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# RB521S30T1G, NSVRB521S30T1G, RB521S30T5G



ON Semiconductor®

[www.onsemi.com](http://www.onsemi.com)

## 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 0.5 V (max) @  $I_F = 200$  mA
- 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 |
|--|-----------|-------|------|
| Reverse Voltage  | $V_R$     | 30    | Vdc  |
| Forward Current DC   | $I_F$     | 200   | mA   |
| Peak Forward Surge Current (Note 1)                                    | $I_{FSM}$ | 1.0   | A    |
| ESD Rating: Class 1C per Human Body Model<br>Class C per Machine Model |           |       |      |

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. 60 Hz for 1 cycle.

### THERMAL CHARACTERISTICS

| Characteristic   | Symbol          | Max         | Unit                       |
|--|-----------------|-------------|----------------------------|
| Total Device Dissipation FR-5 Board, (Note 2)<br>$T_A = 25^\circ\text{C}$<br>Derate above $25^\circ\text{C}$ | $P_D$           | 200<br>1.57 | mW<br>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 +125 | $^\circ\text{C}$           |

2. FR-5 Minimum Pad.

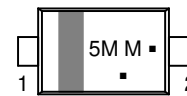
## 30 V SCHOTTKY BARRIER DIODE



SOD-523  
CASE 502



### MARKING DIAGRAM



5M = Device Code  
M = Date Code\*  
▪ = Pb-Free Package

(Note: Microdot may be in either location)

\*Date Code orientation may vary depending upon manufacturing location.

### ORDERING INFORMATION

| Device         | Package           | Shipping†                       |
|----------------|-------------------|---------------------------------|
| RB521S30T1G    | SOD-523 (Pb-Free) | 4 mm Pitch<br>3,000/Tape & Reel |
| NSVRB521S30T1G | SOD-523 (Pb-Free) | 4 mm Pitch<br>3,000/Tape & Reel |
| RB521S30T5G    | SOD-523 (Pb-Free) | 2 mm Pitch<br>8,000/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.

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

# RB521S30T1G, NSVRB521S30T1G, RB521S30T5G

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

| Characteristic                            | Symbol | Min | Typ | Max  | Unit          |
|---|--------|-----|-----|------|---------------|
| Reverse Leakage ( $V_R = 10\text{ V}$ )   | $I_R$  | -   | -   | 30.0 | $\mu\text{A}$ |
| Forward Voltage ( $I_F = 200\text{ mA}$ ) | $V_F$  | -   | -   | 0.50 | Vdc           |

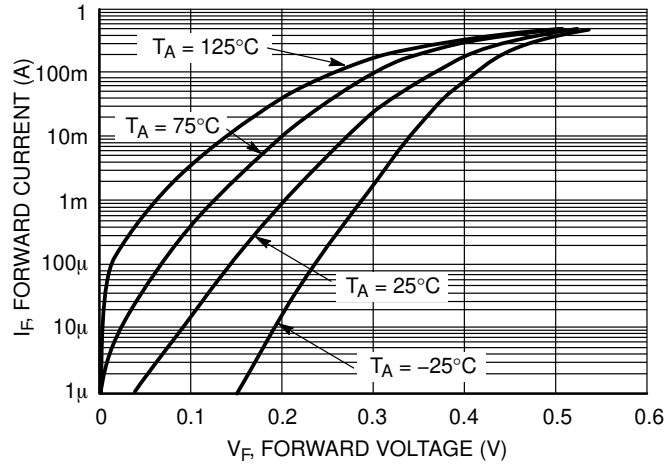


Figure 1. Forward Characteristics

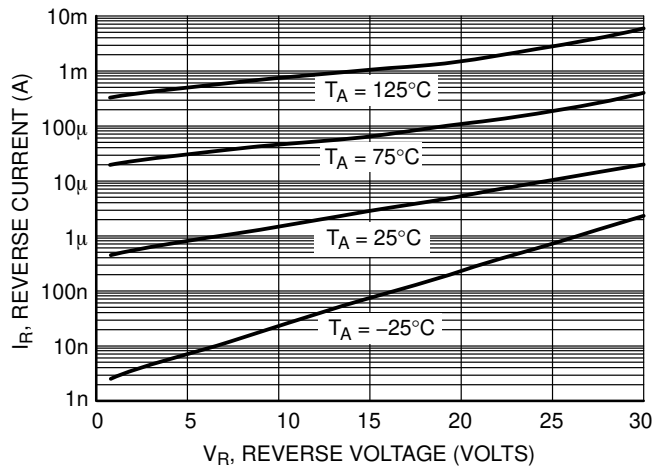


Figure 2. Reverse Characteristics

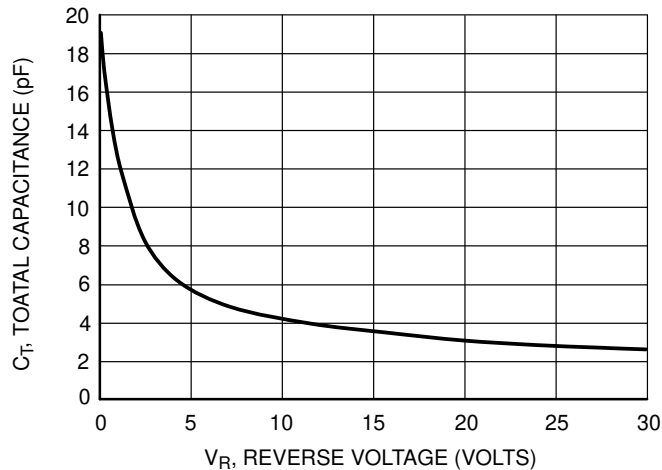
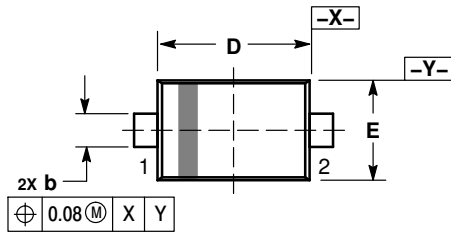


Figure 3. Total Capacitance

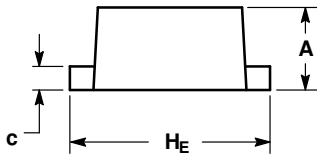
# RB521S30T1G, NSVRB521S30T1G, RB521S30T5G

## PACKAGE DIMENSIONS

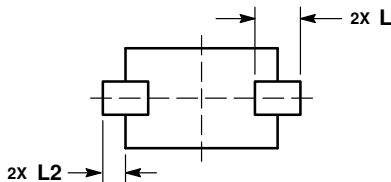
**SOD-523**  
CASE 502  
ISSUE E



**TOP VIEW**



**SIDE VIEW**



**BOTTOM VIEW**

**NOTES:**

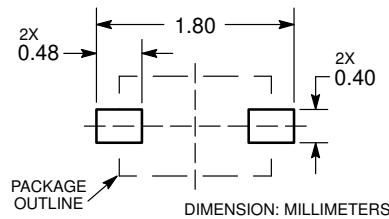
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

| DIM | MILLIMETERS |      |      |
|-----|-------------|------|------|
|     | MIN         | NOM  | MAX  |
| A   | 0.50        | 0.60 | 0.70 |
| b   | 0.25        | 0.30 | 0.35 |
| c   | 0.07        | 0.14 | 0.20 |
| D   | 1.10        | 1.20 | 1.30 |
| E   | 0.70        | 0.80 | 0.90 |
| HE  | 1.50        | 1.60 | 1.70 |
| L   | 0.30 REF    |      |      |
| L2  | 0.15        | 0.20 | 0.25 |

**STYLE 1:**

1. CATHODE (POLARITY BAND)
2. ANODE

**RECOMMENDED 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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