

NSR02100HT1G

Schottky Barrier Diodes

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

- Fast Switching Speed
- Low Leakage Current
- Low Forward Voltage – 0.45 V @ $I_F = 1$ mA
- Surface Mount Device
- Low Capacitance Diode
- NSVR 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

| Characteristic | Symbol | Value | 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/ $^\circ\text{C}$ |
| Forward Current (DC) | I_F | 200 | mA |
| Non-Repetitive Peak Forward Current, $t_p < 10$ msec | I_{FSM} | 2 | A |
| 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-4 Minimum Pad



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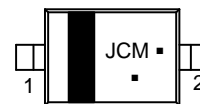
100 VOLT SCHOTTKY BARRIER DIODE



SOD-323
CASE 477
STYLE 1



MARKING DIAGRAM



JC = Device Code
M = Date Code
▪ = Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

| Device | Package | Shipping† |
|---------------|----------------------|------------------------|
| NSR02100HT1G | SOD-323 (Pb-Free) | 3,000 / Tape & Reel |
| NSVR02100HT1G | SOD-323 (Pb-Free) | 3,000 / 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.

NSR02100HT1G

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_R | – | 100 | – | V |
| Reverse Leakage ($V_R = 50 \text{ V}$) | I_R | – | – | 0.05 | μA_{dc} |
| Reverse Leakage ($V_R = 100 \text{ V}$) | I_R | – | – | 0.15 | μA_{dc} |
| Forward Voltage ($I_F = 1 \text{ mA}_{dc}$) | V_F | – | – | 0.45 | Vdc |
| Forward Voltage ($I_F = 10 \text{ mA}_{dc}$) | V_F | – | – | 0.57 | Vdc |
| Forward Voltage ($I_F = 100 \text{ mA}_{dc}$) | V_F | – | – | 0.80 | Vdc |
| Forward Voltage ($I_F = 200 \text{ mA}_{dc}$) | V_F | – | – | 0.95 | Vdc |
| Total Capacitance ($V_R = 1.0 \text{ V}$, $f = 1.0 \text{ MHz}$) | C_T | – | 4 | 10 | 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.

NSR02100HT1G

TYPICAL CHARACTERISTICS

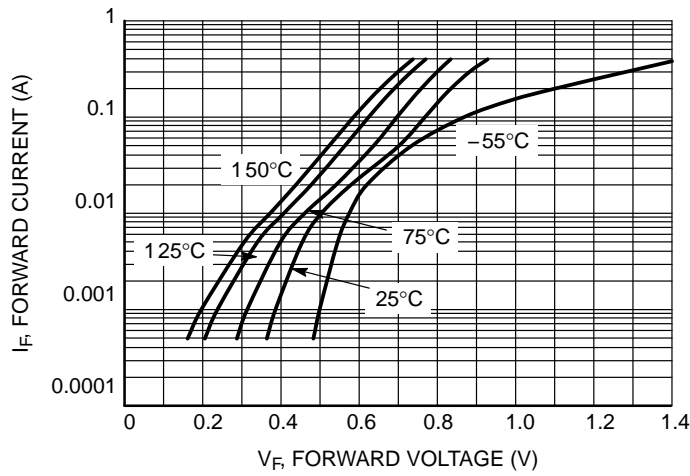


Figure 1. Forward Voltage

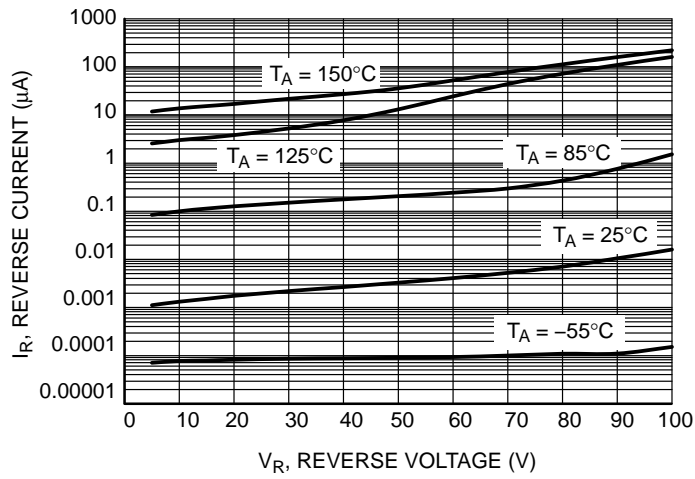


Figure 2. Leakage Current

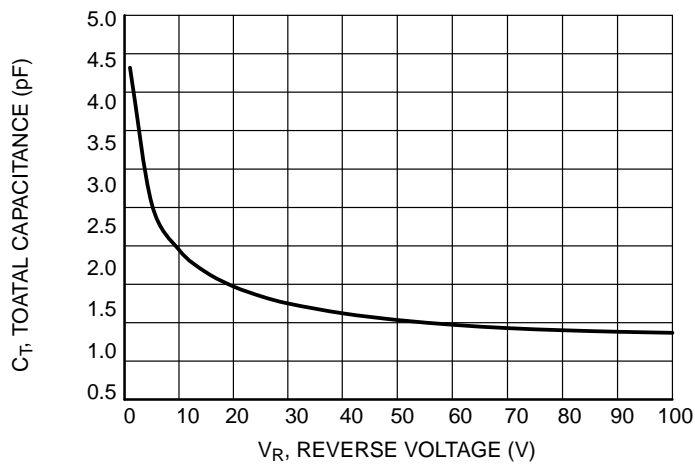
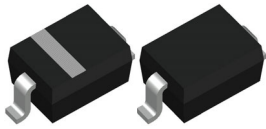
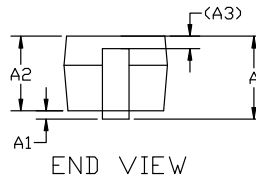
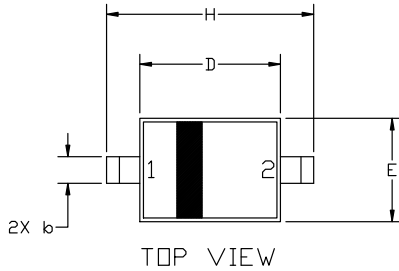


Figure 3. Total Capacitance



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

DATE 11 MAR 2024



RECOMMENDED MOUNTING FOOTPRINT

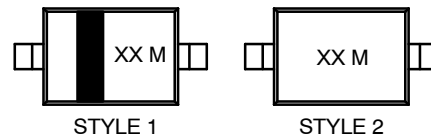
*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference manual, SOLDERRM/D.

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) STYLE 2: NO POLARITY
2. ANODE

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

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