

MMBD330T1G, SMMBD330T1G, MMBD770T1G, SMMBD770T1G



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
- AEC Qualified and PPAP Capable
- S 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

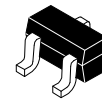
Rating	Symbol	Value	Unit
Reverse Voltage MMBD330T1G, SMMBD330T1G MMBD770T1G, SMMBD770T1G	V_R	30 70	Vdc
Forward Continuous Current (DC)	I_F	200	mA
Nonrepetitive Peak Forward Current (Note 1)	I_{FSM}	1.0	A
Forward Power Dissipation $T_A = 25^\circ\text{C}$	P_F	120	mW
Junction Temperature	T_J	-55 to +125	$^\circ\text{C}$
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.

1. 60 Hz Halfsine.

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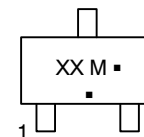
<http://onsemi.com>



SC-70/SOT-323
CASE 419



MARKING DIAGRAMS



- 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†
MMBD330T1G	SC-70 (Pb-Free)	3,000/Tape & Reel
SMMBD330T1G	SC-70 (Pb-Free)	3,000/Tape & Reel
MMBD770T1G	SC-70 (Pb-Free)	3,000/Tape & Reel
SMMBD770T1G	SC-70 (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.

MMBD330T1G, SMMBD330T1G, MMBD770T1G, SMMBD770T1G

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

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage (I _R = 10 μA) MMBD330T1G, SMMBD330T1G MMBD770T1G, SMMBD770T1G	V _{(BR)R}	30 70	- -	- -	Volts
Diode Capacitance (V _R = 15 Volts, f = 1.0 MHz) MMBD330T1G, SMMBD330T1G (V _R = 20 Volts, f = 1.0 MHz) MMBD770T1G, SMMBD770T1G	C _T	- -	0.9 0.5	1.5 1.0	pF
Reverse Leakage (V _R = 25 V) MMBD330T1G, SMMBD330T1G (V _R = 35 V) MMBD770T1G, SMMBD770T1G	I _R	- -	13 9.0	200 200	nAdc
Forward Voltage (I _F = 1.0 mAdc) MMBD330T1G, SMMBD330T1G (I _F = 10 mA) (I _F = 1.0 mAdc) MMBD770T1G, SMMBD770T1G (I _F = 10 mA)	V _F	- - - -	0.38 0.52 0.42 0.70	0.45 0.60 0.50 1.0	Vdc

MMBD330T1G, SMMBD330T1G, MMBD770T1G, SMMBD770T1G

TYPICAL CHARACTERISTICS
MMBD330T1G, SMMBD330T1G

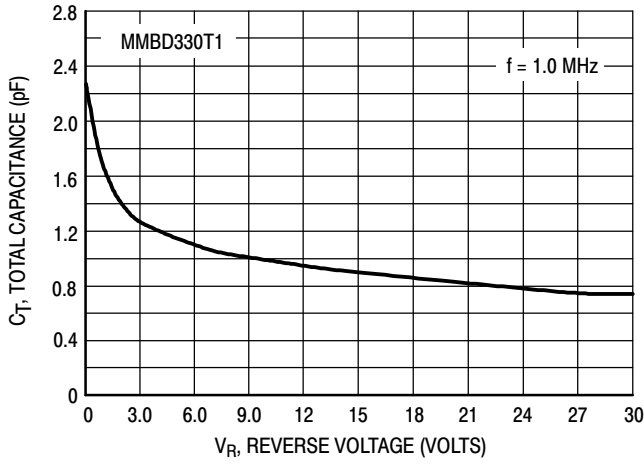


Figure 1. Total Capacitance

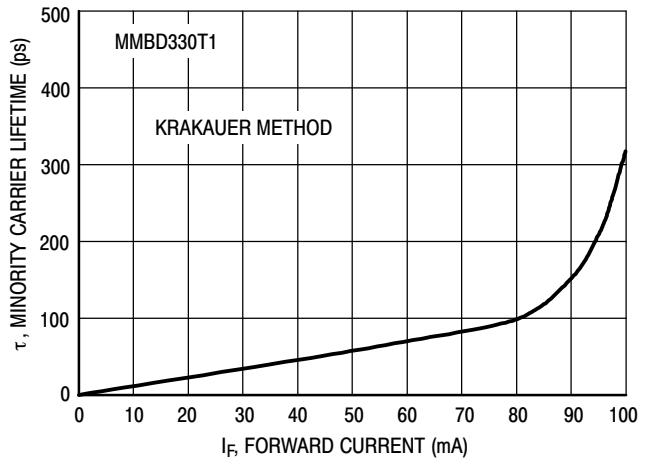


Figure 2. Minority Carrier Lifetime

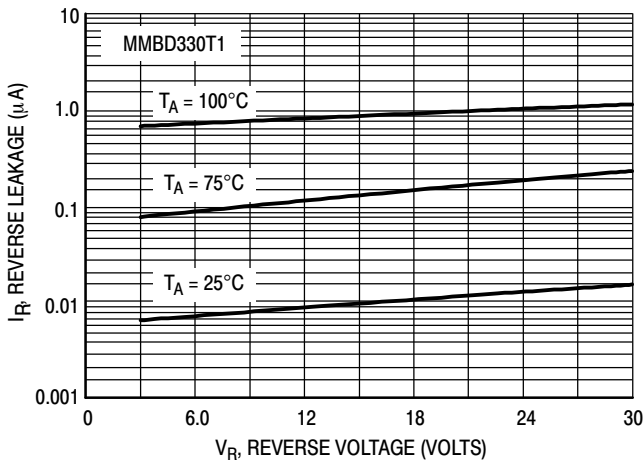


Figure 3. Reverse Leakage

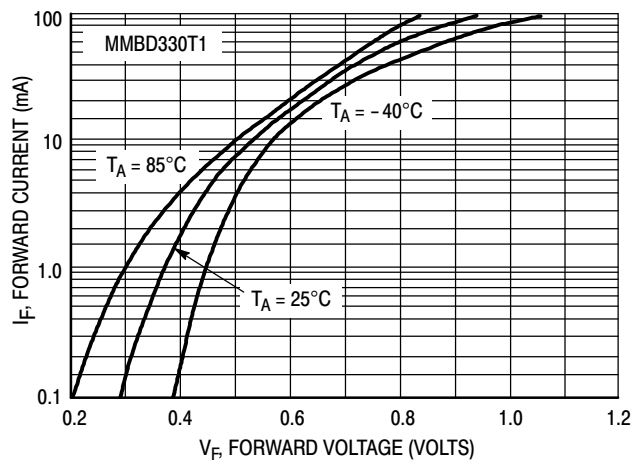


Figure 4. Forward Voltage

MMBD330T1G, SMMBD330T1G, MMBD770T1G, SMMBD770T1G

TYPICAL CHARACTERISTICS
MMBD770T1G, SMMBD770T1G

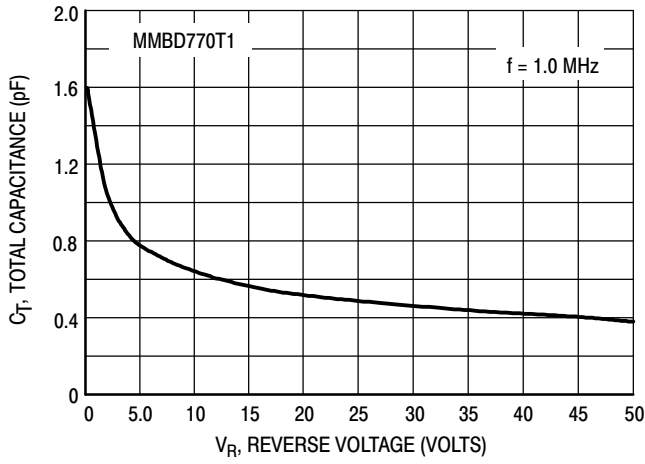


Figure 5. Total Capacitance

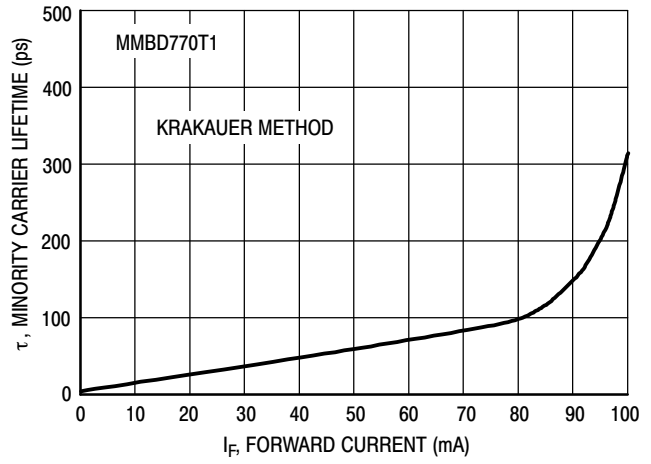


Figure 6. Minority Carrier Lifetime

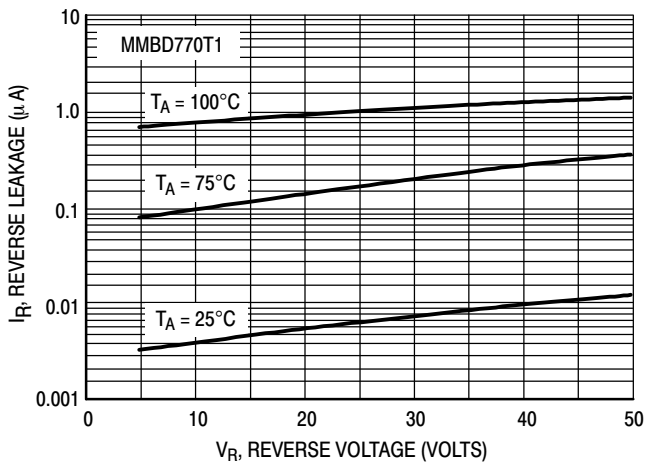


Figure 7. Reverse Leakage

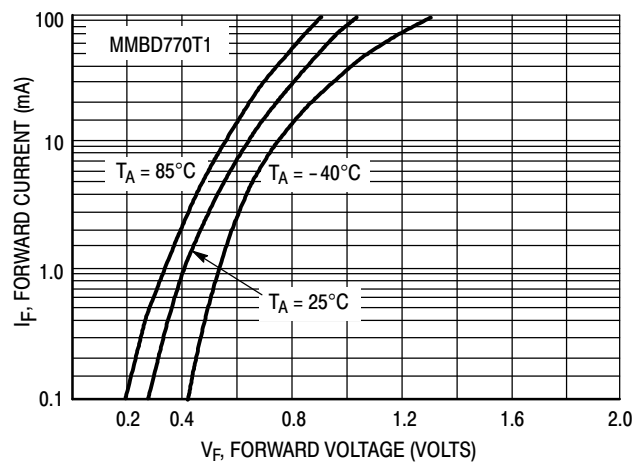
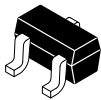


Figure 8. Forward Voltage

MECHANICAL CASE OUTLINE

PACKAGE DIMENSIONS

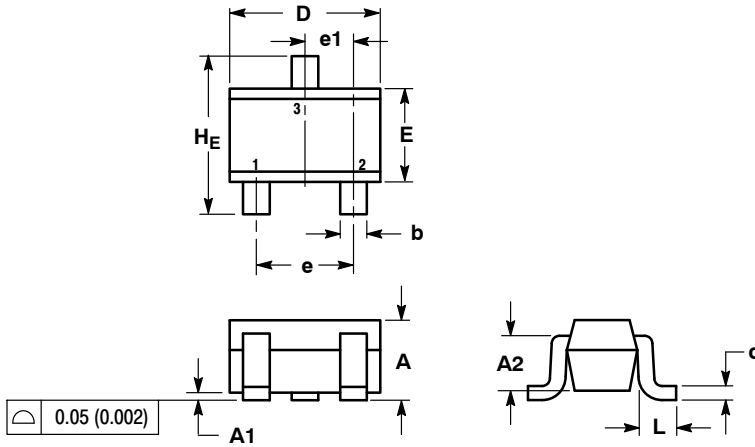
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SCALE 4:1

SC-70 (SOT-323)
CASE 419-04
ISSUE N

DATE 11 NOV 2008

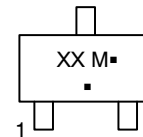


NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI 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 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	0.20	0.38	0.56	0.008	0.015	0.022
HE	2.00	2.10	2.40	0.079	0.083	0.095

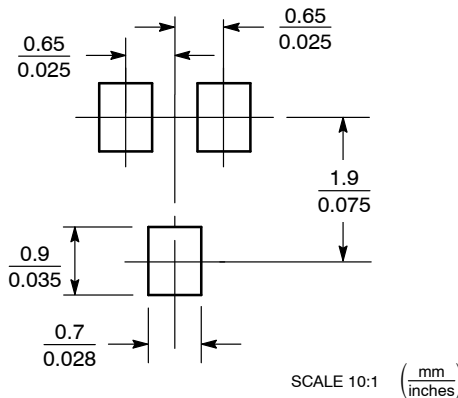
GENERIC MARKING DIAGRAM



- 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.

SOLDERING FOOTPRINT*



SCALE 10:1 (mm/inches)

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

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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