

# MMBD352WT1G, NSVMMBD352WT1G

## Dual Schottky Barrier Diode

These devices are designed primarily for UHF mixer applications but are suitable also for use in detector and ultra-fast switching circuits.

### Features

- Very Low Capacitance – Less Than 1.0 pF @ 0 V
- Low Forward Voltage – 0.5 V (Typ) @  $I_F = 10$  mA
- AEC Qualified and PPAP Capable
- NSV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant\*

### MAXIMUM RATINGS

| Rating                     | Symbol | Value | Unit     |
|----------------------------|--------|-------|----------|
| Continuous Reverse Voltage | $V_R$  | 7.0   | $V_{CC}$ |

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

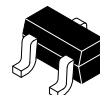
| Characteristic                                                                                                     | Symbol          | Max         | Unit                       |
|--------------------------------------------------------------------------------------------------------------------|-----------------|-------------|----------------------------|
| Total Device Dissipation FR-5 Board (Note 1)<br>$T_A = 25^\circ\text{C}$<br>Derate above $25^\circ\text{C}$        | $P_D$           | 200<br>1.6  | mW<br>mW/ $^\circ\text{C}$ |
| Thermal Resistance,<br>Junction-to-Ambient                                                                         | $R_{\theta JA}$ | 625         | $^\circ\text{C/W}$         |
| Total Device Dissipation Alumina Substrate (Note 2)<br>$T_A = 25^\circ\text{C}$<br>Derate above $25^\circ\text{C}$ | $P_D$           | 300<br>2.4  | mW<br>mW/ $^\circ\text{C}$ |
| Thermal Resistance,<br>Junction-to-Ambient                                                                         | $R_{\theta JA}$ | 417         | $^\circ\text{C/W}$         |
| Junction and Storage Temperature                                                                                   | $T_J, T_{stg}$  | -55 to +150 | $^\circ\text{C}$           |

1. FR-5 =  $1.0 \times 0.75 \times 0.062$  in.
2. Alumina =  $0.4 \times 0.3 \times 0.024$  in. 99.5% alumina.

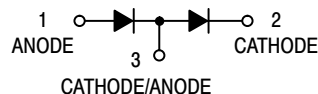


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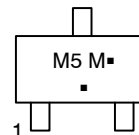
<http://onsemi.com>



SOT-323 (SC-70)  
CASE 419  
STYLE 9



### MARKING DIAGRAM



M5 = Specific Device Code  
M = Date Code  
■ = Pb-Free Package

(Note: Microdot may be in either location)

### ORDERING INFORMATION

| Device         | Package           | Shipping†           |
|----------------|-------------------|---------------------|
| MMBD352WT1G    | SOT-323 (Pb-Free) | 3,000 / Tape & Reel |
| NSVMMBD352WT1G | SOT-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.

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

# MMBD352WT1G, NSVMMBD352WT1G

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

| Characteristic                                                                          | Symbol | Min    | Max        | Unit          |
|-----------------------------------------------------------------------------------------|--------|--------|------------|---------------|
| <b>OFF CHARACTERISTICS</b>                                                              |        |        |            |               |
| Forward Voltage<br>( $I_F = 10\text{ mA}$ )                                             | $V_F$  | –      | 0.60       | V             |
| Reverse Voltage Leakage Current<br>( $V_R = 3.0\text{ V}$ )<br>( $V_R = 7.0\text{ V}$ ) | $I_R$  | –<br>– | 0.25<br>10 | $\mu\text{A}$ |
| Capacitance<br>( $V_R = 0\text{ V}$ , $f = 1.0\text{ MHz}$ )                            | C      | –      | 1.0        | pF            |

## TYPICAL CHARACTERISTICS

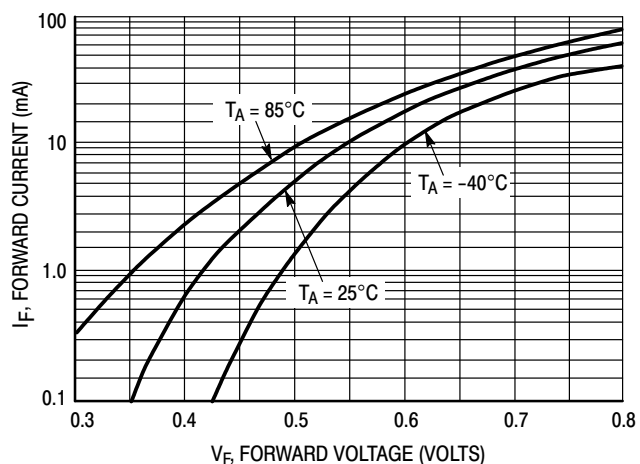


Figure 1. Forward Voltage

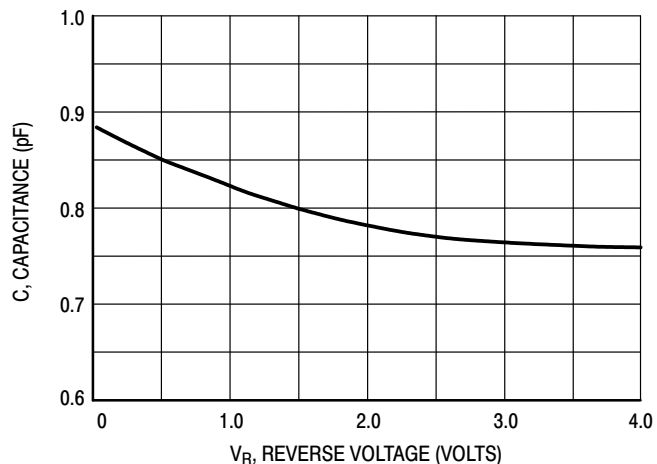
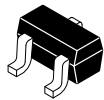


Figure 2. Capacitance



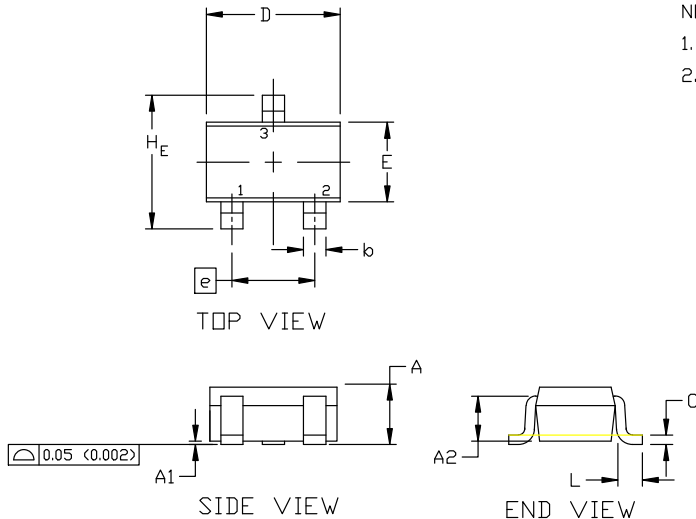
SCALE 4:1

### SC-70 (SOT-323)

#### CASE 419

#### ISSUE R

DATE 11 OCT 2022

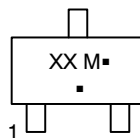


#### NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH

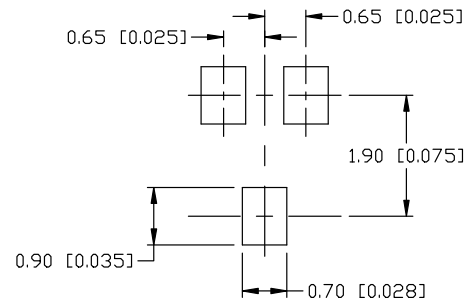
| DIM            | MILLIMETERS |      |      | INCHES    |       |       |
|----------------|-------------|------|------|-----------|-------|-------|
|                | MIN.        | NOM. | MAX. | MIN.      | NOM.  | MAX.  |
| A              | 0.80        | 0.90 | 1.00 | 0.032     | 0.035 | 0.040 |
| A1             | 0.00        | 0.05 | 0.10 | 0.000     | 0.002 | 0.004 |
| A2             | 0.70 REF    |      |      | 0.028 BSC |       |       |
| b              | 0.30        | 0.35 | 0.40 | 0.012     | 0.014 | 0.016 |
| c              | 0.10        | 0.18 | 0.25 | 0.004     | 0.007 | 0.010 |
| D              | 1.80        | 2.00 | 2.20 | 0.071     | 0.080 | 0.087 |
| E              | 1.15        | 1.24 | 1.35 | 0.045     | 0.049 | 0.053 |
| e              | 1.20        | 1.30 | 1.40 | 0.047     | 0.051 | 0.055 |
| e1             | 0.65 BSC    |      |      | 0.026 BSC |       |       |
| L              | 0.20        | 0.38 | 0.56 | 0.008     | 0.015 | 0.022 |
| H <sub>E</sub> | 2.00        | 2.10 | 2.40 | 0.079     | 0.083 | 0.095 |

#### GENERIC MARKING DIAGRAM



XX = Specific Device Code  
M = Date Code  
■ = Pb-Free Package

\*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.



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

#### SOLDERING FOOTPRINT

STYLE 1:  
CANCELLED

STYLE 2:  
PIN 1. ANODE  
2. N.C.  
3. CATHODE

STYLE 3:  
PIN 1. BASE  
2. EMITTER  
3. COLLECTOR

STYLE 4:  
PIN 1. CATHODE  
2. CATHODE  
3. ANODE

STYLE 5:  
PIN 1. ANODE  
2. ANODE  
3. CATHODE

STYLE 6:  
PIN 1. EMITTER  
2. BASE  
3. COLLECTOR

STYLE 7:  
PIN 1. BASE  
2. EMITTER  
3. COLLECTOR

STYLE 8:  
PIN 1. GATE  
2. SOURCE  
3. DRAIN

STYLE 9:  
PIN 1. ANODE  
2. CATHODE  
3. CATHODE-ANODE

STYLE 10:  
PIN 1. CATHODE  
2. ANODE  
3. ANODE-CATHODE

STYLE 11:  
PIN 1. CATHODE  
2. CATHODE  
3. CATHODE

|                  |                 |                                                                                                                                                                                     |
|------------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
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| DESCRIPTION:     | SC-70 (SOT-323) | PAGE 1 OF 1                                                                                                                                                                         |

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