

MMSD301T1G, MMSD701T1G

SOD-123 Schottky Barrier Diodes

The MMSD301T1, and MMSD701T1 devices are spin-offs of our popular MMBD301LT1, and MMBD701LT1 SOT-23 devices. They are designed for high-efficiency UHF and VHF detector applications. Readily available to many other fast switching RF and digital applications.

Features

- Extremely Low Minority Carrier Lifetime
- Very Low Capacitance
- Low Reverse Leakage
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

MAXIMUM RATINGS

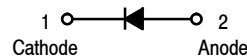
Rating	Symbol	Value	Unit
Reverse Voltage MMSD301T1 MMSD701T1	V_R	30 70	Vdc
Forward Current (DC) Continuous	I_F	200	mA
Forward Power Dissipation $T_A = 25^\circ\text{C}$	P_F	225	mW
Junction Temperature	T_J	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^\circ\text{C}$

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.



ON Semiconductor®

<http://onsemi.com>



SOD-123
CASE 425
STYLE 1

MARKING DIAGRAM



- xx = Specific Device Code
- XT = MMSD301T1
- XH = MMSD701T1
- M = Date Code
- = Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping†
MMSD301T1G	SOD-123 (Pb-Free)	3000 Tape & Reel
MMSD701T1G	SOD-123 (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.

MMSD301T1G, MMSD701T1G

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

Characteristic		Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage (I _R = 10 μA)	MMSD301T1 MMSD701T1	V _{(BR)R}	30 70	- -	- -	V
Diode Capacitance (V _R = 0 V, f = 1.0 MHz)	MMSD301T1 MMSD701T1	C _T	- -	0.9 0.5	1.5 1.0	pF
Total Capacitance (V _R = 15 V, f = 1.0 MHz) (V _R = 20 V, f = 1.0 MHz)	MMSD301T1 MMSD701T1	C _T	- -	0.9 0.5	1.5 1.0	pF
Reverse Leakage (V _R = 25 V) (V _R = 35 V)	MMSD301T1 MMSD701T1	I _R	- -	13 9.0	200 200	nAdc nAdc
Forward Voltage (I _F = 1.0 mAdc) (I _F = 10 mA) (I _F = 1.0 mAdc) (I _F = 10 mA)	MMSD301T1 MMSD701T1	V _F	- - - -	0.38 0.52 0.42 0.7	0.45 0.6 0.5 1.0	Vdc

MMSD301T1G, MMSD701T1G

TYPICAL CHARACTERISTICS MMSD301T1

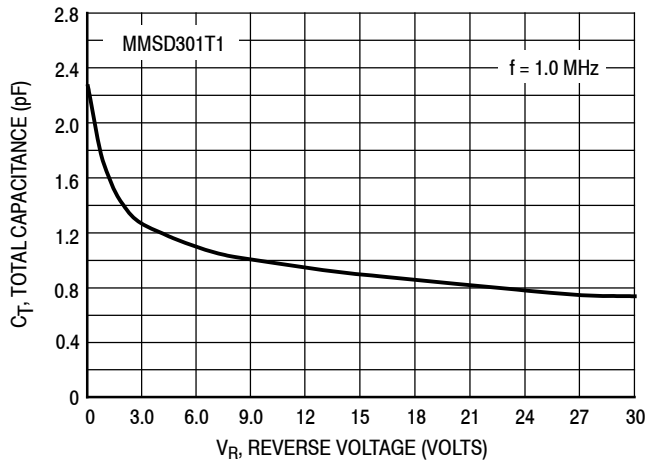


Figure 1. Total Capacitance

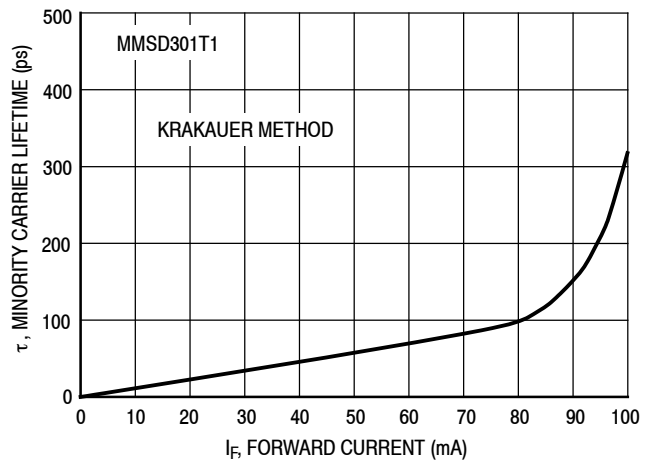


Figure 2. Minority Carrier Lifetime

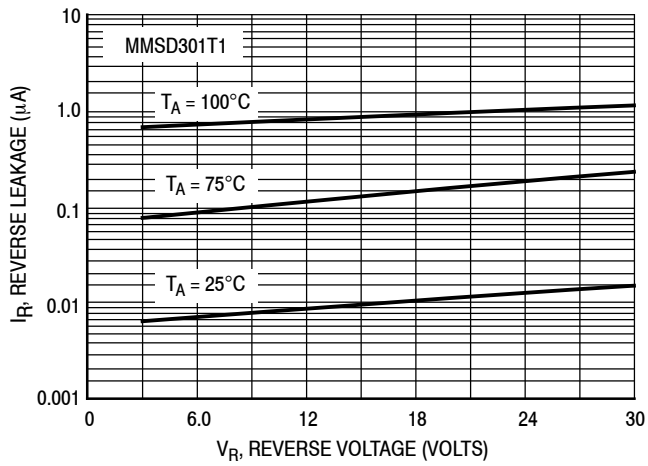


Figure 3. Reverse Leakage

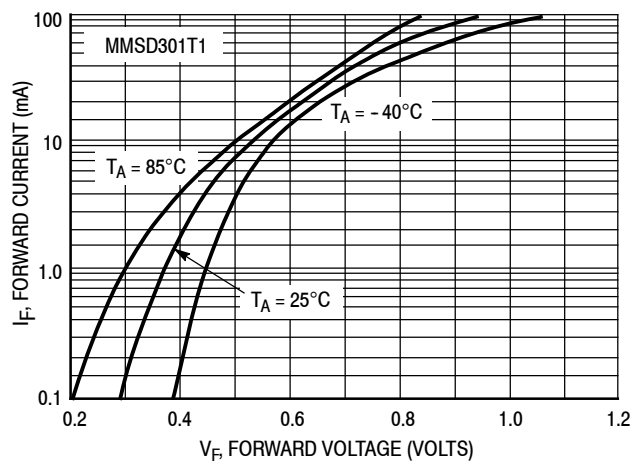


Figure 4. Forward Voltage

MMSD301T1G, MMSD701T1G

TYPICAL CHARACTERISTICS MMSD701T1

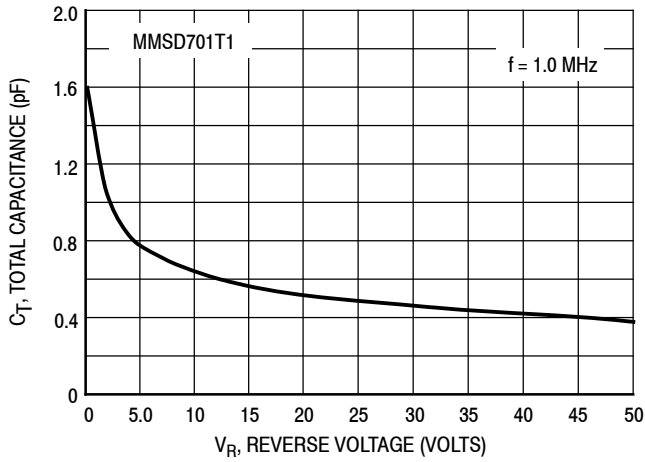


Figure 5. Total Capacitance

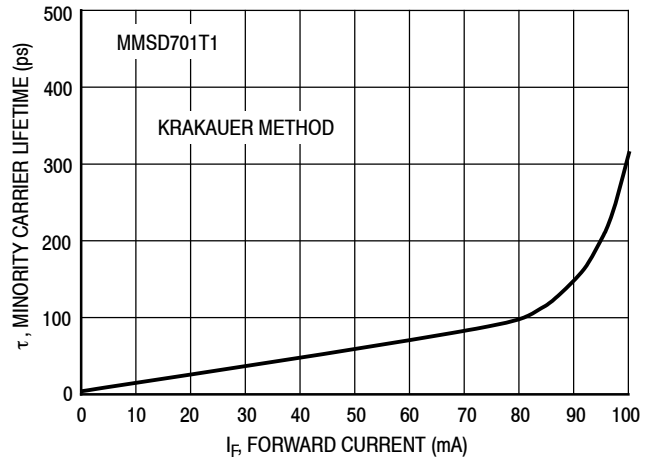


Figure 6. Minority Carrier Lifetime

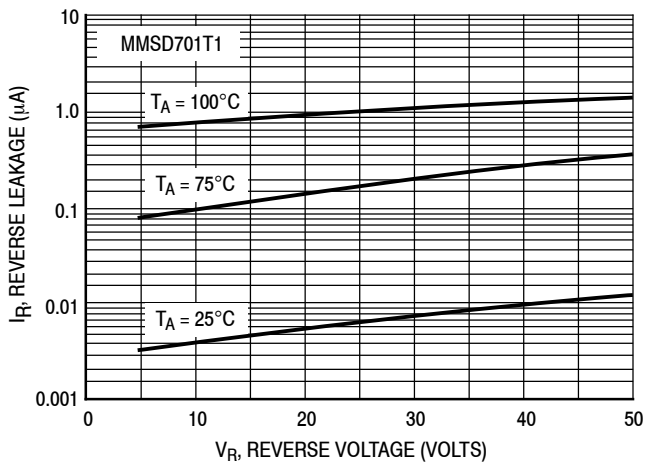


Figure 7. Reverse Leakage

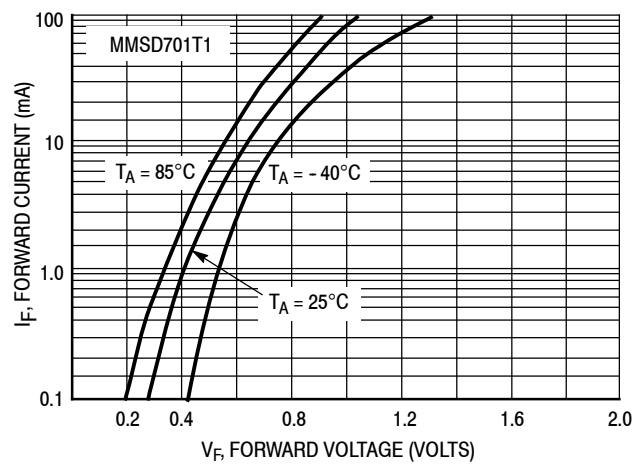
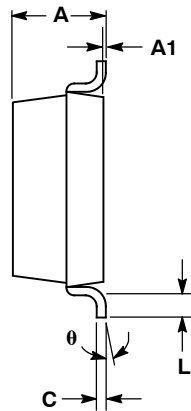
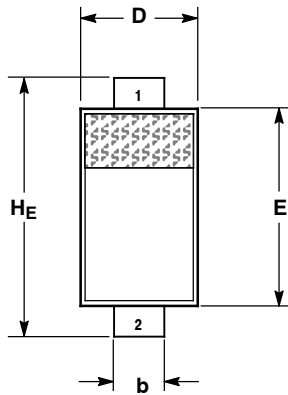


Figure 8. Forward Voltage

MMSD301T1G, MMSD701T1G

PACKAGE DIMENSIONS

SOD-123
CASE 425-04
ISSUE G

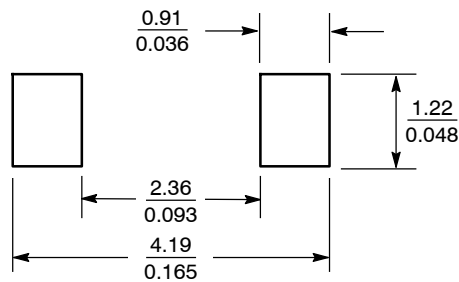


- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.94	1.17	1.35	0.037	0.046	0.053
A1	0.00	0.05	0.10	0.000	0.002	0.004
b	0.51	0.61	0.71	0.020	0.024	0.028
c	---	---	0.15	---	---	0.006
D	1.40	1.60	1.80	0.055	0.063	0.071
E	2.54	2.69	2.84	0.100	0.106	0.112
HE	3.56	3.68	3.86	0.140	0.145	0.152
L	0.25	---	---	0.010	---	---
theta	0°	---	10°	0°	---	10°


- STYLE 1:
PIN 1. CATHODE
2. ANODE

SOLDERING FOOTPRINT*



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

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

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: 81-3-5773-3850

ON Semiconductor Website: www.onsemi.com

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

For additional information, please contact your local Sales Representative

MMSD301T1/D