

# Dual Series Schottky Barrier Diode

## BAS40-04LT1G, SBAS40-04LT1G

These Schottky barrier diodes are designed for high speed switching applications, circuit protection, and voltage clamping. Extremely low forward voltage reduces conduction loss. Miniature surface mount package is excellent for hand held and portable applications where space is limited.

### Features

- Extremely Fast Switching Speed
- Low Forward Voltage
- S Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

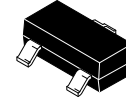
### MAXIMUM RATINGS

| Rating                                                                                     | Symbol          | Value       | Unit                       |
|--------------------------------------------------------------------------------------------|-----------------|-------------|----------------------------|
| Reverse Voltage                                                                            | $V_R$           | 40          | V                          |
| Forward Power Dissipation<br>@ $T_A = 25^\circ\text{C}$<br>Derate above $25^\circ\text{C}$ | $P_F$           | 225<br>1.8  | mW<br>mW/ $^\circ\text{C}$ |
| Operating Junction and Storage<br>Temperature Range                                        | $T_J, T_{stg}$  | -55 to +150 | $^\circ\text{C}$           |
| Forward Continuous Current                                                                 | $I_{FM}$        | 120         | mA                         |
| Single Forward Current<br>$t \leq 1 \text{ s}$<br>$t \leq 10 \text{ ms}$                   | $I_{FSM}$       | 200<br>600  | mA                         |
| Thermal Resistance (Note 1)<br>Junction-to-Ambient (Note 2)                                | $R_{\theta JA}$ | 508<br>311  | $^\circ\text{C/W}$         |

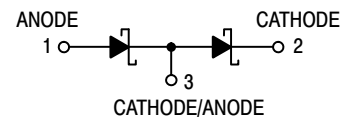
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. FR-4 @ minimum pad.
2. FR-4 @ 1.0 x 1.0 in pad.

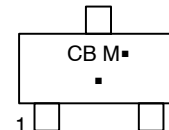
## 40 VOLTS SCHOTTKY BARRIER DIODES



SOT-23 (TO-236)  
CASE 318  
STYLE 11



### MARKING DIAGRAM



CB = Specific Device Code  
M = Date Code\*  
▪ = Pb-Free Package

(Note: Microdot may be in either location)

\*Date Code orientation and/or overbar may vary depending upon manufacturing location.

### ORDERING INFORMATION

| Device        | Package             | Shipping <sup>†</sup>  |
|---------------|---------------------|------------------------|
| BAS40-04LT1G  | SOT-23<br>(Pb-Free) | 3,000 /<br>Tape & Reel |
| SBAS40-04LT1G | SOT-23<br>(Pb-Free) | 3,000 /<br>Tape & Reel |

<sup>†</sup>For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, [BRD8011/D](http://www.onsemi.com/BRD8011/D).

# BAS40-04LT1G, SBAS40-04LT1G

## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

| Characteristic                                                         | Symbol      | Min | Max | Unit          |
|------------------------------------------------------------------------|-------------|-----|-----|---------------|
| Reverse Breakdown Voltage<br>( $I_R = 10\ \mu\text{A}$ )               | $V_{(BR)R}$ | 40  | –   | V             |
| Total Capacitance<br>( $V_R = 1.0\ \text{V}$ , $f = 1.0\ \text{MHz}$ ) | $C_T$       | –   | 5.0 | pF            |
| Reverse Leakage<br>( $V_R = 25\ \text{V}$ )                            | $I_R$       | –   | 1.0 | $\mu\text{A}$ |
| Forward Voltage<br>( $I_F = 1.0\ \text{mA}$ )                          | $V_F$       | –   | 380 | mV            |
| Forward Voltage<br>( $I_F = 10\ \text{mA}$ )                           | $V_F$       | –   | 500 | mV            |
| Forward Voltage<br>( $I_F = 40\ \text{mA}$ )                           | $V_F$       | –   | 1.0 | V             |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

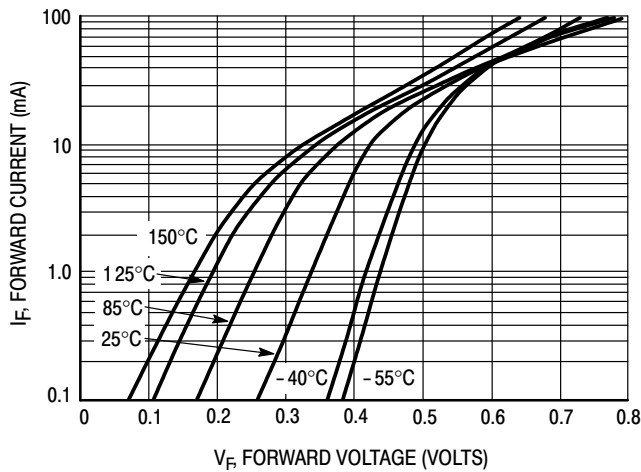


Figure 1. Typical Forward Voltage

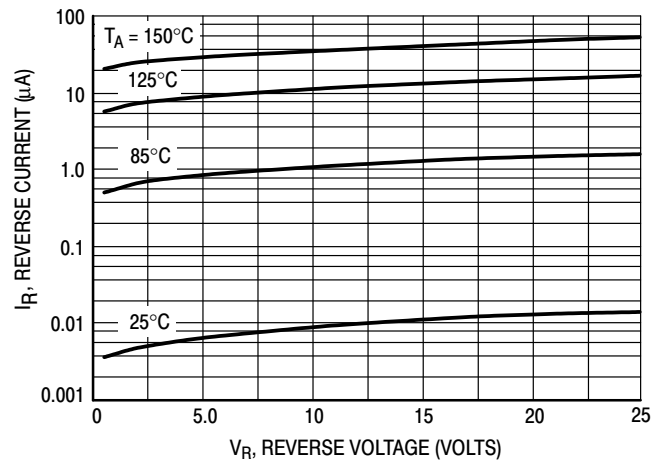


Figure 2. Reverse Current versus Reverse Voltage

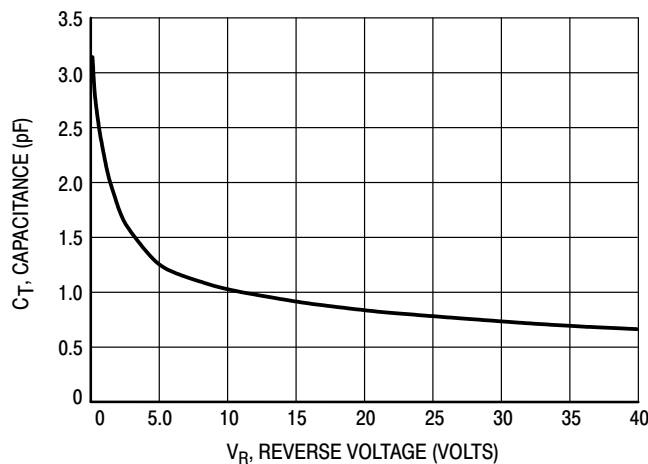
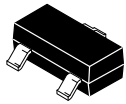


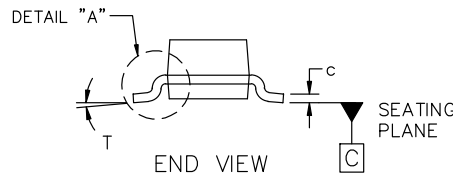
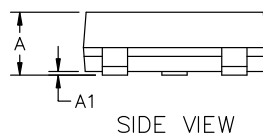
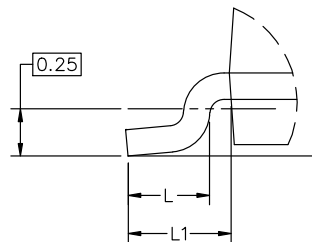
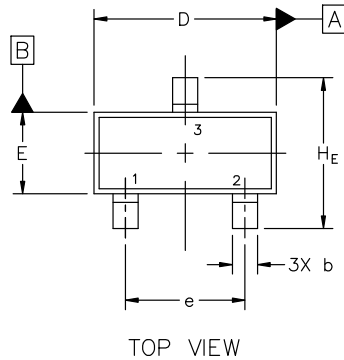
Figure 3. Typical Capacitance



SCALE 4:1

**SOT-23 (TO-236) 2.90x1.30x1.00 1.90P**  
**CASE 318**  
**ISSUE AU**

DATE 14 AUG 2024

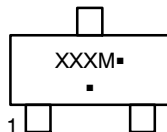


| MILLIMETERS |      |      |      |
|-------------|------|------|------|
| DIM         | MIN  | NOM  | MAX  |
| A           | 0.89 | 1.00 | 1.11 |
| A1          | 0.01 | 0.06 | 0.10 |
| b           | 0.37 | 0.44 | 0.50 |
| c           | 0.08 | 0.14 | 0.20 |
| D           | 2.80 | 2.90 | 3.04 |
| E           | 1.20 | 1.30 | 1.40 |
| e           | 1.78 | 1.90 | 2.04 |
| L           | 0.30 | 0.43 | 0.55 |
| L1          | 0.35 | 0.54 | 0.69 |
| HE          | 2.10 | 2.40 | 2.64 |
| T           | 0°   | ---  | 10°  |

NOTES:

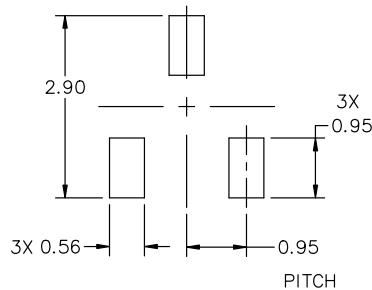
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2018.
2. CONTROLLING DIMENSIONS: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF THE BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

**GENERIC MARKING DIAGRAM\***



XXX = Specific Device Code  
M = Date Code  
▪ = Pb-Free Package

\*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present. Some products may not follow the Generic Marking.



\* For additional information on our Pb-Free strategy and soldering details, please download the onsemi Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

**STYLES ON PAGE 2**

|                         |                                             |                                                                                                                                                                                     |
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**SOT-23 (TO-236) 2.90x1.30x1.00 1.90P**  
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DATE 14 AUG 2024

|                                                         |                                                       |                                                             |                                                             |                                                             |                                                             |
|---------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|
| STYLE 1 THRU 5:<br>CANCELLED                            | STYLE 6:<br>PIN 1. BASE<br>2. EMITTER<br>3. COLLECTOR | STYLE 7:<br>PIN 1. EMITTER<br>2. BASE<br>3. COLLECTOR       | STYLE 8:<br>PIN 1. ANODE<br>2. NO CONNECTION<br>3. CATHODE  |                                                             |                                                             |
| STYLE 9:<br>PIN 1. ANODE<br>2. ANODE<br>3. CATHODE      | STYLE 10:<br>PIN 1. DRAIN<br>2. SOURCE<br>3. GATE     | STYLE 11:<br>PIN 1. ANODE<br>2. CATHODE<br>3. CATHODE-ANODE | STYLE 12:<br>PIN 1. CATHODE<br>2. CATHODE<br>3. ANODE       | STYLE 13:<br>PIN 1. SOURCE<br>2. DRAIN<br>3. GATE           | STYLE 14:<br>PIN 1. CATHODE<br>2. GATE<br>3. ANODE          |
| STYLE 15:<br>PIN 1. GATE<br>2. CATHODE<br>3. ANODE      | STYLE 16:<br>PIN 1. ANODE<br>2. CATHODE<br>3. CATHODE | STYLE 17:<br>PIN 1. NO CONNECTION<br>2. ANODE<br>3. CATHODE | STYLE 18:<br>PIN 1. NO CONNECTION<br>2. CATHODE<br>3. ANODE | STYLE 19:<br>PIN 1. CATHODE<br>2. ANODE<br>3. CATHODE-ANODE | STYLE 20:<br>PIN 1. CATHODE<br>2. ANODE<br>3. GATE          |
| STYLE 21:<br>PIN 1. GATE<br>2. SOURCE<br>3. DRAIN       | STYLE 22:<br>PIN 1. RETURN<br>2. OUTPUT<br>3. INPUT   | STYLE 23:<br>PIN 1. ANODE<br>2. ANODE<br>3. CATHODE         | STYLE 24:<br>PIN 1. GATE<br>2. DRAIN<br>3. SOURCE           | STYLE 25:<br>PIN 1. ANODE<br>2. CATHODE<br>3. GATE          | STYLE 26:<br>PIN 1. CATHODE<br>2. ANODE<br>3. NO CONNECTION |
| STYLE 27:<br>PIN 1. CATHODE<br>2. CATHODE<br>3. CATHODE | STYLE 28:<br>PIN 1. ANODE<br>2. ANODE<br>3. ANODE     |                                                             |                                                             |                                                             |                                                             |

|                  |                                      |                                                                                                                                                                                     |
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