reel       |



# BAS40WTQ THRU BAS40WT-06Q

## ■ Characteristics (Typical)

Fig.1:  $P_D-T_A$

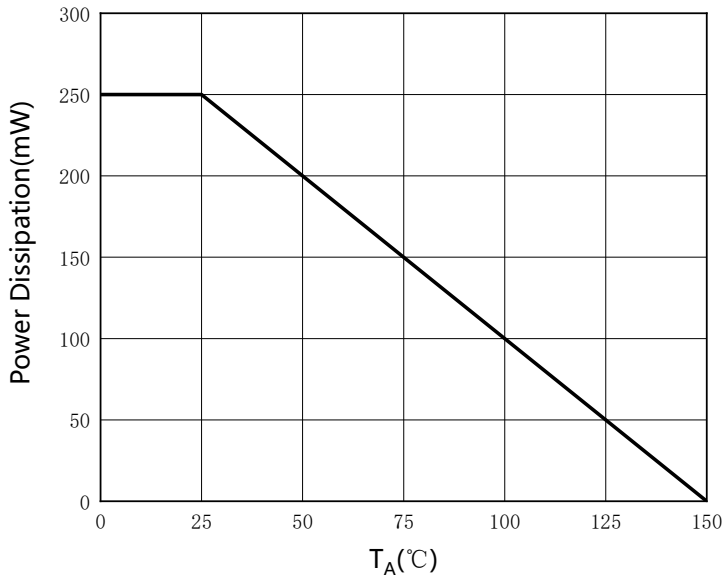


Fig.2: Capacitance Characteristics

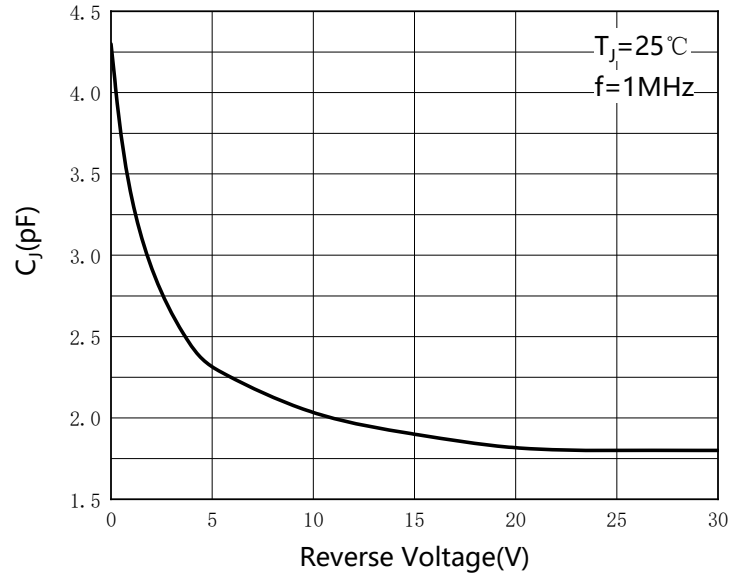


Fig.3: Forward Characteristics

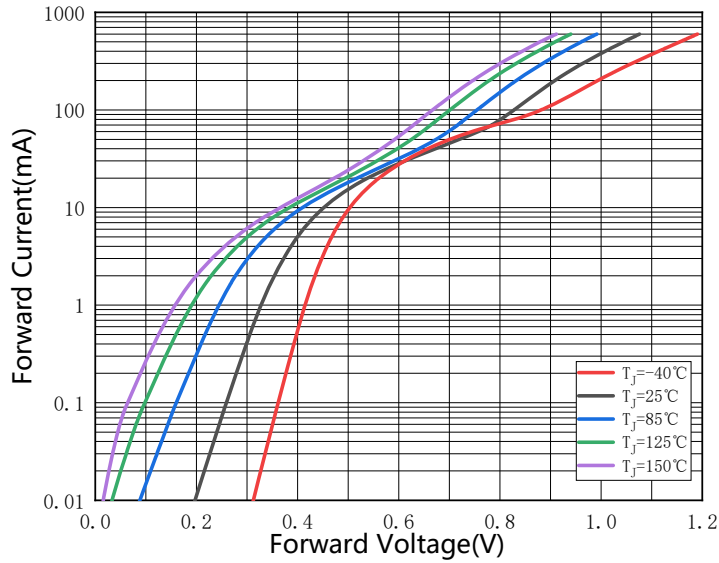
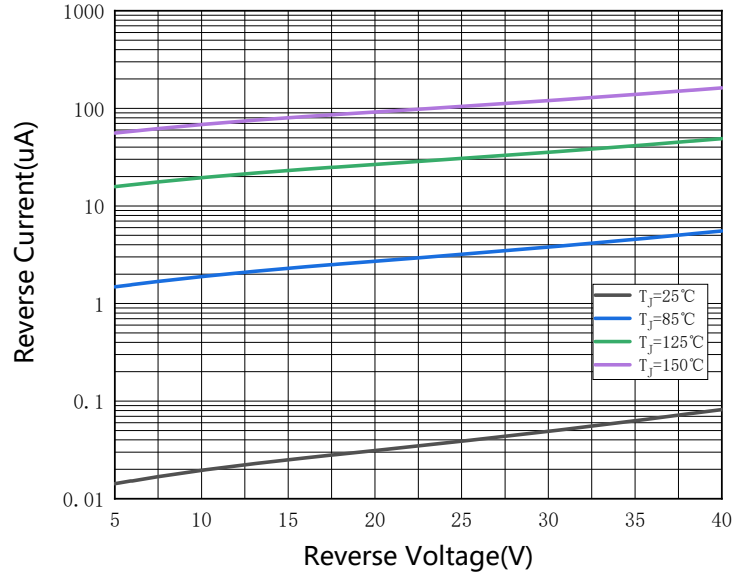


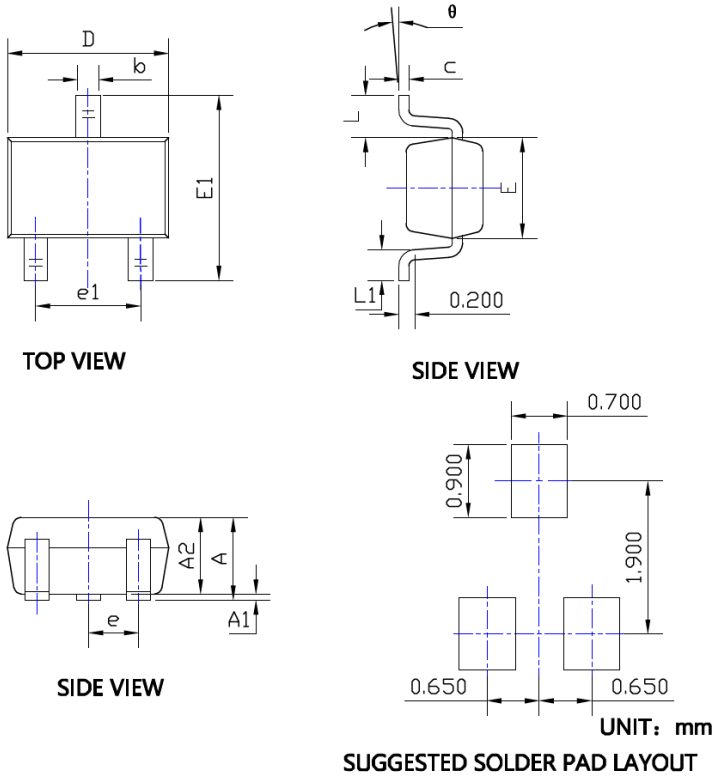
Fig.4: Reverse Characteristics





# BAS40WTQ THRU BAS40WT-06Q

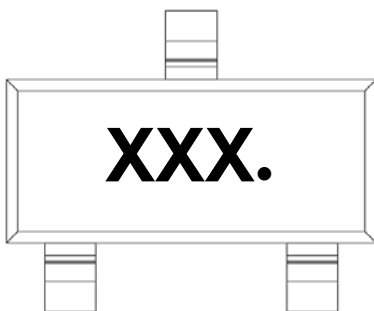
## ■ Outline Dimensions



| SYMBOL | DIMENSIONS |       |            |       |
|--------|------------|-------|------------|-------|
|        | INCHES     |       | Millimeter |       |
|        | MIN.       | MAX.  | MIN.       | MAX.  |
| A      | 0.035      | 0.043 | 0.900      | 1.100 |
| A1     | 0.000      | 0.004 | 0.000      | 0.100 |
| A2     | 0.035      | 0.039 | 0.900      | 1.000 |
| b      | 0.006      | 0.016 | 0.150      | 0.400 |
| c      | 0.004      | 0.010 | 0.100      | 0.250 |
| D      | 0.071      | 0.087 | 1.800      | 2.200 |
| E      | 0.045      | 0.053 | 1.150      | 1.350 |
| E1     | 0.085      | 0.096 | 2.150      | 2.450 |
| e      | 0.026TYP   |       | 0.650TYP   |       |
| e1     | 0.047      | 0.055 | 1.200      | 1.400 |
| L      | 0.021REF   |       | 0.525REF   |       |
| L1     | 0.010      | 0.018 | 0.260      | 0.460 |
| 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 |
|-------------|--------------|
| BAS40WTQ    | 43.          |
| BAS40WT-04Q | 44.          |
| BAS40WT-05Q | 45.          |
| BAS40WT-06Q | 46.          |

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



## BAS40WTQ THRU BAS40WT-06Q

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