

NSR0230M2T5G, NSVR0230M2T5G

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 0.325 V (max) @ $I_F = 10$ mA
- Low Reverse Current
- AEC Qualified and PPAP Capable
- NSV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements
- This is a Pb-Free Device*

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|---------------------------------------------------------------------------|-----------|-------|------|
| Reverse Voltage | V_R | 30 | Vdc |
| Forward Current DC | I_F | 200 | mA |
| Forward Current Surge Peak (60 Hz, 1 cycle) | I_{FSM} | 1.0 | A |
| ESD Rating: Class 3B per Human Body Model Class C per Machine Model | | | |

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 | Max | Unit |
|-----------------------------------------------------------------------------------------------------------------|-----------------|----------------|----------------------------|
| Total Device Dissipation FR-5 Board, (Note 1) $T_A = 25^\circ\text{C}$ Derate above 25°C | P_D | 167 2.0 | mW mW/ $^\circ\text{C}$ |
| Thermal Resistance, Junction-to-Ambient | $R_{\theta JA}$ | 600 | $^\circ\text{C}/\text{W}$ |
| Junction and Storage Temperature Range | T_J, T_{stg} | -55 to +125 | $^\circ\text{C}$ |

1. FR-5 Minimum Pad.



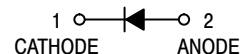
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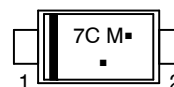
30 V SCHOTTKY BARRIER DIODE



SOD-723
CASE 509AA
PLASTIC



MARKING DIAGRAM



7C = Specific Device Code

M = Month Code

• = Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

| Device | Package | Shipping† |
|---------------|----------------------|---------------------------------|
| NSR0230M2T5G | SOD-723 (Pb-Free) | 2 mm Pitch 8,000/Tape & Reel |
| NSVR0230M2T5G | SOD-723 (Pb-Free) | 2 mm Pitch 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.

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ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|--------------------------------------------------------------------------|----------------|--------|--------|----------------|------|
| Reverse Leakage (V _R = 10 V) (V _R = 30 V) | I _R | - - | - - | 10 100 | μA |
| Forward Voltage (I _F = 10 mA) (I _F = 200 mA) | V _F | - - | - - | 0.325 0.500 | Vdc |

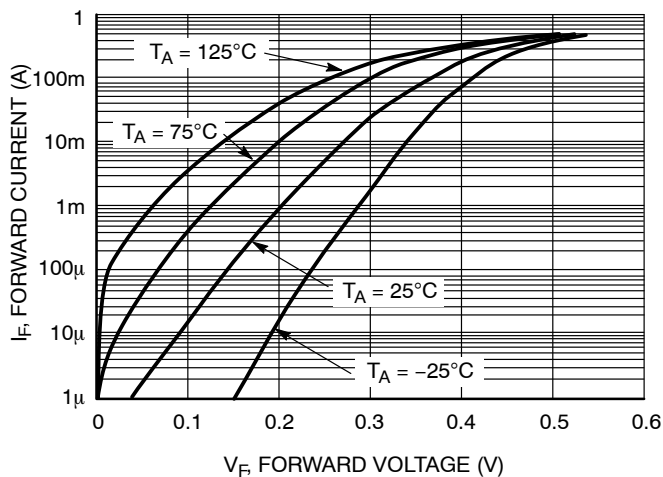


Figure 1. Forward Characteristics

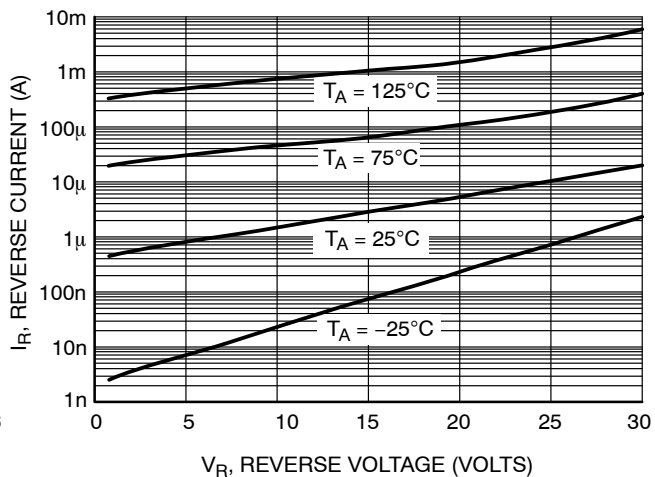


Figure 2. Reverse Characteristics

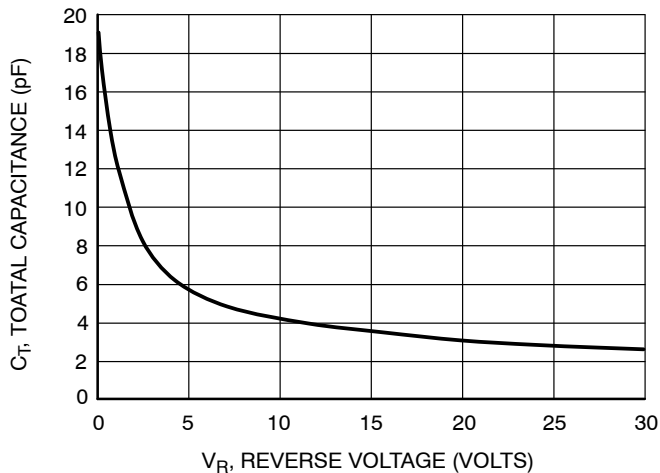
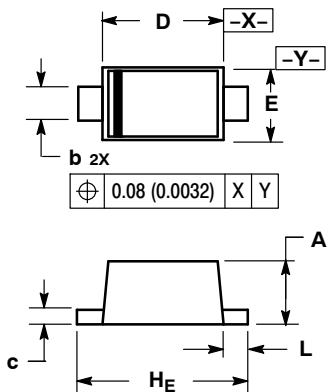


Figure 3. Total Capacitance

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PACKAGE DIMENSIONS

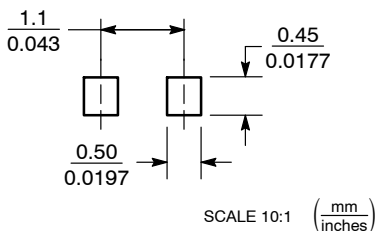
SOD-723
CASE 509AA-01
ISSUE O



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: MILLIMETER.
 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 | 0.49 | 0.52 | 0.55 | 0.019 | 0.020 | 0.022 |
| b | 0.25 | 0.28 | 0.32 | 0.0098 | 0.011 | 0.013 |
| c | 0.08 | 0.12 | 0.15 | 0.0032 | 0.0047 | 0.0059 |
| D | 0.95 | 1.00 | 1.05 | 0.037 | 0.039 | 0.041 |
| E | 0.55 | 0.60 | 0.65 | 0.022 | 0.024 | 0.026 |
| HE | 1.35 | 1.40 | 1.45 | 0.053 | 0.055 | 0.057 |
| L | 0.15 | 0.20 | 0.25 | 0.006 | 0.0079 | 0.010 |

SOLDERING FOOTPRINT*



SOD-723

*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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