

BAT41HT1G

Product Preview

Schottky Barrier Diodes

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

- Fast Switching Speed
- Low Leakage Current
- Low Forward Voltage – 0.45 V @ $I_F = 1 \text{ mA}$
- ESD Rating
 - Human Body Model: Class 3A
 - Machine Model: Class C
- Surface Mount Device
- Low Capacitance Diode
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant*

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|-----------------|--------|-------|------|
| Reverse Voltage | V_R | 100 | V |

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

THERMAL CHARACTERISTICS

| Characteristic | Symbol | Value | Unit |
|---|-----------------|---------------|----------------------------|
| Total Device Dissipation FR-5 Board, (Note 1) $T_A = 25^\circ\text{C}$ Derate above 25°C | P_D | 200 1.57 | mW mW/ $^\circ\text{C}$ |
| Forward Current (DC) | I_F | 200 | mA |
| Non-Repetitive Peak Forward Current, $t_p < 10 \text{ msec}$ | I_{FSM} | 2 | A |
| Thermal Resistance Junction-to-Ambient | $R_{\theta JA}$ | 635 | $^\circ\text{C}/\text{W}$ |
| Junction and Storage Temperature Range | T_J, T_{stg} | -55 to 150 | $^\circ\text{C}$ |

1. FR-4 Minimum Pad

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

This document contains information on a product under development. ON Semiconductor reserves the right to change or discontinue this product without notice.



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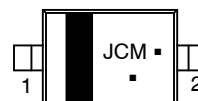
100 VOLT SCHOTTKY BARRIER DIODE



SOD-323
CASE 477
STYLE 1



MARKING DIAGRAM



JC = Device Code
M = Date Code
▪ = Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

| Device | Package | Shipping† |
|-----------|----------------------|------------------------|
| BAT41HT1G | SOD-323 (Pb-Free) | 3,000 / Tape & Reel |

†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.

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

| Characteristic | Symbol | Min | Typ | Max | Unit |
|--|--------|-----|-----|------|--------------------|
| Reverse Breakdown Voltage ($I_R = 10 \mu\text{A}$) | V_R | 100 | - | - | V |
| Reverse Leakage ($V_R = 50 \text{V}$) | I_R | - | - | 0.1 | μA_{dc} |
| Forward Voltage ($I_F = 1 \text{mA}_{dc}$) | V_F | - | - | 0.45 | Vdc |
| Forward Voltage ($I_F = 10 \text{mA}_{dc}$) | V_F | - | - | 0.6 | Vdc |
| Forward Voltage ($I_F = 100 \text{mA}_{dc}$) | V_F | - | - | 0.82 | Vdc |
| Forward Voltage ($I_F = 200 \text{mA}_{dc}$) | V_F | - | - | 1.0 | Vdc |
| Forward Voltage Reverse Leakage ($V_R = 100 \text{V}$) | I_R | - | - | 0.2 | μA_{dc} |
| Total Capacitance ($V_R = 1.0 \text{V}$, $f = 1.0 \text{MHz}$) | C_T | - | 4 | 10 | pF |

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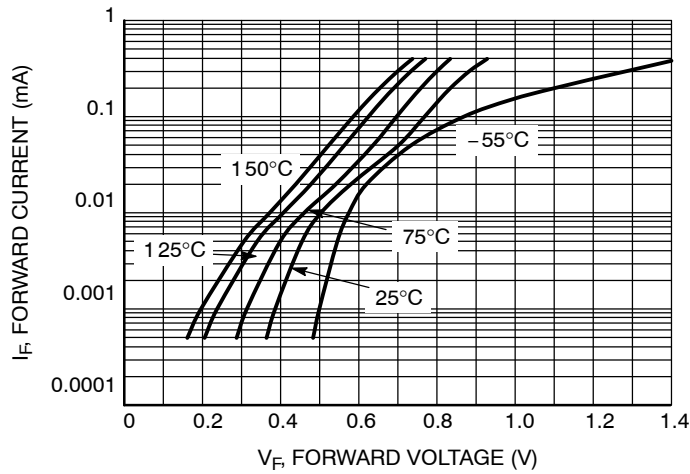


Figure 1. Forward Voltage

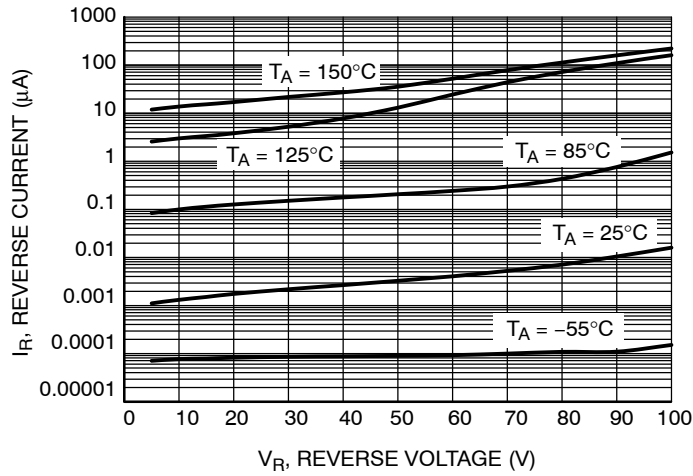


Figure 2. Leakage Current

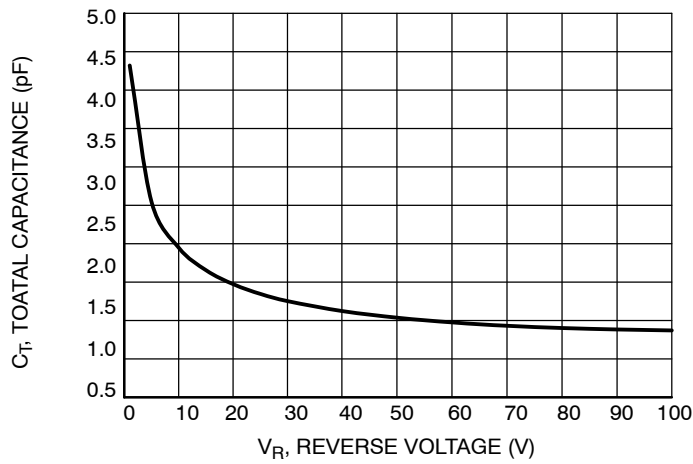
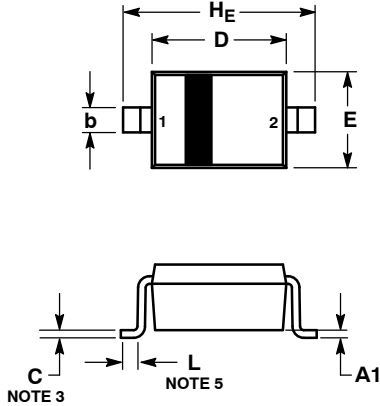


Figure 3. Total Capacitance

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PACKAGE DIMENSIONS

SOD-323
CASE 477-02
ISSUE H



NOTES:

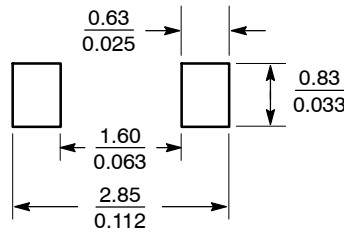
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. LEAD THICKNESS SPECIFIED PER L/F DRAWING WITH SOLDER PLATING.
4. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
5. DIMENSION L IS MEASURED FROM END OF RADIUS.

| DIM | MILLIMETERS | | | INCHES | | |
|-----|-------------|------|-------|-----------|-------|-------|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 0.80 | 0.90 | 1.00 | 0.031 | 0.035 | 0.040 |
| A1 | 0.00 | 0.05 | 0.10 | 0.000 | 0.002 | 0.004 |
| A3 | 0.15 REF | | | 0.006 REF | | |
| b | 0.25 | 0.32 | 0.4 | 0.010 | 0.012 | 0.016 |
| C | 0.089 | 0.12 | 0.177 | 0.003 | 0.005 | 0.007 |
| D | 1.60 | 1.70 | 1.80 | 0.062 | 0.066 | 0.070 |
| E | 1.15 | 1.25 | 1.35 | 0.045 | 0.049 | 0.053 |
| L | 0.08 | | | 0.003 | | |
| HE | 2.30 | 2.50 | 2.70 | 0.090 | 0.098 | 0.105 |

STYLE 1:

- PIN 1. CATHODE (POLARITY BAND)
- ANODE

SOLDERING FOOTPRINT*



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

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