

# MMBD717LT1G

## Common Anode 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

- Extremely Fast Switching Speed
- Extremely Low Forward Voltage – 0.28 V (Typ) @  $I_F = 1$  mAdc
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

### MAXIMUM RATINGS ( $T_J = 125^\circ\text{C}$ unless otherwise noted)

| Rating   | Symbol    | Value       | Unit                       |
|--|-----------|-------------|----------------------------|
| Reverse Voltage  | $V_R$     | 20          | V                          |
| Forward Power Dissipation<br>@ $T_A = 25^\circ\text{C}$<br>Derate above $25^\circ\text{C}$ | $P_F$     | 200<br>1.6  | mW<br>mW/ $^\circ\text{C}$ |
| Operating Junction Temperature Range   | $T_J$     | -55 to +150 | $^\circ\text{C}$           |
| Storage Temperature Range  | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$           |

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.

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

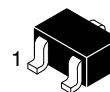
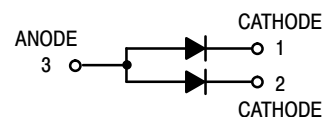
| Rating   | Symbol      | Min | Typ  | Max  | Unit            |
|--|-------------|-----|------|------|-----------------|
| Reverse Breakdown Voltage<br>( $I_R = 10 \mu\text{A}$ )  | $V_{(BR)R}$ | 20  | -    | -    | V               |
| Total Capacitance<br>( $V_R = 1.0$ V, $f = 1.0$ MHz)   | $C_T$       | -   | 2.0  | 2.5  | $P_F$           |
| Reverse Leakage ( $V_R = 10$ V)<br>(For each individual diode while<br>the second diode is unbiased) | $I_R$       | -   | 0.05 | 1.0  | $\mu\text{Adc}$ |
| Forward Voltage ( $I_F = 1.0$ mAdc)  | $V_F$       | -   | 0.28 | 0.37 | Vdc             |



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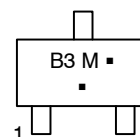
<http://onsemi.com>

## 20 VOLT SCHOTTKY BARRIER DETECTOR AND SWITCHING DIODES



SC-70 / SOT-323  
CASE 419  
STYLE 4

### MARKING DIAGRAM



B3 = Device Code  
M = Date Code\*  
■ = Pb-Free Package

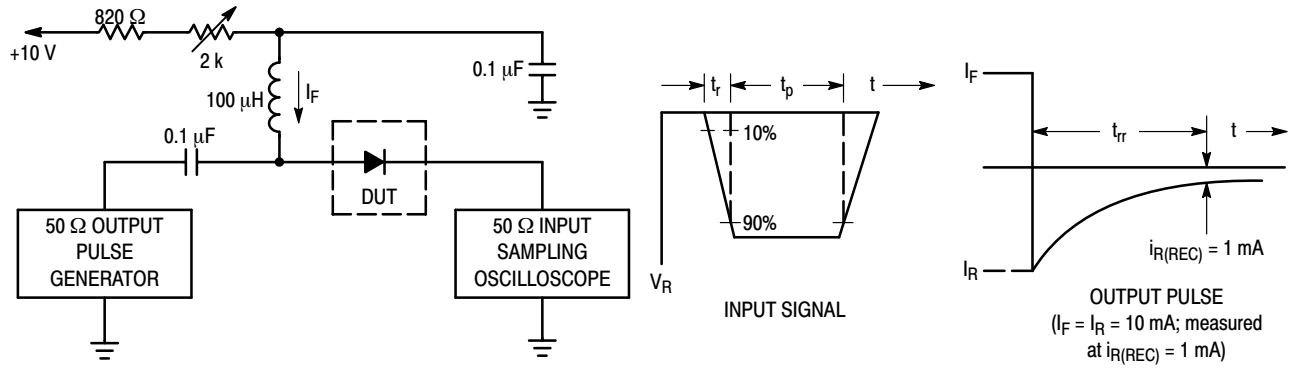
(Note: Microdot may be in either location)  
\*Date Code orientation and/or overbar may vary depending upon manufacturing location.

### ORDERING INFORMATION

| Device      | Package            | Shipping†           |
|-------------|--------------------|---------------------|
| MMBD717LT1G | SC-70<br>(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.

# MMBD717LT1G



- NOTES: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current ( $I_F$ ) of 10 mA.  
 2. Input pulse is adjusted so  $I_{R(\text{peak})}$  is equal to 10 mA.  
 3.  $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

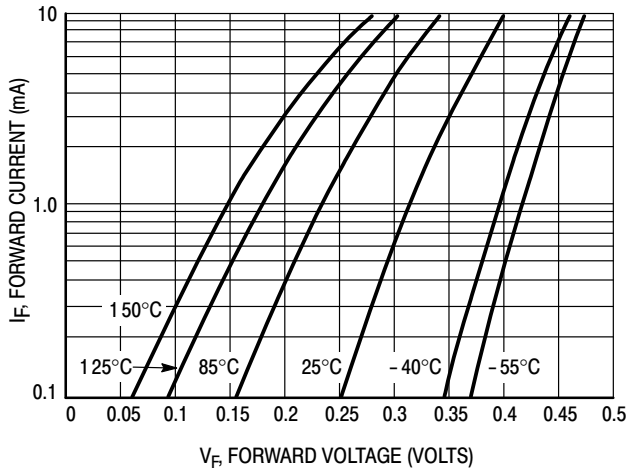


Figure 2. Typical Forward Voltage

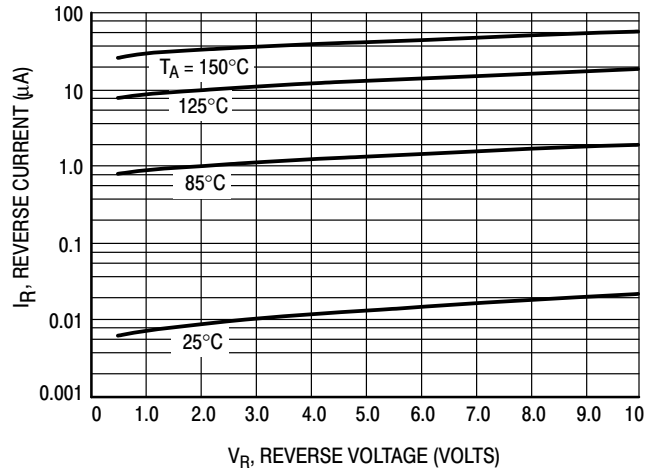


Figure 3. Reverse Current versus Reverse Voltage

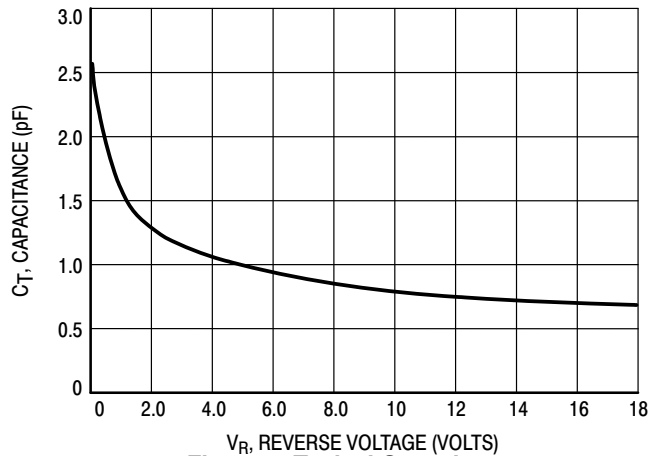
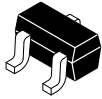


Figure 4. Typical Capacitance

# MECHANICAL CASE OUTLINE PACKAGE DIMENSIONS



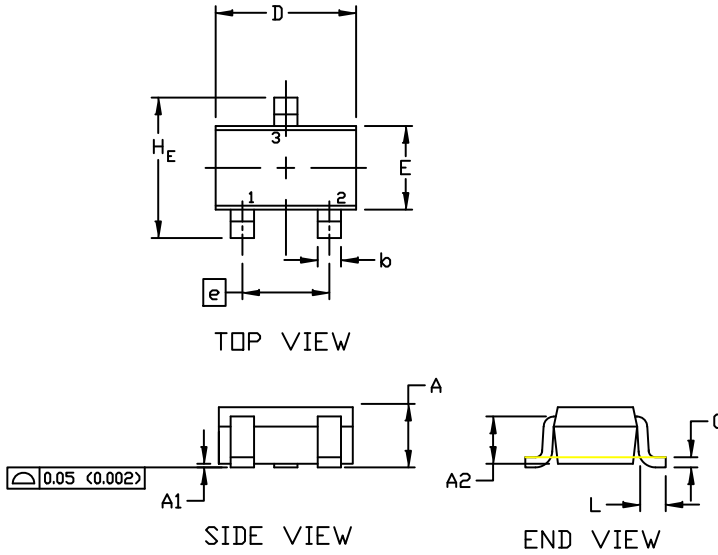
SCALE 4:1

SC-70 (SOT-323)  
CASE 419  
ISSUE P

DATE 07 OCT 2021

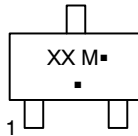
NOTES:

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



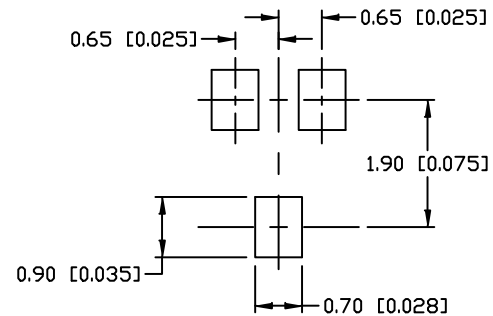
| DIM            | MILLIMETERS |      |      | INCHES    |       |       |
|----------------|-------------|------|------|-----------|-------|-------|
|                | MIN.        | NDM. | MAX. | MIN.      | NDM.  | MAX.  |
| A              | 0.80        | 0.90 | 1.00 | 0.032     | 0.035 | 0.040 |
| 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        | 2.10 | 2.20 | 0.071     | 0.083 | 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 DN Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

SOLDERING FOOTPRINT

- |   |   |   |  |   |   |
|---|---|---|--|---|---|
| STYLE 1:<br>CANCELLED                                 | STYLE 2:<br>PIN 1. ANODE<br>2. N.C.<br>3. CATHODE     | STYLE 3:<br>PIN 1. BASE<br>2. EMITTER<br>3. COLLECTOR | STYLE 4:<br>PIN 1. CATHODE<br>2. CATHODE<br>3. ANODE       | STYLE 5:<br>PIN 1. ANODE<br>2. ANODE<br>3. CATHODE          |   |
| STYLE 6:<br>PIN 1. EMITTER<br>2. BASE<br>3. COLLECTOR | STYLE 7:<br>PIN 1. BASE<br>2. EMITTER<br>3. COLLECTOR | STYLE 8:<br>PIN 1. GATE<br>2. SOURCE<br>3. DRAIN      | STYLE 9:<br>PIN 1. ANODE<br>2. CATHODE<br>3. CATHODE-ANODE | STYLE 10:<br>PIN 1. CATHODE<br>2. ANODE<br>3. ANODE-CATHODE | STYLE 11:<br>PIN 1. CATHODE<br>2. CATHODE<br>3. CATHODE |

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

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