

# BAT54HT1

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.

- Extremely Fast Switching Speed
- Low Forward Voltage — 0.35 Volts (Typ) @  $I_F = 10 \text{ mA}$
- Device Marking: JV

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

Symbol	Rating	Value	Unit
$V_R$	Reverse Voltage	30	V

### THERMAL CHARACTERISTICS

Symbol	Characteristic	Max	Unit
$P_D$	Total Device Dissipation FR-5 Board,* $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	200 1.57	mW mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	635	$^\circ\text{C}/\text{W}$
$T_J, T_{stg}$	Junction and Storage Temperature	150	$^\circ\text{C}$

\*FR-4 Minimum Pad

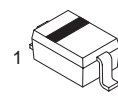


**ON Semiconductor**

Formerly a Division of Motorola

<http://onsemi.com>

## 30 VOLT SILICON HOT-CARRIER DETECTOR AND SWITCHING DIODES



PLASTIC  
SOD-323  
CASE 477



### ORDERING INFORMATION

Device	Package	Shipping
BAT54HT1	SOD-323	3000 / Tape & Reel

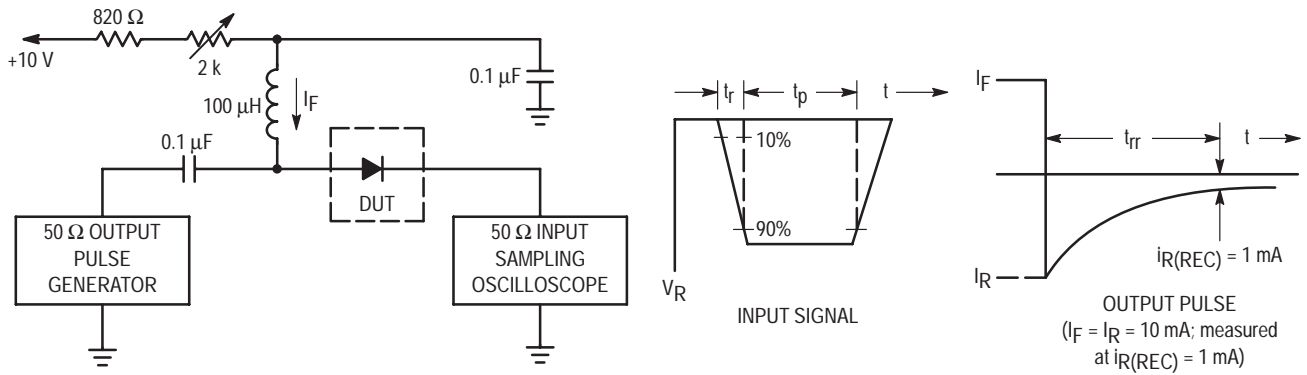
**Preferred** devices are recommended choices for future use and best overall value.

# BAT54HT1

## ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise noted)

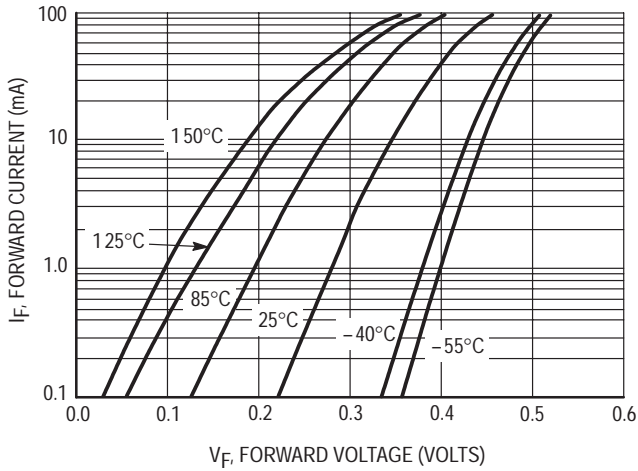
Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage (I <sub>R</sub> = 10 μA)	V <sub>(BR)R</sub>	30	—	—	Volts
Total Capacitance (V <sub>R</sub> = 1.0 V, f = 1.0 MHz)	C <sub>T</sub>	—	7.6	10	pF
Reverse Leakage (V <sub>R</sub> = 25 V)	I <sub>R</sub>	—	0.5	2.0	μA <sub>dc</sub>
Forward Voltage (I <sub>F</sub> = 0.1 mA <sub>dc</sub> )	V <sub>F</sub>	—	0.22	0.24	V <sub>dc</sub>
Forward Voltage (I <sub>F</sub> = 30 mA <sub>dc</sub> )	V <sub>F</sub>	—	0.41	0.5	V <sub>dc</sub>
Forward Voltage (I <sub>F</sub> = 100 mA <sub>dc</sub> )	V <sub>F</sub>	—	0.52	1.0	V <sub>dc</sub>
Reverse Recovery Time (I <sub>F</sub> = I <sub>R</sub> = 10 mA <sub>dc</sub> , I <sub>R(REC)</sub> = 1.0 mA <sub>dc</sub> ) Figure 1	t <sub>rr</sub>	—	—	5.0	ns
Forward Voltage (I <sub>F</sub> = 1.0 mA <sub>dc</sub> )	V <sub>F</sub>	—	0.29	0.32	V <sub>dc</sub>
Forward Voltage (I <sub>F</sub> = 10 mA <sub>dc</sub> )	V <sub>F</sub>	—	0.35	0.40	V <sub>dc</sub>
Forward Current (DC)	I <sub>F</sub>	—	—	200	mA <sub>dc</sub>
Repetitive Peak Forward Current	I <sub>FRM</sub>	—	—	300	mA <sub>dc</sub>
Non-Repetitive Peak Forward Current (t < 1.0 s)	I <sub>FSM</sub>	—	—	600	mA <sub>dc</sub>

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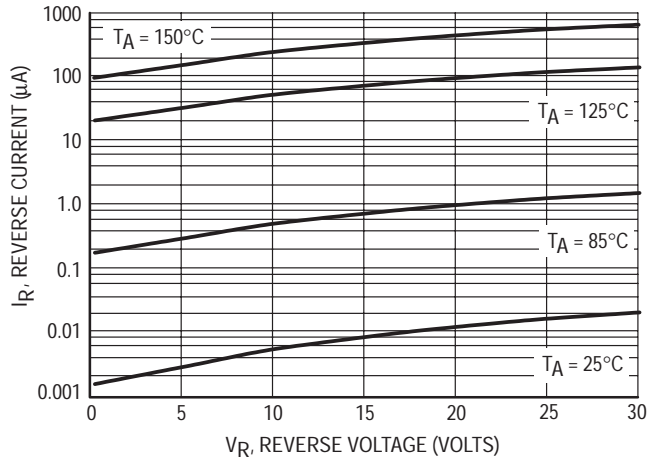


- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current ( $I_F$ ) of 10 mA.  
 2. Input pulse is adjusted so  $I_{R(\text{peak})}$  is equal to 10 mA.  
 3.  $t_p \gg t_{rr}$

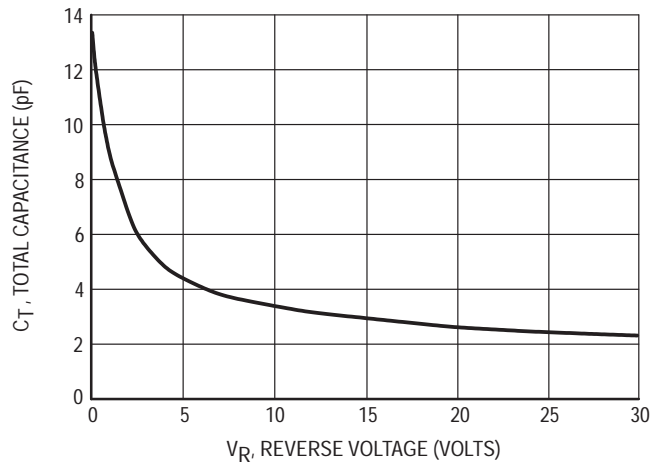
**Figure 1. Recovery Time Equivalent Test Circuit**



**Figure 2. Forward Voltage**



**Figure 3. Leakage Current**

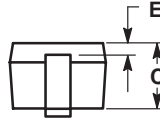
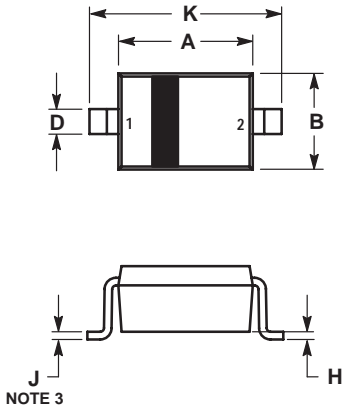


**Figure 4. Total Capacitance**

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## PACKAGE DIMENSIONS

### SOD-323 PLASTIC PACKAGE CASE 477-02 ISSUE A



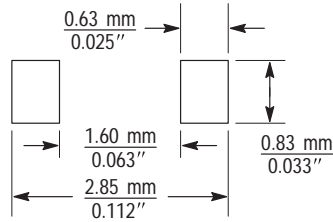
NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. LEAD THICKNESS SPECIFIED PER L/F DRAWING WITH SOLDER PLATING.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.60	1.80	0.063	0.071
B	1.15	1.35	0.045	0.053
C	0.80	1.00	0.031	0.039
D	0.25	0.40	0.010	0.016
E	0.15 REF		0.006 REF	
H	0.00	0.10	0.000	0.004
J	0.089	0.177	0.0035	0.0070
K	2.30	2.70	0.091	0.106


STYLE 1:

- PIN 1. CATHODE
- ANODE



( $\frac{\text{mm}}{\text{inches}}$ )

### SOD-323 Soldering Footprint

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