

BAT54AWT1

Preferred Device

Schottky Barrier Diodes

These Schottky barrier diodes are designed for high speed switching applications, circuit protection, and voltage clamping. Extremely low forward voltage reduces conduction loss. Miniature surface mount package is excellent for hand held and portable applications where space is limited.

Features

- Extremely Fast Switching Speed
- Low Forward Voltage – 0.35 V (Typ) @ $I_F = 10$ mAdc
- Pb-Free Package is Available

MAXIMUM RATINGS ($T_J = 125^\circ\text{C}$ unless otherwise noted)

Rating	Symbol	Value	Unit
Reverse Voltage	V_R	30	Volts
Forward Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_F	200 1.6	mW mW/ $^\circ\text{C}$
Forward Current (DC)	I_F	200 Max	mA
Junction Temperature	T_J	125 Max	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^\circ\text{C}$

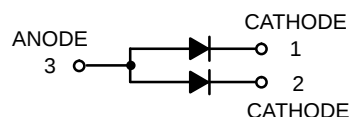
Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.



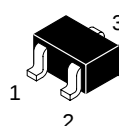
ON Semiconductor®

<http://onsemi.com>

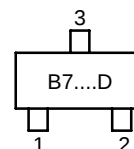
30 VOLTS SCHOTTKY BARRIER DETECTOR AND SWITCHING DIODES



MARKING DIAGRAM



SOT-323
CASE 419



B7 = Specific Device Code
D = Date Code

ORDERING INFORMATION

Device	Package	Shipping†
BAT54AWT1	SOT-323	3000/Tape & Reel
BAT54AWT1G	SOT-323 (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.

BAT54AWT1

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted) (EACH DIODE)

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage ($I_R = 10\ \mu\text{A}$)	$V_{(BR)R}$	30	–	–	V
Total Capacitance ($V_R = 1.0\ \text{V}$, $f = 1.0\ \text{MHz}$)	C_T	–	7.6	10	pF
Reverse Leakage ($V_R = 25\ \text{V}$)	I_R	–	0.5	2.0	μA_{dc}
Forward Voltage ($I_F = 0.1\ \text{mA}_{dc}$)	V_F	–	0.22	0.24	Vdc
Forward Voltage ($I_F = 30\ \text{mA}_{dc}$)	V_F	–	0.41	0.5	Vdc
Forward Voltage ($I_F = 100\ \text{mA}_{dc}$)	V_F	–	0.52	0.8	Vdc
Reverse Recovery Time ($I_F = I_R = 10\ \text{mA}_{dc}$, $I_{R(REC)} = 1.0\ \text{mA}_{dc}$, Figure 1)	t_{rr}	–	–	5.0	ns
Forward Voltage ($I_F = 1.0\ \text{mA}_{dc}$)	V_F	–	0.29	0.32	Vdc
Forward Voltage ($I_F = 10\ \text{mA}_{dc}$)	V_F	–	0.35	0.40	Vdc
Forward Current (DC)	I_F	–	–	200	mA_{dc}
Repetitive Peak Forward Current	I_{FRM}	–	–	300	mA_{dc}
Non-Repetitive Peak Forward Current ($t < 1.0\ \text{s}$)	I_{FSM}	–	–	600	mA_{dc}

BAT54AWT1

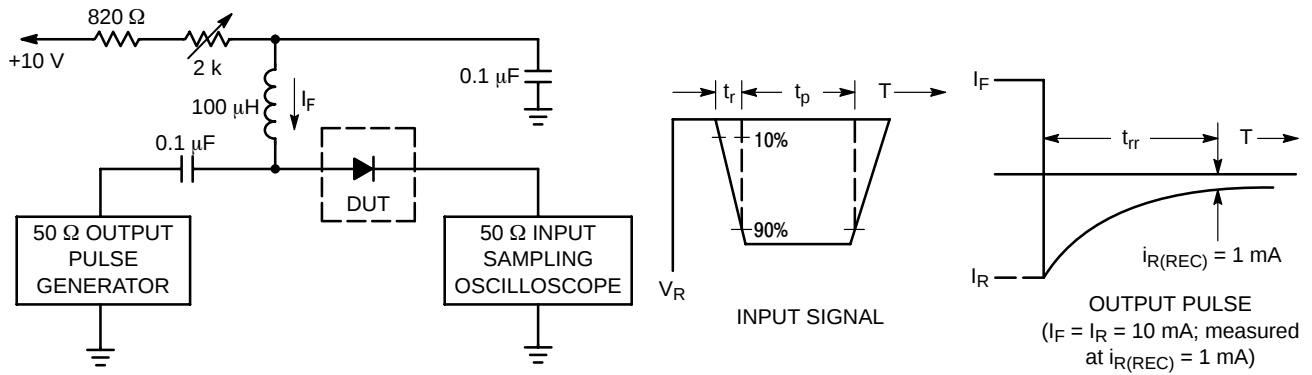


Figure 1. Recovery Time Equivalent Test Circuit

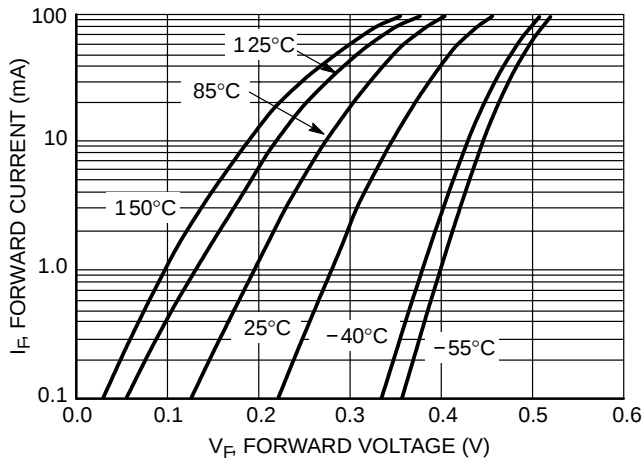


Figure 2. Forward Voltage

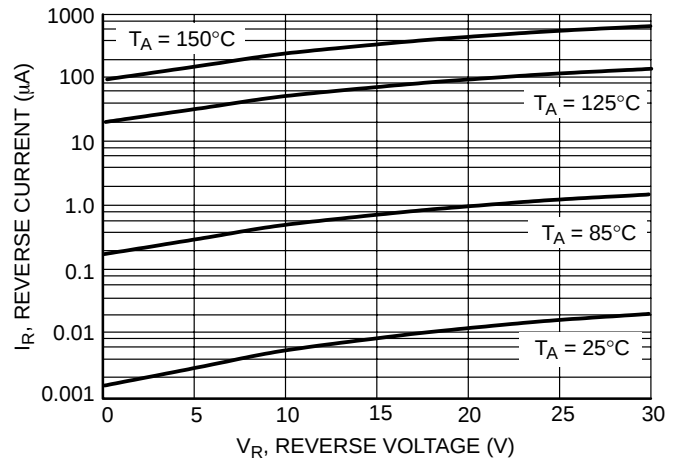


Figure 3. Leakage Current

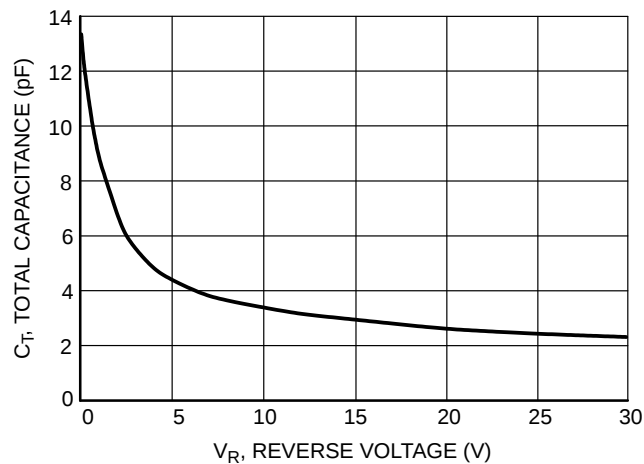
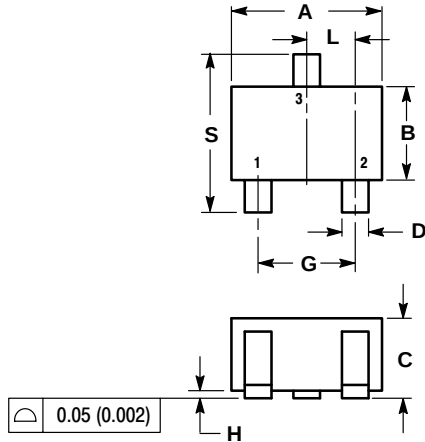


Figure 4. Total Capacitance

BAT54AWT1

PACKAGE DIMENSIONS

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

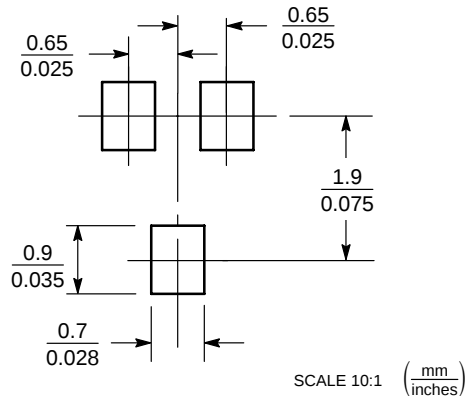


NOTES:

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

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.071	0.087	1.80	2.20
B	0.045	0.053	1.15	1.35
C	0.032	0.040	0.80	1.00
D	0.012	0.016	0.30	0.40
G	0.047	0.055	1.20	1.40
H	0.000	0.004	0.00	0.10
J	0.004	0.010	0.10	0.25
K	0.017 REF		0.425 REF	
L	0.026 BSC		0.650 BSC	
N	0.028 REF		0.700 REF	
S	0.079	0.095	2.00	2.40

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
Japan: ON Semiconductor, Japan Customer Focus Center
2-9-1 Kamimeguro, Meguro-ku, Tokyo, Japan 153-0051
Phone: 81-3-5773-3850

ON Semiconductor Website: <http://onsemi.com>

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

For additional information, please contact your local Sales Representative.