

RB751V40T1G

Schottky Barrier Diode

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
- Extremely Low Forward Voltage – 0.28 Volts (Typ) @ $I_F = 1 \text{ mAdc}$
- Low Reverse Current
- NSV 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 |
|---------------------------------|-----------|------------------------------|------|
| Peak Reverse Voltage | V_{RM} | 40 | V |
| Reverse Voltage | V_R | 30 | Vdc |
| Forward Continuous Current (DC) | I_F | 30 | mA |
| Peak Forward Surge Current | I_{FSM} | 500 | mA |
| Electrostatic Discharge | E_{SD} | HBM Class: 1C MM Class: A | |

THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | 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/ $^\circ\text{C}$ |
| 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 | $^\circ\text{C}$ |

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.

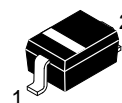
1. FR-5 Minimum Pad



ON Semiconductor®

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40 V SCHOTTKY BARRIER DIODE



SOD-323
CASE 477
STYLE 1

MARKING DIAGRAM



5E = Specific Device Code
M = Date Code
■ = Pb-Free Package
(Note: Microdot may be in either location)

ORDERING INFORMATION

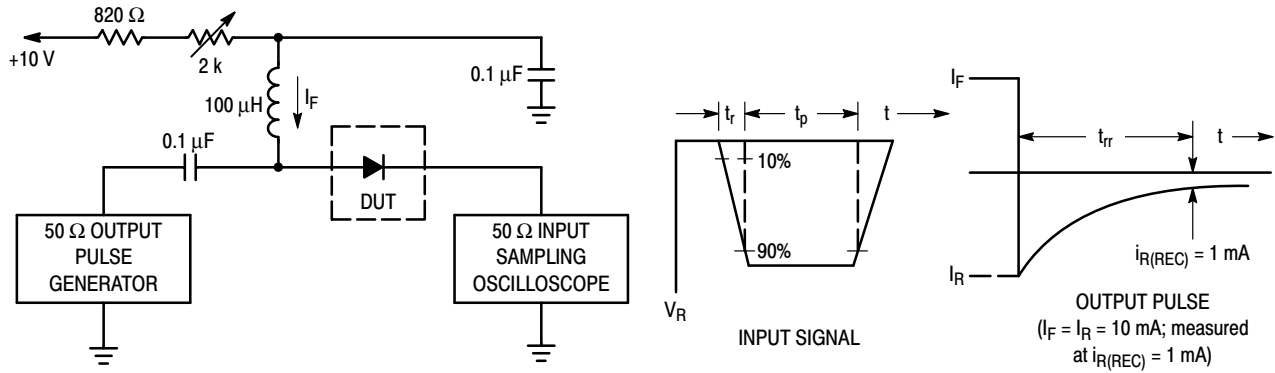
| Device | Package | Shipping† |
|----------------|----------------------|-----------------------|
| RB751V40T1G | SOD-323 (Pb-Free) | 3000 / Tape & Reel |
| NSVRB751V40T1G | SOD-323 (Pb-Free) | 3000 / Tape & Reel |

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

RB751V40T1G

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

| Characteristic | Symbol | Min | Typ | Max | Unit |
|--|-------------|-----|------|------|------------------|
| Reverse Breakdown Voltage ($I_R = 10 \mu\text{A}$) | $V_{(BR)R}$ | 30 | - | - | Volts |
| Total Capacitance ($V_R = 1.0 \text{ V}$, $f = 1.0 \text{ MHz}$) | C_T | - | 2.0 | 2.5 | pF |
| Reverse Leakage ($V_R = 30 \text{ V}$) | I_R | - | 300 | 500 | nA _{dc} |
| Forward Voltage ($I_F = 1.0 \text{ mA}$) | V_F | - | 0.28 | 0.37 | V _{dc} |



- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current (I_F) of 10 mA.
 2. Input pulse is adjusted so $I_{R(\text{peak})}$ is equal to 10 mA.
 3. $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

RB751V40T1G

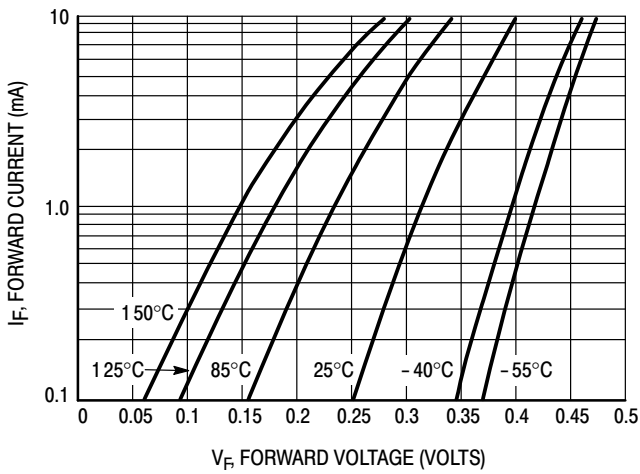


Figure 2. Typical Forward Voltage

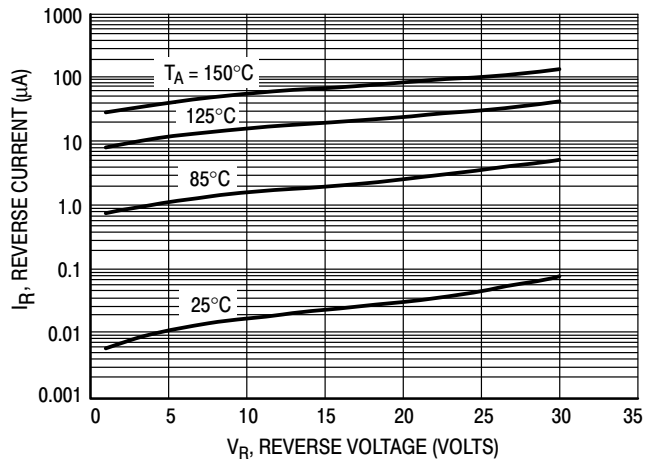


Figure 3. Reverse Current versus Reverse Voltage

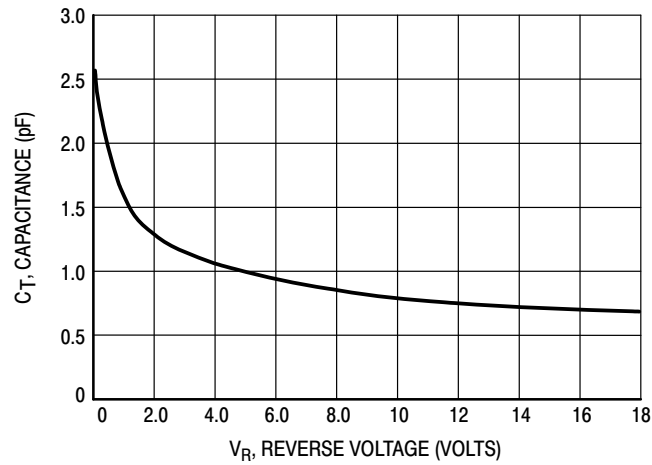
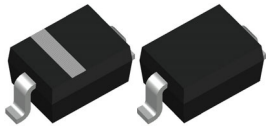


Figure 4. Typical Capacitance



SOD-323 1.70x1.25x0.85
CASE 477
ISSUE K

DATE 11 MAR 2024



RECOMMENDED MOUNTING FOOTPRINT

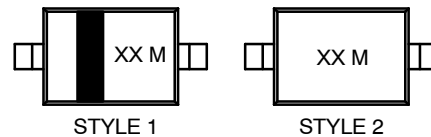
*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference manual, SOLDERRM/D.

NOTES:

1. DIMENSIONING AND TOLERANCING AS PER ASME Y14.5M, 2018.
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 MEASURE FROM END OF RADIUS.

| DIM | MILLIMETERS | | |
|-----|-------------|------|------|
| | MIN. | NOM. | MAX. |
| A | 0.80 | 0.90 | 1.00 |
| A1 | 0.00 | 0.05 | 0.10 |
| A2 | 0.75 | 0.85 | 0.95 |
| A3 | 0.15 (REF) | | |
| b | 0.25 | 0.32 | 0.4 |
| c | 0.09 | 0.12 | 0.18 |
| D | 1.60 | 1.70 | 1.80 |
| E | 1.15 | 1.25 | 1.35 |
| H | 2.30 | 2.50 | 2.70 |
| L | 0.08 | --- | --- |
| L1 | 0.40 (REF) | | |

GENERIC MARKING DIAGRAM*



XX = Specific Device Code
M = Date Code

*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.

STYLE 1: PIN 1. CATHODE (POLARITY BAND)
2. ANODE STYLE 2: NO POLARITY

| | | |
|-------------------------|-------------------------------|--|
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| DESCRIPTION: | SOD-323 1.70x1.25x0.85 | PAGE 1 OF 1 |

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