# MMBD330T1, MMBD770T1

# Schottky Barrier Diodes

Schottky barrier diodes are designed primarily for high−efficiency UHF and VHF detector applications. Readily available to many other fast switching RF and digital applications. They are housed in the SOT−323/SC−70 package which is designed for low−power surface mount applications.

**Features**

- Extremely Low Minority Carrier Lifetime
- Very Low Capacitance
- Low Reverse Leakage
- Available in 8 mm Tape and Reel
- Pb−Free Packages are Available

**MAXIMUM RATINGS**

| Rating | | Symbol | Value | Unit |
|---|---|---|---|---|
| Reverse Voltage | MMBD330T1<br>MMBD770T1 | $V_R$ | 30<br>70 | Vdc |
| Forward Continuous Current (DC) | | $I_F$ | 200 | mA |
| Nonrepetitive Peak Forward Current (Note 1) | | $I_{FSM}$ | 1.0 | A |
| Forward Power Dissipation $T_A$ = 25°C | | $P_F$ | 120 | mW |
| Junction Temperature | | $T_J$ | −55 to +125 | °C |
| Storage Temperature Range | | $T_{stg}$ | −55 to +150 | °C |

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

1. 60 Hz Halfsine.

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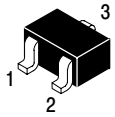
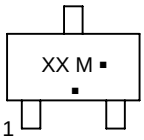
**MARKING DIAGRAMS**




**SC−70/SOT−323**
**CASE 419**




XX = Specific Device Code
4T = MMBD330T1
5H = MMBD770T1
M = Date Code
▪ = Pb−Free Package
(Note: Microdot may be in either location)
*Date Code orientation may vary depending upon the manufacturing location.

**ORDERING INFORMATION**

| Device | Package | Shipping† |
|---|---|---|
| MMBD330T1 | SC−70 | 3000/Tape & Reel |
| MMBD330T1G | SC−70 (Pb−Free) | 3000/Tape & Reel |
| MMBD770T1 | SC−70 | 3000/Tape & Reel |
| MMBD770T1G | SC−70 (Pb−Free) | 3000/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.

**Preferred** devices are recommended choices for future use and best overall value.

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

| Characteristic | | Symbol | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Reverse Breakdown Voltage ($I_R$ = 10 μA) | MMBD330T1 | $V_{(BR)R}$ | 30 | – | – | Volts |
| | MMBD770T1 | | 70 | – | – | |
| Diode Capacitance | | $C_T$ | | | | pF |
| ($V_R$ = 15 Volts, f = 1.0 MHZ) | MMBD330T1 | | – | 0.9 | 1.5 | |
| ($V_R$ = 20 Volts, f = 1.0 MHZ) | MMBD770T1 | | – | 0.5 | 1.0 | |
| Reverse Leakage | | $I_R$ | | | | nAdc |
| ($V_R$ = 25 V) | MMBD330T1 | | – | 13 | 200 | |
| ($V_R$ = 35 V) | MMBD770T1 | | – | 9.0 | 200 | |
| Forward Voltage | | $V_F$ | | | | Vdc |
| ($I_F$ = 1.0 mAdc) | MMBD330T1 | | – | 0.38 | 0.45 | |
| ($I_F$ = 10 mA) | | | – | 0.52 | 0.60 | |
| ($I_F$ = 1.0 mAdc) | MMBD770T1 | | – | 0.42 | 0.50 | |
| ($I_F$ = 10 mA) | | | – | 0.70 | 1.0 | |

## TYPICAL CHARACTERISTICS
## MMBD330T1

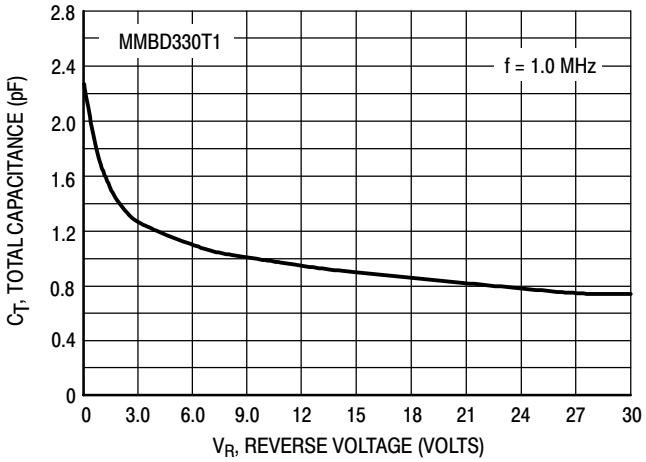



**Figure 1. Total Capacitance**

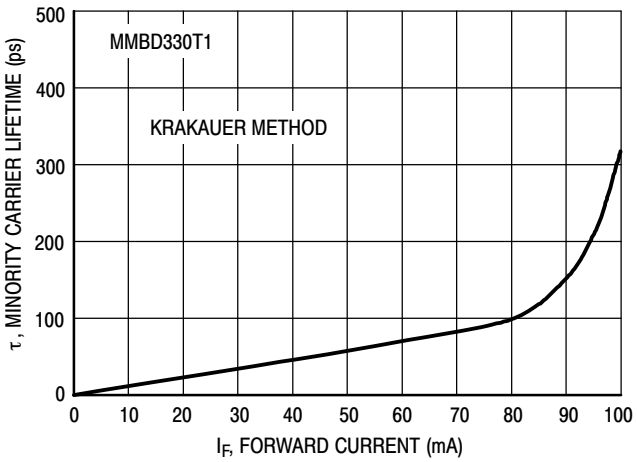



**Figure 2. Minority Carrier Lifetime**

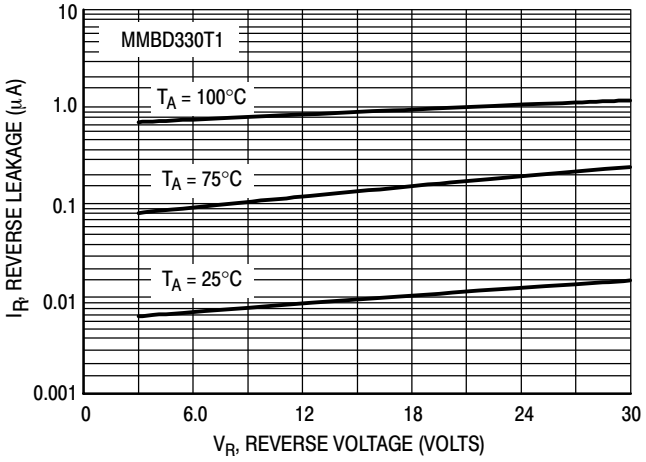



**Figure 3. Reverse Leakage**

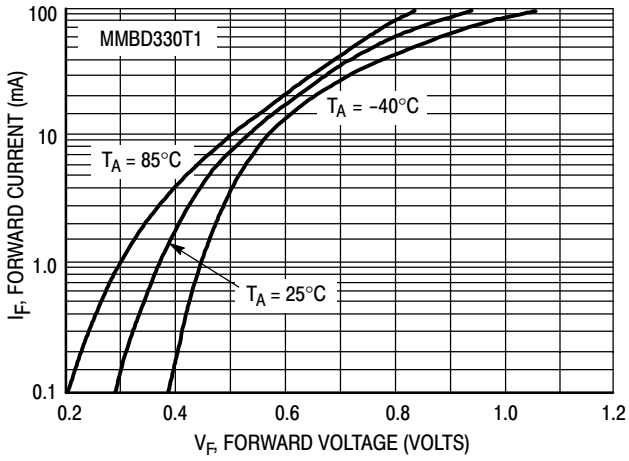



**Figure 4. Forward Voltage**

## TYPICAL CHARACTERISTICS
## MMBD770T1

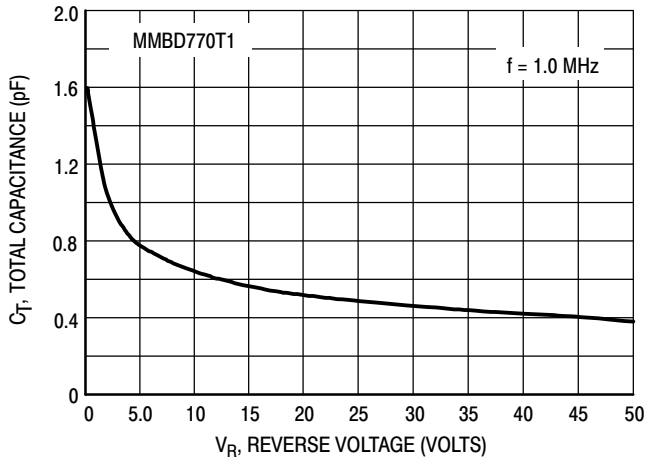



**Figure 5. Total Capacitance**

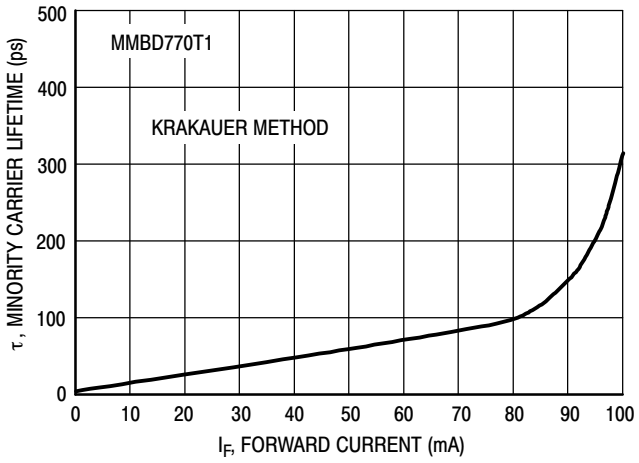



**Figure 6. Minority Carrier Lifetime**

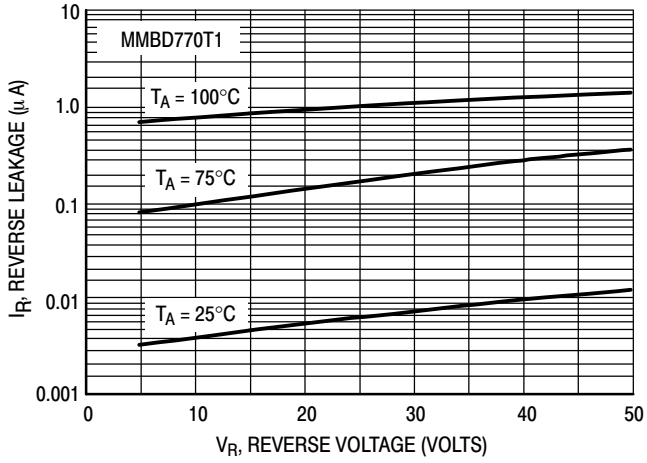



**Figure 7. Reverse Leakage**

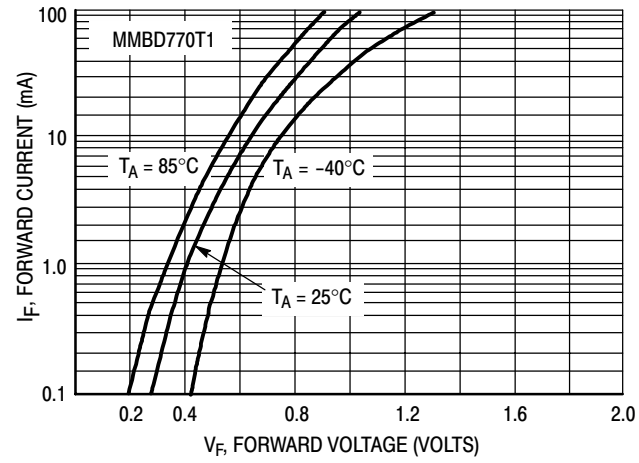
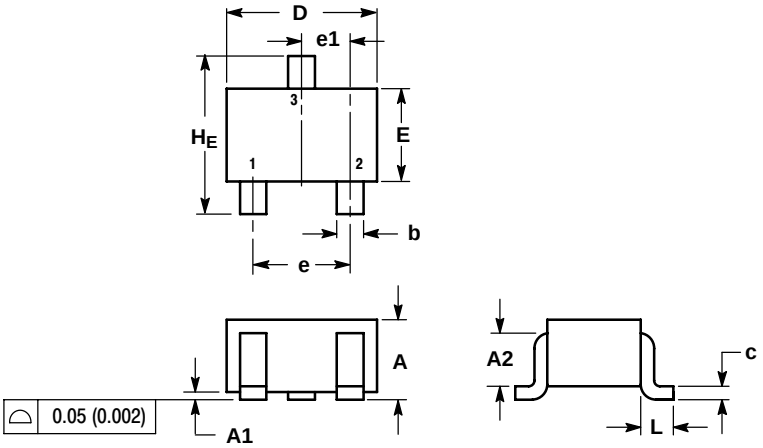



**Figure 8. Forward Voltage**

## PACKAGE DIMENSIONS

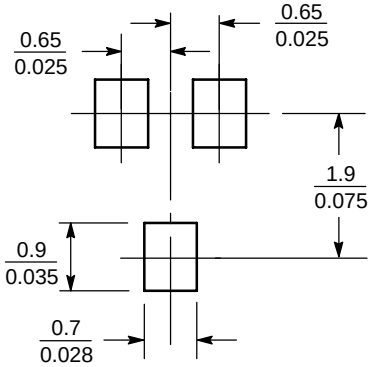
**SC−70 (SOT−323)**
CASE 419−04
ISSUE M




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

| | MILLIMETERS | | | INCHES | | |
|---|---|---|---|---|---|---|
| DIM | 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 | | 0.7 REF | | | 0.028 REF | |
| 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 | | 0.425 REF | | | 0.017 REF | |
| $H_E$ | 2.00 | 2.10 | 2.40 | 0.079 | 0.083 | 0.095 |

## SOLDERING FOOTPRINT*




SCALE 10:1 $\left(\frac{\text{mm}}{\text{inches}}\right)$

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



**PUBLICATION ORDERING INFORMATION**

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**Fax**: 480−829−7709 or 800−344−3867 Toll Free USA/Canada
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2−9−1 Kamimeguro, Meguro−ku, Tokyo, Japan 153−0051
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**Order Literature**: http://www.onsemi.com/litorder

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**MMBD330T1/D**