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 MMBD770T1	V_R	30 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.

ON Semiconductor®

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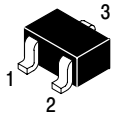
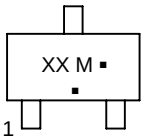
MARKING DIAGRAMS



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

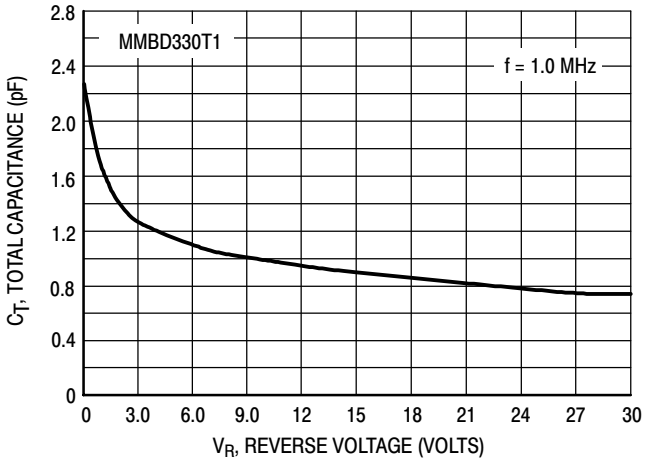


Figure 1. Total Capacitance

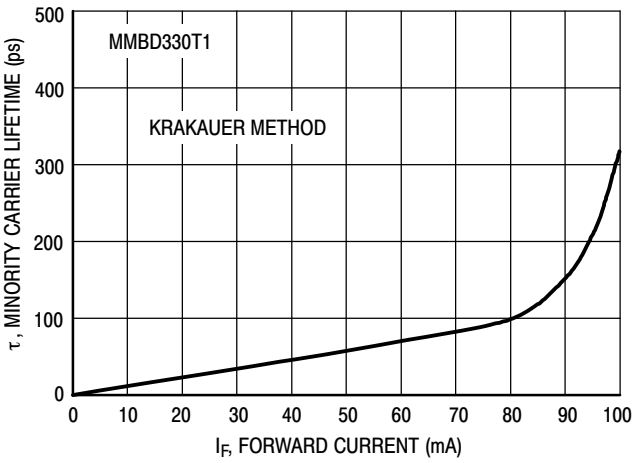


Figure 2. Minority Carrier Lifetime

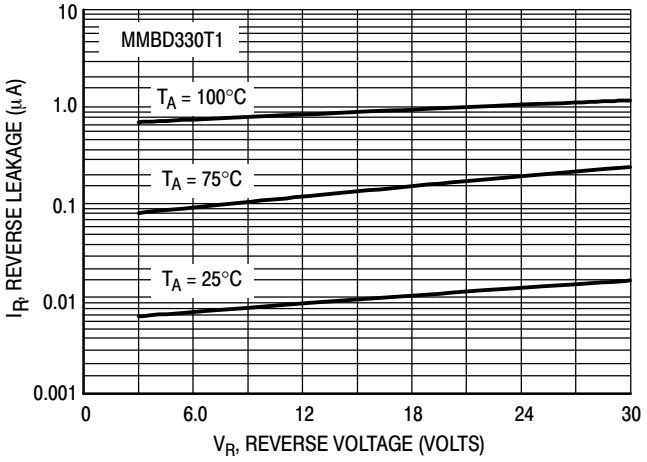


Figure 3. Reverse Leakage

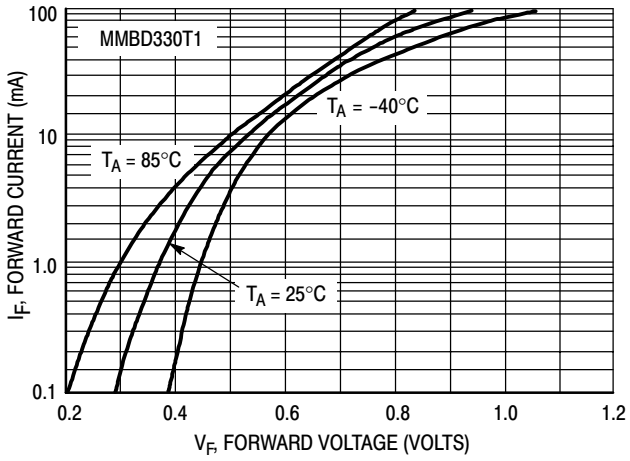


Figure 4. Forward Voltage

TYPICAL CHARACTERISTICS
MMBD770T1

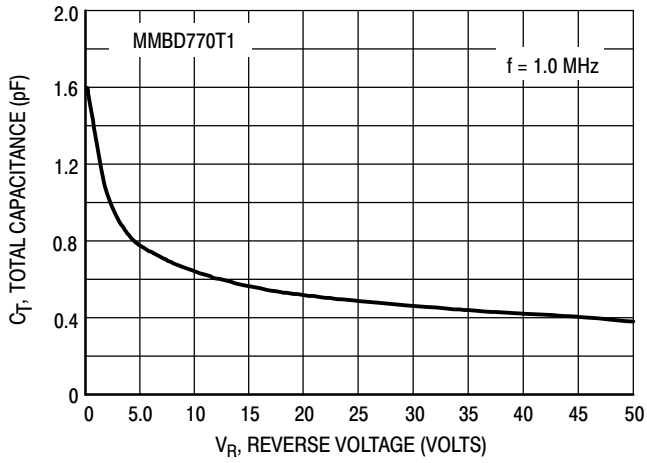


Figure 5. Total Capacitance

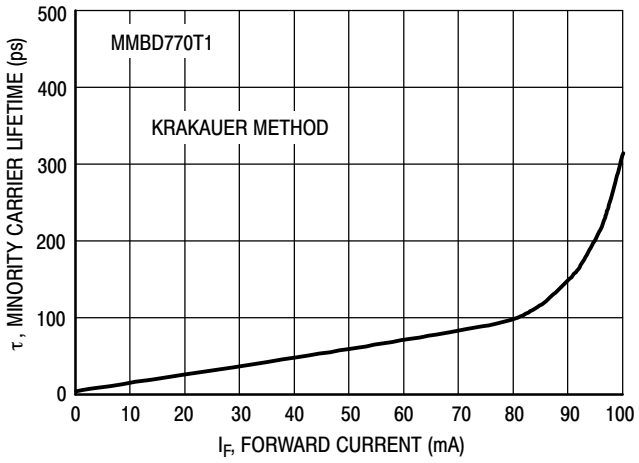


Figure 6. Minority Carrier Lifetime

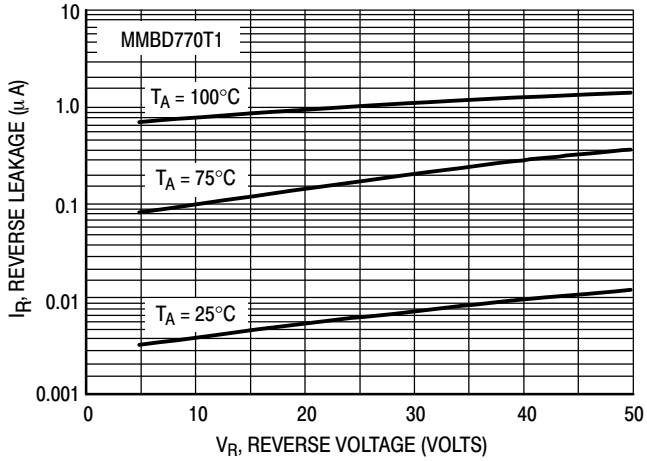


Figure 7. Reverse Leakage

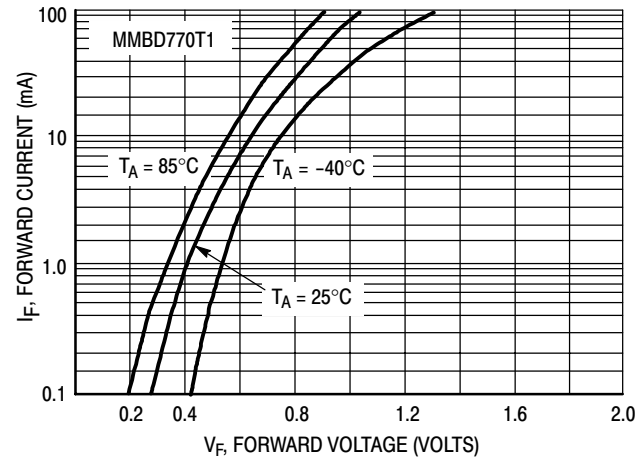
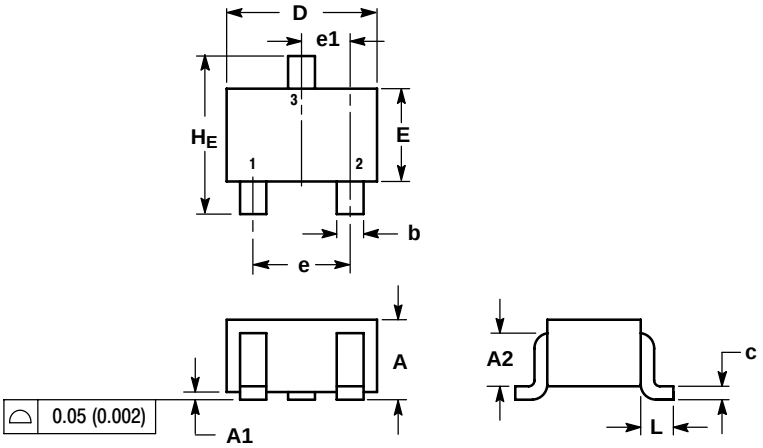


Figure 8. Forward Voltage

PACKAGE DIMENSIONS

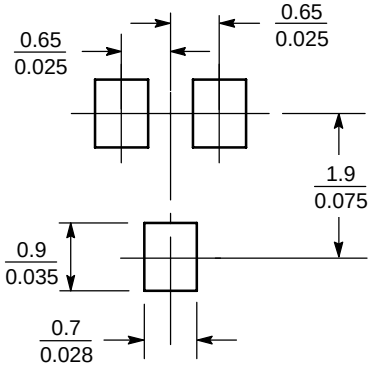
SC−70 (SOT−323)
CASE 419−04
ISSUE M



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

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
P.O. Box 61312, Phoenix, Arizona 85082−1312 USA
Phone: 480−829−7710 or 800−344−3860 Toll Free USA/Canada
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ON Semiconductor Website: http://onsemi.com

Order Literature: http://www.onsemi.com/litorder

For additional information, please contact your local Sales Representative.

MMBD330T1/D