

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	$^\circ\text{C}$

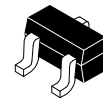
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. 60 Hz Halfsine.



ON Semiconductor®

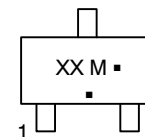
<http://onsemi.com>



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

TYPICAL CHARACTERISTICS
MMBD330T1G, SMMBD330T1G

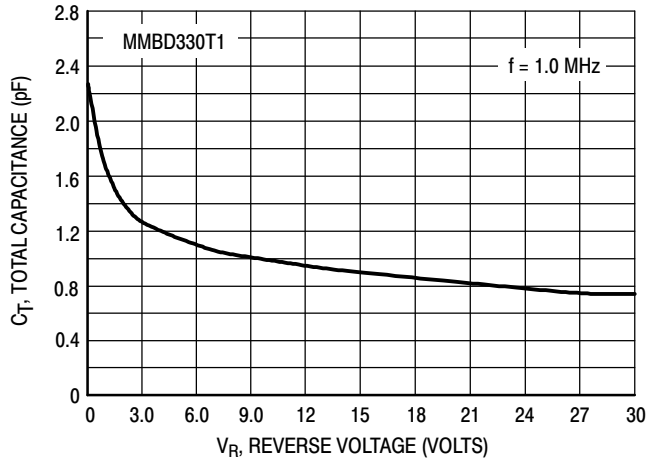


Figure 1. Total Capacitance

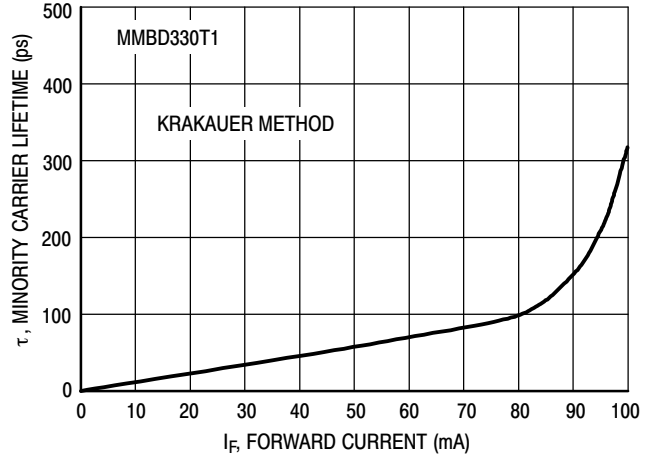


Figure 2. Minority Carrier Lifetime

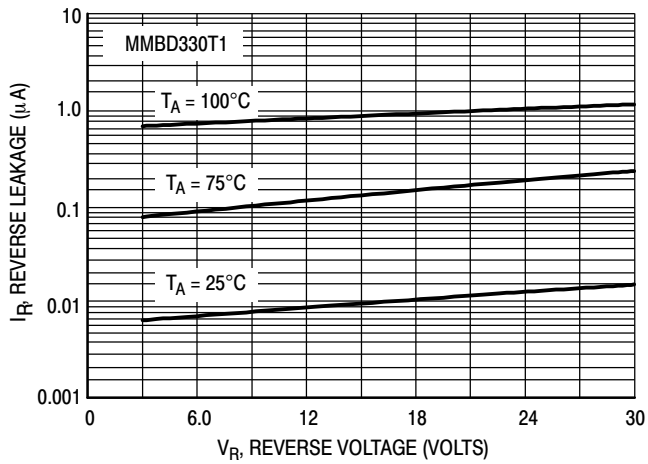


Figure 3. Reverse Leakage

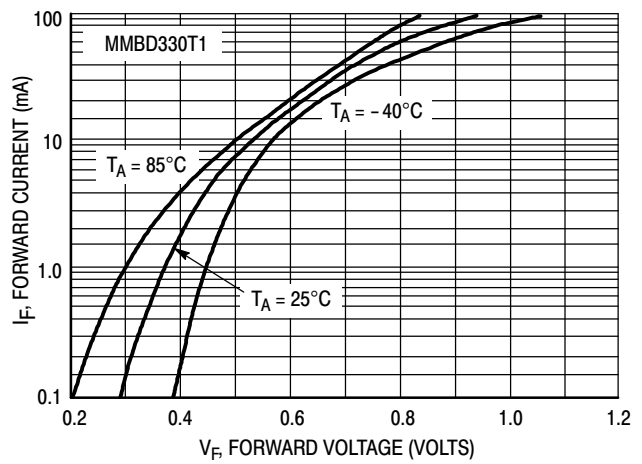


Figure 4. Forward Voltage

TYPICAL CHARACTERISTICS
MMBD770T1G, SMMBD770T1G

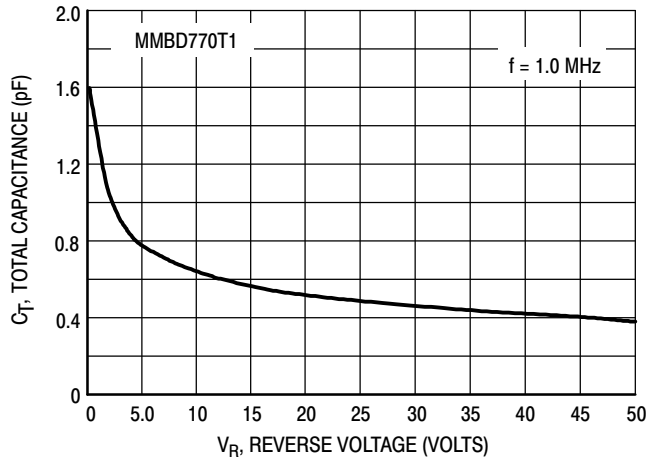


Figure 5. Total Capacitance

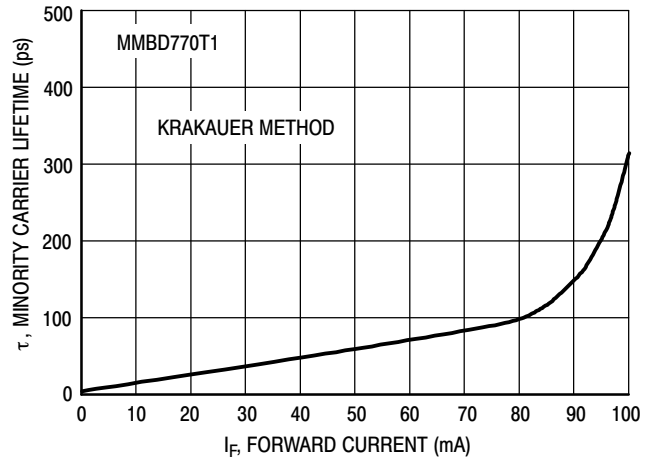


Figure 6. Minority Carrier Lifetime

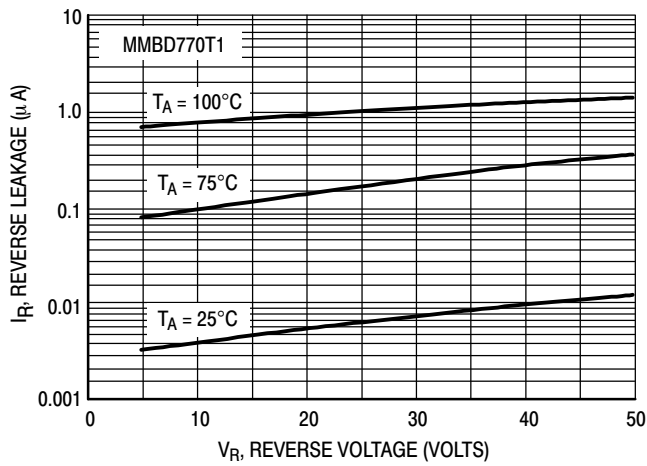


Figure 7. Reverse Leakage

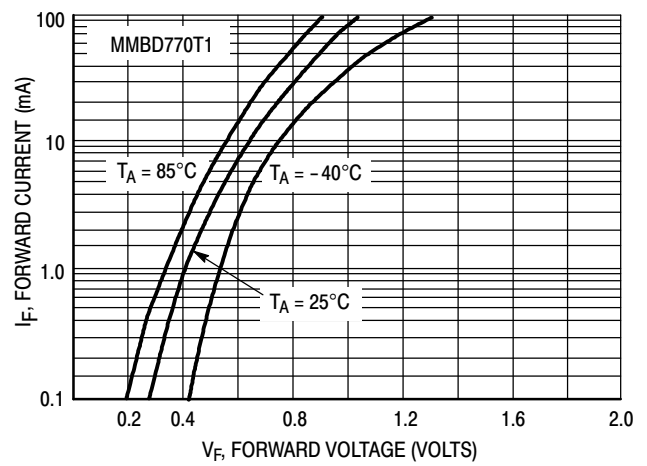
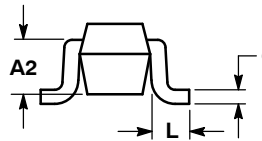
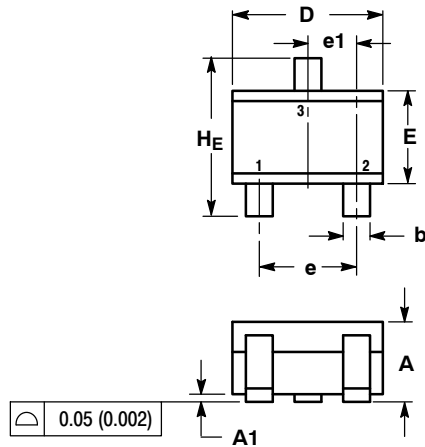


Figure 8. Forward Voltage

MMBD330T1G, SMMBD330T1G, MMBD770T1G, SMMBD770T1G

PACKAGE DIMENSIONS

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



NOTES:

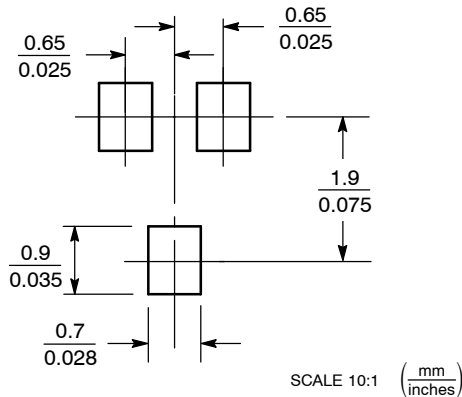
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

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
Hf	2.00	2.10	2.40	0.079	0.083	0.095

STYLE 2:

- PIN 1: ANODE
- N.C.
- CATHODE

SOLDERING FOOTPRINT*



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

ON Semiconductor and  are registered trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:

Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
Phone: 303-675-2175 or 800-344-3860 Toll Free USA/Canada
Fax: 303-675-2176 or 800-344-3867 Toll Free USA/Canada
Email: orderlit@onsemi.com

N. American Technical Support: 800-282-9855 Toll Free
USA/Canada
Europe, Middle East and Africa Technical Support:
Phone: 421 33 790 2910
Japan Customer Focus Center
Phone: 81-3-5817-1050

ON Semiconductor Website: www.onsemi.com

Order Literature: <http://www.onsemi.com/orderlit>

For additional information, please contact your local Sales Representative

MMBD330T1/D