BAT54AWT1G, SBAT54AWT1G

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) @ $I_F = 10 \text{ mAdc}$
- AEC Qualified and PPAP Capable
- S Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements
- These Devices are Pb–Free, Halogen Free/BFR Free and are RoHS Compliant*

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

Rating	Symbol	Value	Unit
Reverse Voltage	V _R	30	V
Forward Power Dissipation @ T _A = 25°C Derate above 25°C	P _F	200 1.6	mW mW/°C
Forward Current (DC)	l _F	200 Max	mA
Non-Repetitive Peak Forward Current $t_p < 10 \text{ msec}$	I _{FSM}	600	mA
Repetitive Peak Forward Current Pulse Wave = 1 sec, Duty Cycle = 66%	I _{FRM}	300	mA
Junction Temperature	TJ	-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.



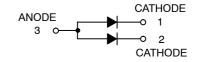
ON Semiconductor®

http://onsemi.com

30 VOLT SCHOTTKY BARRIER DETECTOR AND SWITCHING DIODES



SOT-323 CASE 419 STYLE 4



MARKING DIAGRAM



B7 = Device Code

M = Date Code*

Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping [†]
BAT54AWT1G	SOT-323 (Pb-Free)	3,000/Tape & Reel
SBAT54AWT1G	SOT-323 (Pb-Free)	3,000/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.

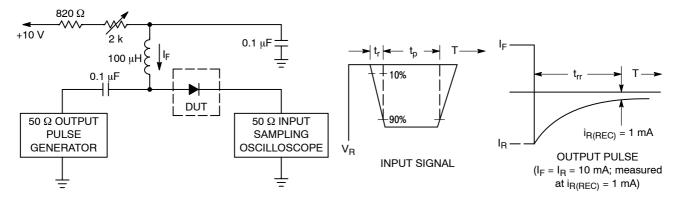
^{*}Date Code orientation may vary depending upon manufacturing location.

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

BAT54AWT1G, SBAT54AWT1G

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

Characteristic	Symbol	Min	Тур	Max	Unit
Reverse Breakdown Voltage (I _R = 10 μA)	V _{(BR)R}	30	-	-	V
Total Capacitance (V _R = 1.0 V, f = 1.0 MHz)	C _T	-	7.6	10	pF
Reverse Leakage (V _R = 25 V)	I _R	-	0.5	2.0	μAdc
Forward Voltage (I _F = 0.1 mAdc)	V _F	-	0.22	0.24	Vdc
Forward Voltage (I _F = 30 mAdc)	V _F	-	0.41	0.5	Vdc
Forward Voltage (I _F = 100 mAdc)	V _F	-	0.52	0.8	Vdc
Reverse Recovery Time (I _F = I _R = 10 mAdc, I _{R(REC)} = 1.0 mAdc, Figure 1)	t _{rr}	-	-	5.0	ns
Forward Voltage (I _F = 1.0 mAdc)	V _F	-	0.29	0.32	Vdc
Forward Voltage (I _F = 10 mAdc)	V _F	-	0.35	0.40	Vdc



Notes: 1. A 2.0 k Ω variable resistor adjusted for a Forward Current (IF) of 10 mA.

- 2. Input pulse is adjusted so $I_{R(peak)}$ is equal to 10 mA.
- 3. t_p » t_{rr}

Figure 1. Recovery Time Equivalent Test Circuit

BAT54AWT1G, SBAT54AWT1G

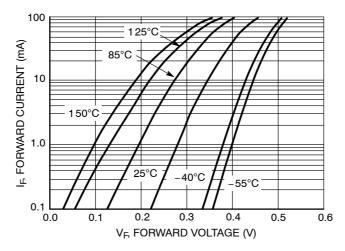


Figure 2. Forward Voltage

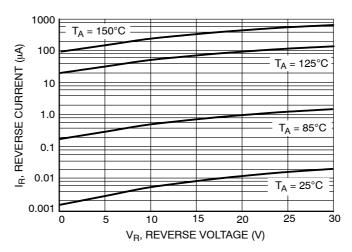


Figure 3. Leakage Current

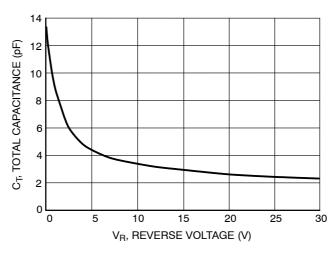
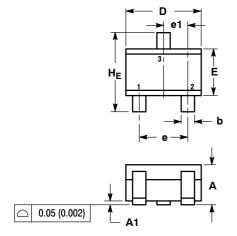


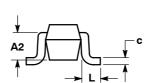
Figure 4. Total Capacitance

BAT54AWT1G, SBAT54AWT1G

PACKAGE DIMENSIONS

SOT-323 (SC-70) CASE 419-04 ISSUF N



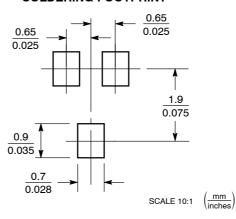


- 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982. 2. CONTROLLING DIMENSION: INCH.

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
Α	0.80	0.90	1.00	0.032	0.035	0.040
A1	0.00	0.05	0.10	0.000	0.002	0.004
A2		0.70 REF			0.028 REF	
b	0.30	0.35	0.40	0.012	0.014	0.016
С	0.10	0.18	0.25	0.004	0.007	0.010
D	1.80	2.10	2.20	0.071	0.083	0.087
E	1.15	1.24	1.35	0.045	0.049	0.053
е	1.20	1.30	1.40	0.047	0.051	0.055
e1	0.65 BSC			0.026 BSC		
L	0.20	0.38	0.56	0.008	0.015	0.022
He	2.00	2 10	2.40	0.070	0.083	0.005

STYLE 4 PIN 1. CATHODE CATHODE

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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