

# Schottky Barrier Diode

## NSR01L30MX

These Schottky barrier diodes are optimized for low forward voltage drop and low leakage current.

### Features

- Very Low Forward Voltage Drop – 350 mV @ 1 mA
- Low Reverse Current – 0.2  $\mu$ A @ 10 V
- 100 mA of Continuous Forward Current
- ESD Rating – Human Body Model: Class 3B  
– Machine Model: Class C
- This is a Halide-Free Device
- 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)                       | $I_F$     | 100                                     | mA   |
| Forward Surge Current<br>(60 Hz @ 1 cycle) | $I_{FSM}$ | 2.0                                     | A    |
| ESD Rating:<br>Human Body Model            | HBM       | Class 1B<br>(500 $\leq$ Failure < 1000) | V    |
| Charge Device Model                        | CDM       | C3 (JEDEC)<br>(Failure $\geq$ 1000)     |      |

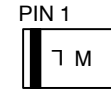
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

## 30 V SCHOTTKY BARRIER DIODE



**X3DFN2**  
**CASE 152AF**

### MARKING DIAGRAM



- L = Specific Device Code  
(Rotated 180°)
- M = Date Code

### ORDERING INFORMATION

| Device        | Package             | Shipping†              |
|---------------|---------------------|------------------------|
| NSR01L30MXT5G | X3DFN2<br>(Pb-Free) | 10000 /<br>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.

# NSR01L30MX

## 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>$P_D$ |     |     | 695<br>180  | $^\circ\text{C}/\text{W}$<br>mW |
| Storage Temperature Range  | $T_{stg}$                |     |     | -55 to +150 | $^\circ\text{C}$                |
| Junction Temperature   | $T_J$                    |     |     | +150        | $^\circ\text{C}$                |

1. Mounted onto a 4 in square FR-4 board 100 mm sq. 2 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>( $V_R = 30\text{ V}$ )  | $I_R$  |     |     | 0.2<br>0.5   | $\mu\text{A}$ |
| Forward Voltage<br>( $I_F = 1\text{ mA}$ )<br>( $I_F = 10\text{ mA}$ ) | $V_F$  |     |     | 0.35<br>0.46 | V             |
| Total Capacitance<br>( $V_R = 5.0\text{ V}$ , $f = 1\text{ MHz}$ )     | CT     |     | 0.8 |              | pF            |

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.

# NSR01L30MX

## TYPICAL CHARACTERISTICS

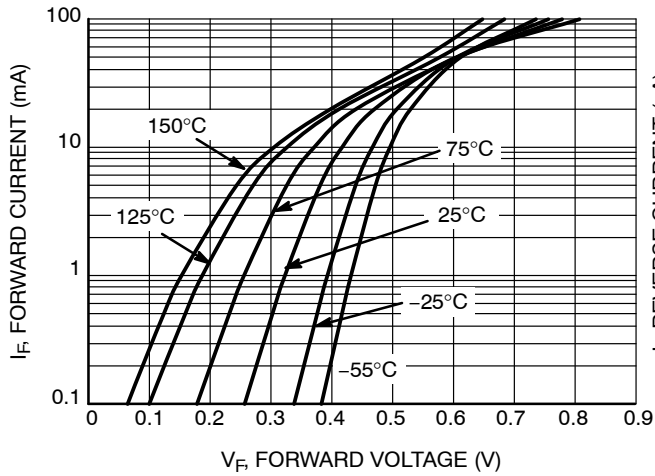


Figure 1. Forward Voltage

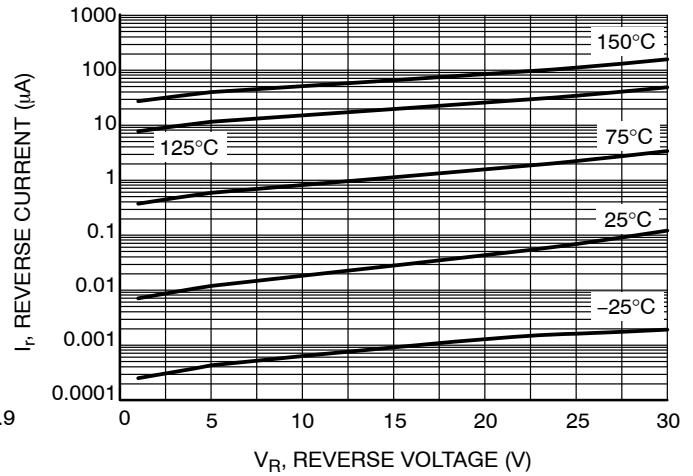


Figure 2. Leakage Current

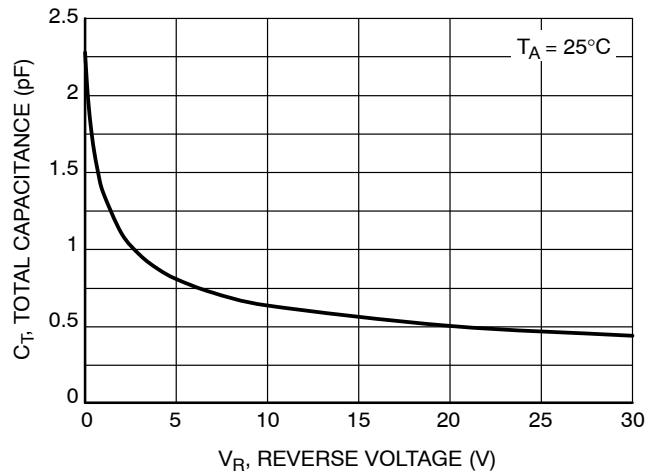
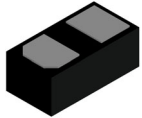
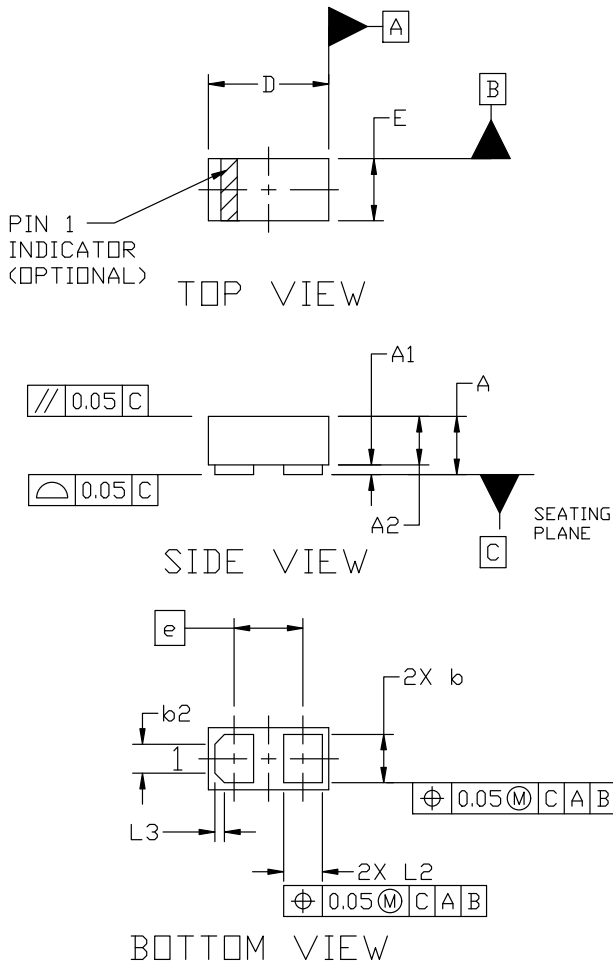


Figure 3. Total Capacitance



**X3DFN2 0.62x0.32x0.24, 0.35P**  
**CASE 152AF**  
**ISSUE C**

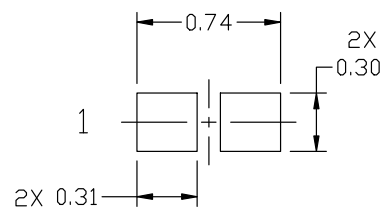
DATE 08 AUG 2023



NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS
3. 0201

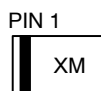
| MILLIMETERS |           |      |      |
|-------------|-----------|------|------|
| DIM         | MIN.      | NOM. | MAX. |
| A           | 0.25      | 0.29 | 0.33 |
| A1          | 0.00      | ---  | 0.05 |
| A2          | 0.14      | 0.24 | 0.34 |
| b           | 0.22      | 0.25 | 0.28 |
| b2          | 0.150 REF |      |      |
| D           | 0.58      | 0.62 | 0.66 |
| E           | 0.28      | 0.32 | 0.36 |
| e           | 0.355 BSC |      |      |
| L2          | 0.17      | 0.20 | 0.23 |
| L3          | 0.050 REF |      |      |



**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.

**GENERIC MARKING DIAGRAM\***



X = Specific Device Code  
M = Date Code

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

|                         |                                     |  |
|-------------------------|-------------------------------------|--|
| <b>DOCUMENT NUMBER:</b> | <b>98AON56472E</b>                  | Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red. |
| <b>DESCRIPTION:</b>     | <b>X3DFN2 0.62x0.32x0.24, 0.35P</b> | <b>PAGE 1 OF 1</b>   |

onsemi and ONSEMI are trademarks of Semiconductor Components Industries, LLC dba onsemi or its subsidiaries in the United States and/or other countries. onsemi reserves the right to make changes without further notice to any products herein. onsemi makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does onsemi assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. onsemi does not convey any license under its patent rights nor the rights of others.

**onsemi**, **Onsemi**, and other names, marks, and brands are registered and/or common law trademarks of Semiconductor Components Industries, LLC dba "**onsemi**" or its affiliates and/or subsidiaries in the United States and/or other countries. **onsemi** owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of **onsemi**'s product/patent coverage may be accessed at [www.onsemi.com/site/pdf/Patent-Marking.pdf](http://www.onsemi.com/site/pdf/Patent-Marking.pdf). **onsemi** reserves the right to make changes at any time to any products or information herein, without notice. The information herein is provided "as-is" and **onsemi** makes no warranty, representation or guarantee regarding the accuracy of the information, product features, availability, functionality, or suitability of its products for any particular purpose, nor does **onsemi** assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using **onsemi** products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by **onsemi**. "Typical" parameters which may be provided in **onsemi** data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. **onsemi** does not convey any license under any of its intellectual property rights nor the rights of others. **onsemi** products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use **onsemi** products for any such unintended or unauthorized application, Buyer shall indemnify and hold **onsemi** and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that **onsemi** was negligent regarding the design or manufacture of the part. **onsemi** is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

## ADDITIONAL INFORMATION

### TECHNICAL PUBLICATIONS:

Technical Library: [www.onsemi.com/design/resources/technical-documentation](http://www.onsemi.com/design/resources/technical-documentation)  
onsemi Website: [www.onsemi.com](http://www.onsemi.com)

### ONLINE SUPPORT: [www.onsemi.com/support](http://www.onsemi.com/support)

For additional information, please contact your local Sales Representative at [www.onsemi.com/support/sales](http://www.onsemi.com/support/sales)

