

# NSR0530P2T5G

## Schottky Barrier Diode

Schottky barrier diodes are optimized for very low forward voltage drop and low leakage current and are used in a wide range of dc-dc converter, clamping and protection applications in portable devices. NSR0530P2 in a SOD-923 miniature package enables designers to meet the challenging task of achieving higher efficiency and meeting reduced space requirements.

### Features

- Very Low Forward Voltage Drop - 370 mV @ 100 mA
- Low Reverse Current - 1.4  $\mu$ A @ 10 V VR
- 500 mA of Continuous Forward Current
- Power Dissipation of 190 mW with Minimum Trace
- Very High Switching Speed
- Low Capacitance - CT = 10 pF
- This is a Pb-Free Device

### Typical Applications

- LCD and Keypad Backlighting
- Camera Photo Flash
- Buck and Boost dc-dc Converters
- Reverse Voltage and Current Protection
- Clamping & Protection

### Markets

- Mobile Handsets
- MP3 Players
- Digital Camera and Camcorders
- Notebook PCs & PDAs
- GPS

### MAXIMUM RATINGS

| Rating                                        | Symbol | Value               | Unit |
|-----------------------------------------------|--------|---------------------|------|
| Reverse Voltage                               | $V_R$  | 30                  | V    |
| Forward Current (DC)                          | $I_F$  | 500                 | mA   |
| ESD Rating: Human Body Model<br>Machine Model | ESD    | Class 3B<br>Class C |      |

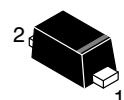
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.



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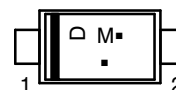
<http://onsemi.com>

## 30 V SCHOTTKY BARRIER DIODE



**SOD-923  
CASE 514AB  
PLASTIC**

### MARKING DIAGRAM



D = Specific Device Code  
M = Month Code  
▪ = Pb-Free Package  
(Note: Microdot may be in either location)

### ORDERING INFORMATION

| Device       | Package              | Shipping†                      |
|--------------|----------------------|--------------------------------|
| NSR0530P2T5G | SOD-923<br>(Pb-Free) | 2 mm Pitch<br>8000/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.

# NSR0530P2T5G

## THERMAL CHARACTERISTICS

| Characteristic                                                                                           | Symbol                   | Min | Typ | Max         | Unit                     |
|----------------------------------------------------------------------------------------------------------|--------------------------|-----|-----|-------------|--------------------------|
| Thermal Resistance<br>Junction-to-Ambient (Note 1)<br>Total Power Dissipation @ $T_A = 25^\circ\text{C}$ | $R_{\theta JA}$<br>$P_D$ |     |     | 520<br>190  | $^\circ\text{C/W}$<br>mW |
| Thermal Resistance<br>Junction-to-Ambient (Note 2)<br>Total Power Dissipation @ $T_A = 25^\circ\text{C}$ | $R_{\theta JA}$<br>$P_D$ |     |     | 175<br>570  | $^\circ\text{C/W}$<br>mW |
| Junction and Storage Temperature Range                                                                   | $T_J, T_{stg}$           |     |     | -55 to +125 | $^\circ\text{C}$         |

1. Mounted onto a 4 in square FR-4 board 10 mm sq. 1 oz. Cu 0.06" thick single sided. Operating to steady state.
2. Mounted onto a 4 in square FR-4 board 1 in sq. 1 oz. Cu 0.06" thick single sided. Operating to steady state.

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

| Characteristic                                                                                     | Symbol | Min | Typ                  | Max                  | Unit          |
|----------------------------------------------------------------------------------------------------|--------|-----|----------------------|----------------------|---------------|
| Reverse Leakage<br>( $V_R = 10\text{ V}$ )<br>( $V_R = 30\text{ V}$ )                              | $I_R$  |     | 1.4<br>24            | 10<br>200            | $\mu\text{A}$ |
| Forward Voltage ( $I_F = 10\text{ mA}$ )<br>( $I_F = 100\text{ mA}$ )<br>( $I_F = 500\text{ mA}$ ) | $V_F$  |     | 0.28<br>0.37<br>0.52 | 0.37<br>0.46<br>0.62 | V             |
| Total Capacitance<br>( $V_R = 1.0\text{ V}$ , $f = 1\text{ MHz}$ )                                 | CT     |     | 10                   |                      | pF            |

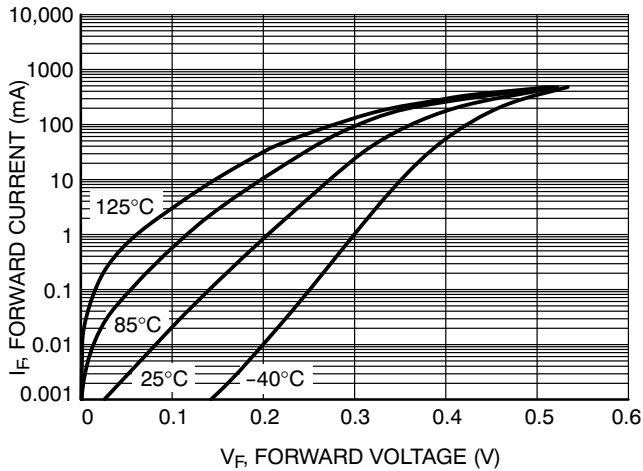


Figure 1. Forward Voltage

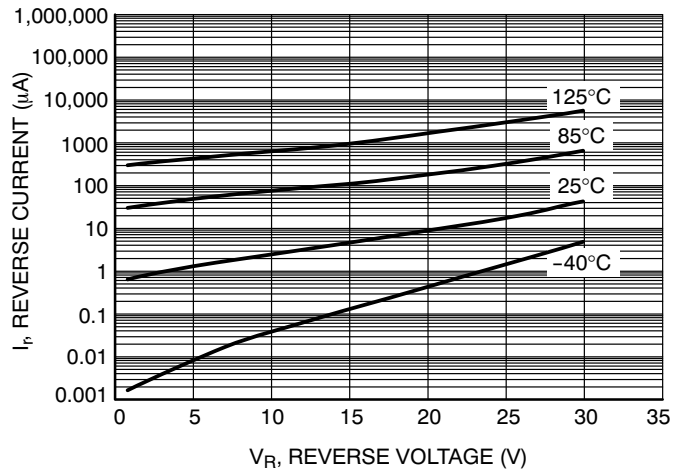


Figure 2. Leakage Current

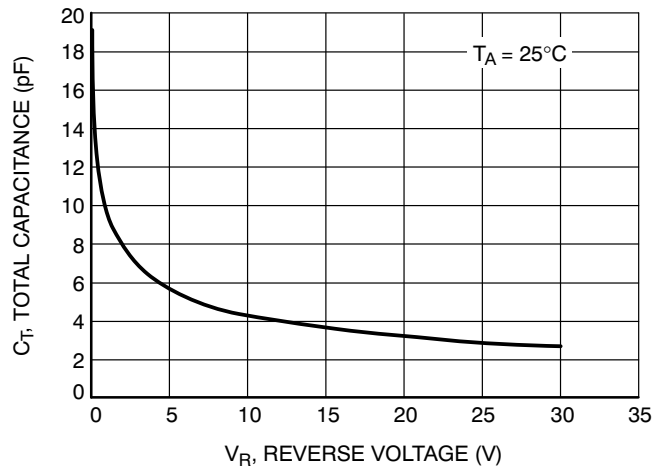
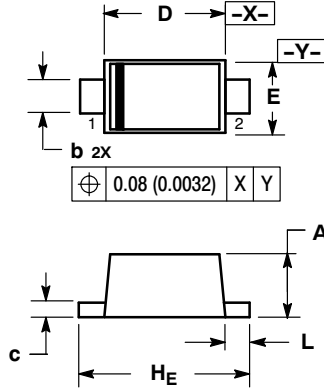


Figure 3. Total Capacitance

# NSR0530P2T5G

## PACKAGE DIMENSIONS

**SOD-923**  
CASE 514AB-01  
ISSUE B

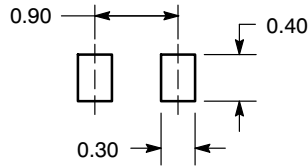


### NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

| DIM            | MILLIMETERS |      |      | INCHES |       |       |
|----------------|-------------|------|------|--------|-------|-------|
|                | MIN         | NOM  | MAX  | MIN    | NOM   | MAX   |
| A              | 0.34        | 0.37 | 0.40 | 0.013  | 0.015 | 0.016 |
| b              | 0.15        | 0.20 | 0.25 | 0.006  | 0.008 | 0.010 |
| c              | 0.07        | 0.12 | 0.17 | 0.003  | 0.005 | 0.007 |
| D              | 0.75        | 0.80 | 0.85 | 0.030  | 0.031 | 0.033 |
| E              | 0.55        | 0.60 | 0.65 | 0.022  | 0.024 | 0.026 |
| H <sub>E</sub> | 0.95        | 1.00 | 1.05 | 0.037  | 0.039 | 0.041 |
| L              | 0.05        | 0.10 | 0.15 | 0.002  | 0.004 | 0.006 |

## SOLDERING FOOTPRINT\*



DIMENSIONS: MILLIMETERS

\*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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**NSR0530P2/D**

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