

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

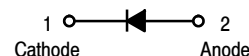
Rating	Symbol	Value	Unit
Reverse Voltage MMSD301T1 MMSD701T1	V_R	30 70	Vdc
Forward Current (DC) Continuous	I_F	200	mA
Forward Power Dissipation $T_A = 25^\circ\text{C}$	P_F	225	mW
Junction Temperature	T_J	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^\circ\text{C}$

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.



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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

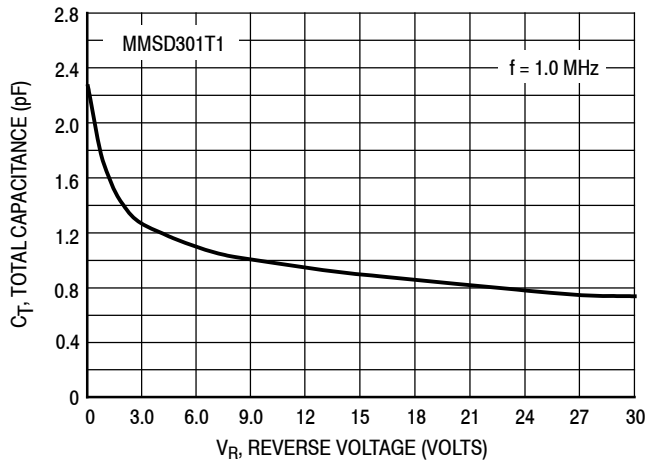


Figure 1. Total Capacitance

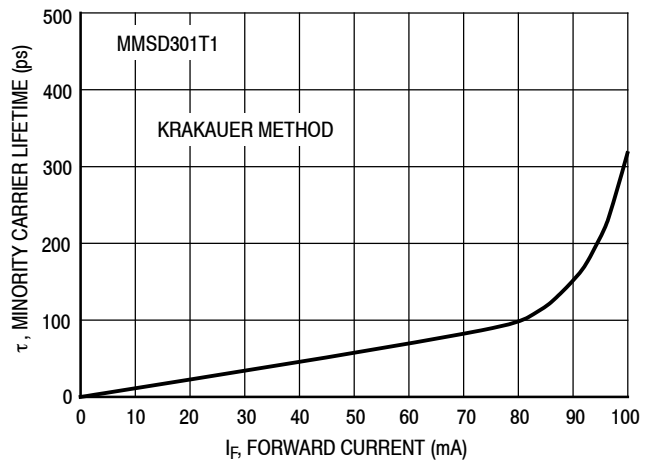


Figure 2. Minority Carrier Lifetime

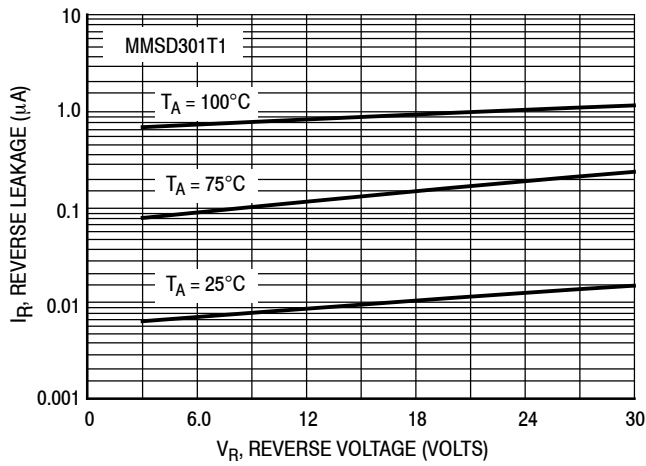


Figure 3. Reverse Leakage

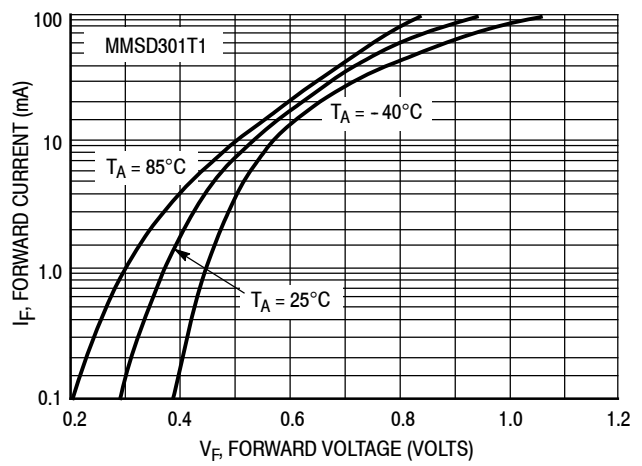


Figure 4. Forward Voltage

MMSD301T1G, MMSD701T1G

TYPICAL CHARACTERISTICS MMSD701T1

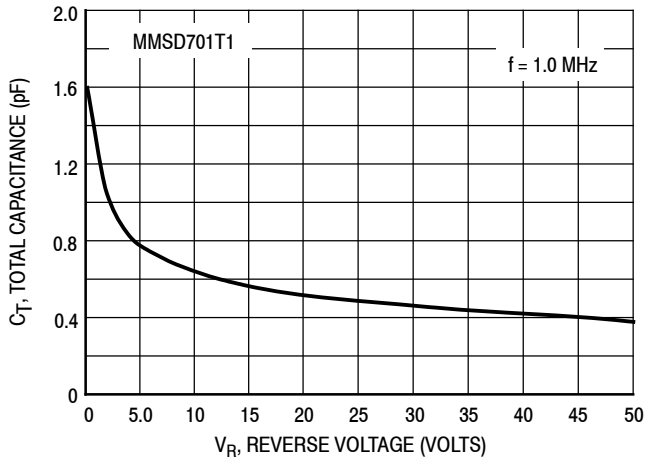


Figure 5. Total Capacitance

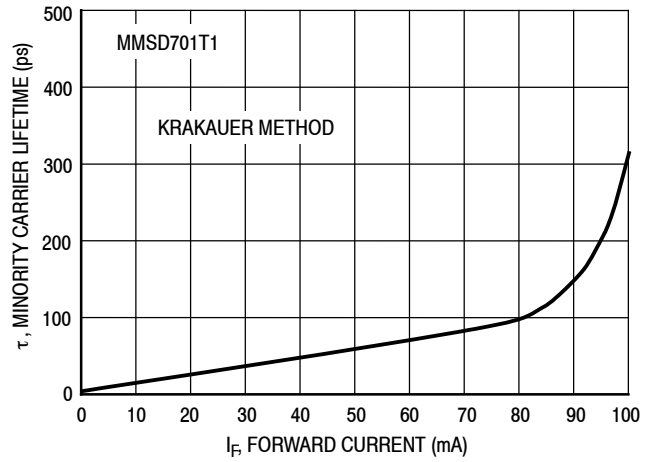


Figure 6. Minority Carrier Lifetime

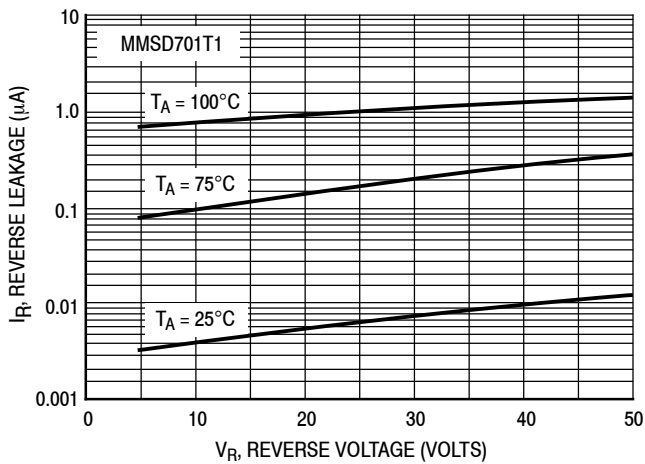


Figure 7. Reverse Leakage

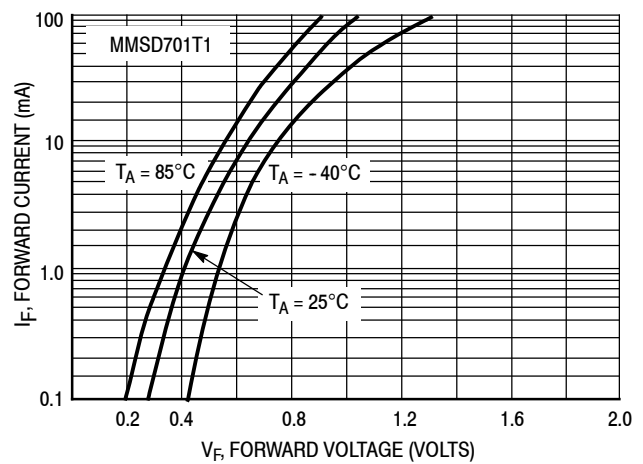
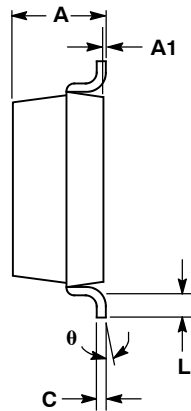
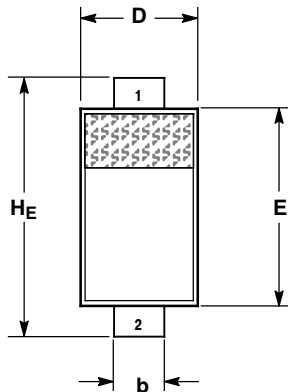


Figure 8. Forward Voltage

MMSD301T1G, MMSD701T1G

PACKAGE DIMENSIONS

SOD-123
CASE 425-04
ISSUE G

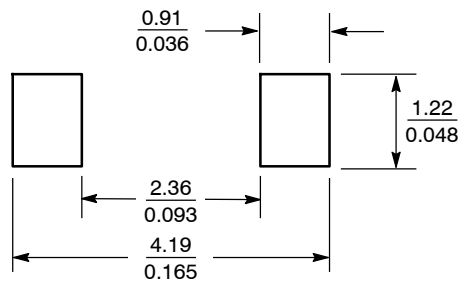


- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

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.

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