MBD701, MMBD701LT1

Preferred Device

Silicon Hot-Carrier Diodes

Schottky Barrier Diodes

These devices are designed primarily for high–efficiency UHF and VHF detector applications. They are readily adaptable to many other fast switching RF and digital applications. They are supplied in an inexpensive plastic package for low–cost, high–volume consumer and industrial/commercial requirements. They are also available in a Surface Mount package.

Features

- Extremely Low Minority Carrier Lifetime 15 ps (Typ)
- Very Low Capacitance $-1.0 \text{ pF} @ \text{V}_{\text{R}} = 20 \text{ V}$
- High Reverse Voltage to 70 V
- Low Reverse Leakage 200 nA (Max)
- Pb–Free Packages are Available

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Reverse Voltage	V _R	70	V
Forward Power Dissipation @ T _A = 25°C MBD7 MMBD701	LT .	280 200	mW
Derate above 25°C MBD7 MMBD701	• ·	2.8 2.0	mW/°C
Operating Junction Temperature Range	Τ _J	-55 to +125	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C

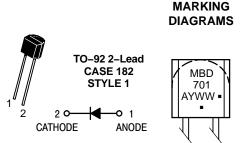
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

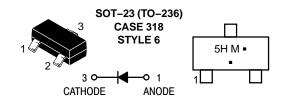
Characteristic	Symbol	Min	Тур	Max	Unit
Reverse Breakdown Voltage (I _R = 10 μAdc)	V _{(BR)R}	70	-	Ι	V
Total Capacitance (V _R = 20 V, f = 1.0 MHz) Figure 1	CT	-	0.5	1.0	pF
Reverse Leakage (V _R = 35 V) Figure 3	I _R	-	9.0	200	nAdc
Forward Voltage (I _F = 1.0 mAdc) Figure 4	V _F	-	0.42	0.5	Vdc
Forward Voltage (I _F = 10 mAdc) Figure 4	V _F	-	0.7	1.0	Vdc

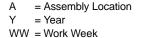


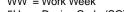
ON Semiconductor®

http://onsemi.com









- 5H = Device Code (SOT-23)
- M = Date Code*
- = Pb–Free Package

(Note: Microdot may be in either location) *Date Code orientation and/or overbar may vary depending upon manufacturing location.

ORDERING INFORMATION

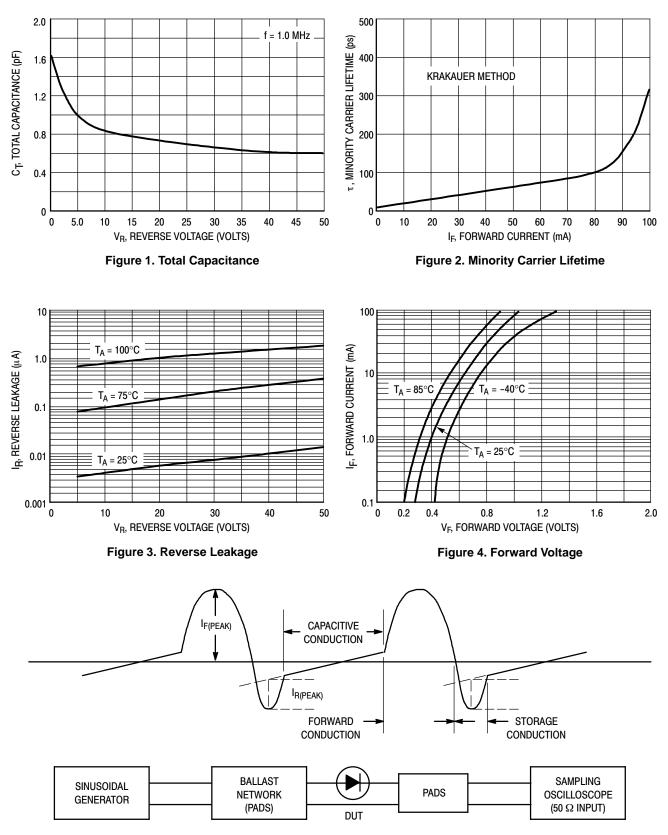
Device	Package	Shipping [†]				
MBD701	TO-92	1,000 Units / Box				
MBD701G	TO-92 (Pb-Free)	1,000 Units / Box				
MMBD701LT1	SOT-23	3,000 / Tape & Reel				
MMBD701LT1G	SOT-23 (Pb-Free)	3,000 / Tape & Reel				
MMBD701LT3	SOT-23	10,000/Tape & Reel				
MMBD701LT3G	SOT-23 (Pb-Free)	10,000/Tape & Reel				

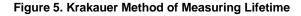
+For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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

MBD701, MMBD701LT1

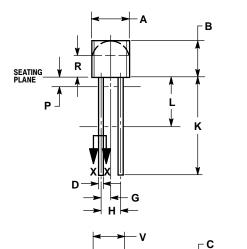






PACKAGE DIMENSIONS

TO-92 (TO-226AC) CASE 182-06 **ISSUE L**



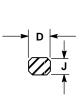
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A



SECTION X-X

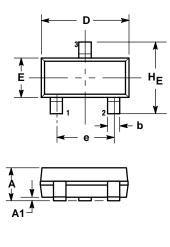
- NOTES: 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982. 2. CONTROLLING DIMENSION: INCH. 3. CONTOUR OF PACKAGE BEYOND ZONE R IS UNCONTROLLED. 4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

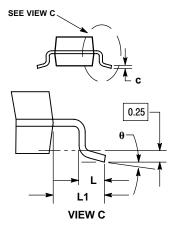
	INC	HES	MILLIMETERS		
DIM	MIN	MAX	MIN	MAX	
Α	0.175	0.205	4.45	5.21	
В	0.170	0.210	4.32	5.33	
С	0.125	0.165	3.18	4.19	
D	0.016	0.021	0.407	0.533	
G	0.050 BSC		1.27 BSC		
Η	0.100 BSC		2.54 BSC		
ſ	0.014	0.016	0.36 0.4		
Κ	0.500		12.70		
L	0.250		6.35		
Ν	0.080	0.105	2.03 2.6		
Ρ		0.050	1.2		
R	0.115		2.93		
٧	0.135		3.43		

STYLE 1: PIN 1. ANODE 2. CATHODE

PACKAGE DIMENSIONS

SOT-23 (TO-236) CASE 318-08 **ISSUE AN**





NOTES

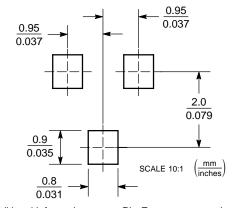
- DIMENSIONING AND TOLERANCING PER ANSI 1. Y14.5M, 1982. CONTROLLING DIMENSION: INCH
- 2. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD 3.
- THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL. 318-01 THRU -07 AND -09 OBSOLETE, NEW STANDARD 318-08. 4.

	MILLIMETERS			INCHES			
DIM	MIN	NOM	MAX	MIN	NOM	MAX	
Α	0.89	1.00	1.11	0.035	0.040	0.044	
A1	0.01	0.06	0.10	0.001	0.002	0.004	
b	0.37	0.44	0.50	0.015	0.018	0.020	
С	0.09	0.13	0.18	0.003	0.005	0.007	
D	2.80	2.90	3.04	0.110	0.114	0.120	
E	1.20	1.30	1.40	0.047	0.051	0.055	
е	1.78	1.90	2.04	0.070	0.075	0.081	
L	0.10	0.20	0.30	0.004	0.008	0.012	
L1	0.35	0.54	0.69	0.014	0.021	0.029	
HE	2.10	2.40	2.64	0.083	0.094	0.104	

STYLE 6:

PIN 1. BASE 2. EMITTER

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.

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