

MMSD301T1

Preferred Device

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
- Pb-Free Packages are Available

MAXIMUM RATINGS

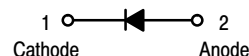
Rating	Symbol	Value	Unit
Reverse Voltage	MMSD301T1 MMSD701T1	V_R 30 70	Vdc
Forward Current (DC) Continuous	I_F	200	mA
Forward Power Dissipation $T_A = 25^\circ\text{C}$	P_F	225	mW
Junction Temperature	T_J	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^\circ\text{C}$

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.



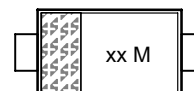
ON Semiconductor®

<http://onsemi.com>



SOD-123
CASE 425-04
STYLE 1

MARKING DIAGRAM



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

ORDERING INFORMATION

Device	Package	Shipping†
MMSD301T1	SOD-123	3000 Tape & Reel
MMSD301T1G	SOD-123 (Pb-Free)	3000 Tape & Reel
MMSD701T1	SOD-123	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.

Preferred devices are recommended choices for future use and best overall value.

MMSD301T1

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, f = 1.0 MHz)	MMSD301T1 MMSD701T1	C _T	- -	0.9 0.5	1.5 1.0	pF
Total Capacitance (V _R = 15 Volts, f = 1.0 MHz) (V _R = 20 Volts, 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

MMSD301T1

TYPICAL CHARACTERISTICS MMSD301T1

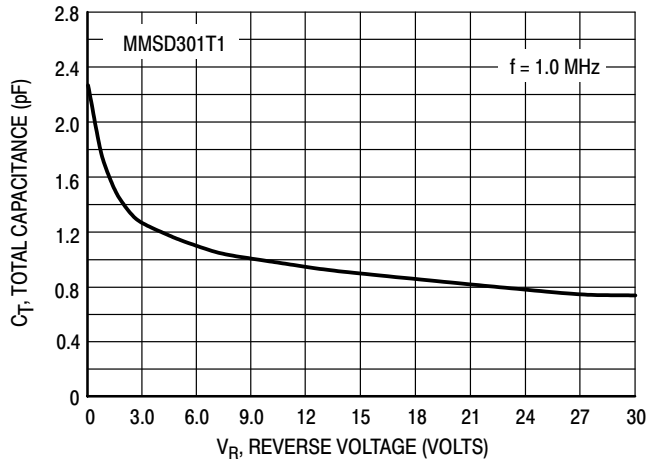


Figure 1. Total Capacitance

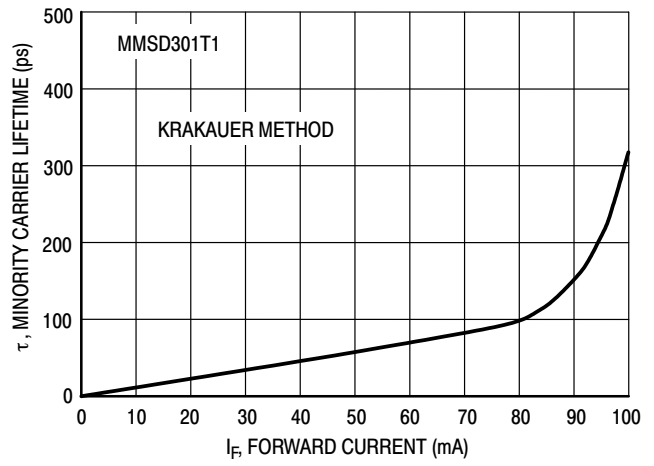


Figure 2. Minority Carrier Lifetime

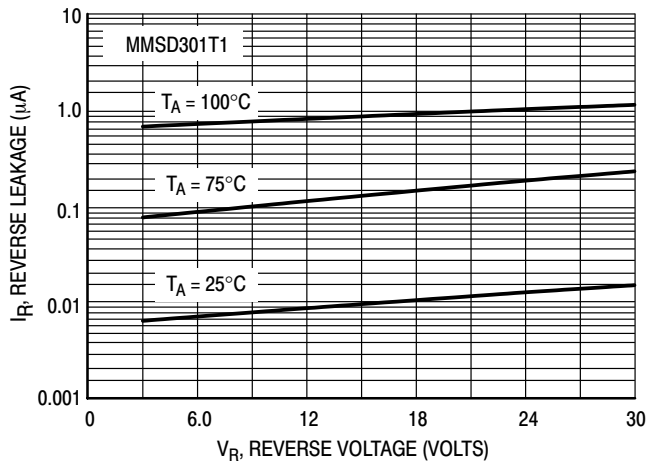


Figure 3. Reverse Leakage

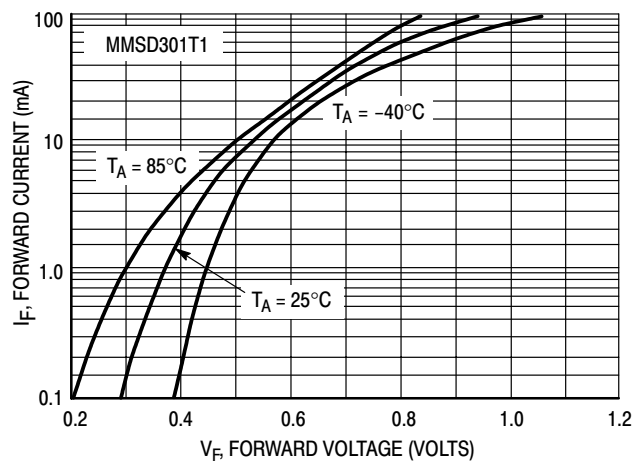


Figure 4. Forward Voltage

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TYPICAL CHARACTERISTICS MMSD701T1

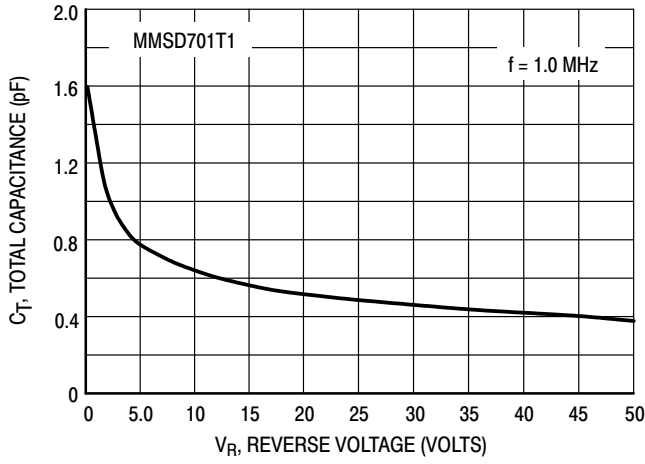


Figure 5. Total Capacitance

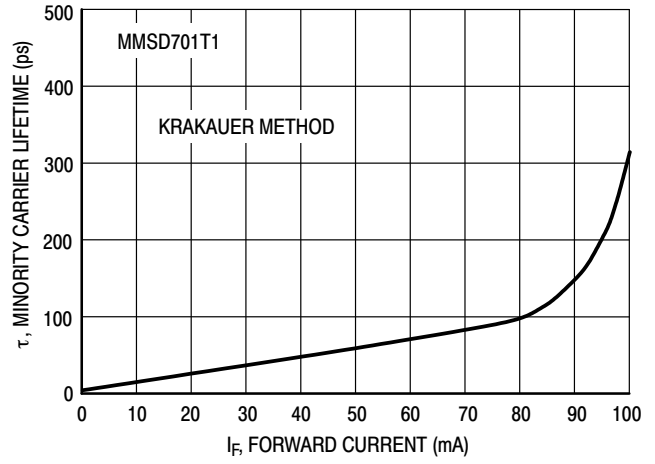


Figure 6. Minority Carrier Lifetime

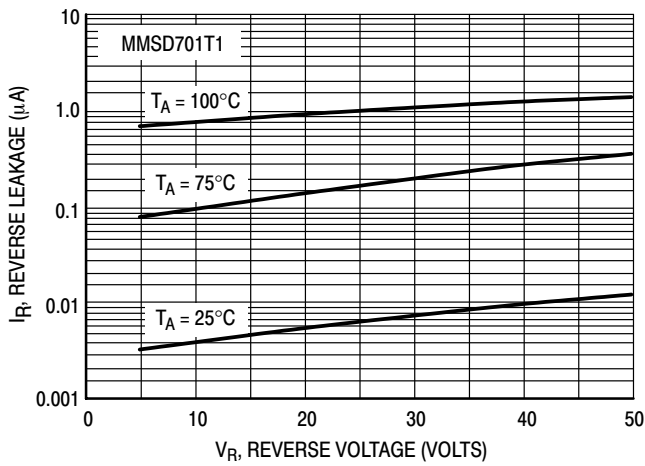


Figure 7. Reverse Leakage

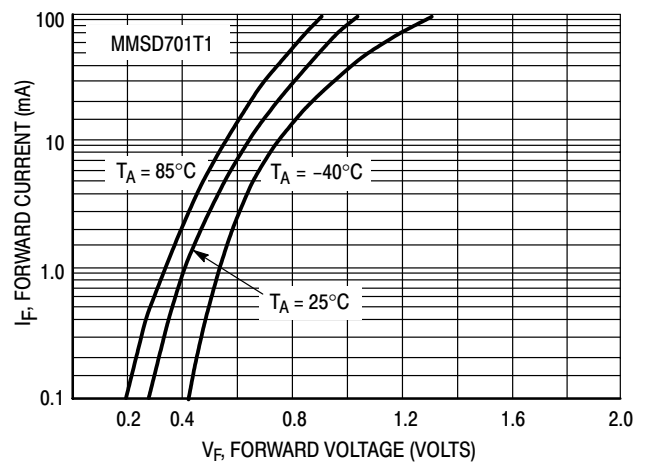
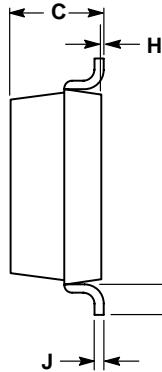
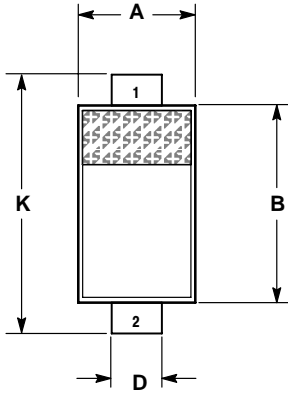


Figure 8. Forward Voltage

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PACKAGE DIMENSIONS

SOD-123
CASE 425-04
ISSUE C

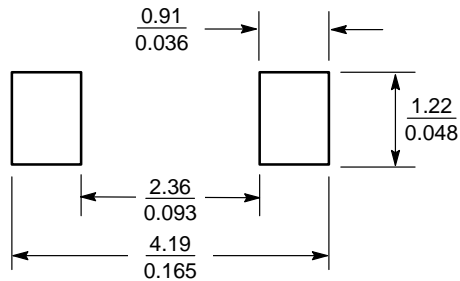


- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.055	0.071	1.40	1.80
B	0.100	0.112	2.55	2.85
C	0.037	0.053	0.95	1.35
D	0.020	0.028	0.50	0.70
E	0.01	---	0.25	---
H	0.000	0.004	0.00	0.10
J	---	0.006	---	0.15
K	0.140	0.152	3.55	3.85

STYLE 1:
PIN 1. CATHODE
2. ANODE

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.

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