

# 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) @  $I_F = 10$  mAdc



## ORDERING INFORMATION

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

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

## BAT54HT1

30 VOLT SILICON  
HOT-CARRIER DETECTOR  
AND SWITCHING DIODES



SOD-323, CASE 477

## MARKING DIAGRAM



## MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Reverse Voltage	$V_R$	30	V

## THERMAL CHARACTERISTICS

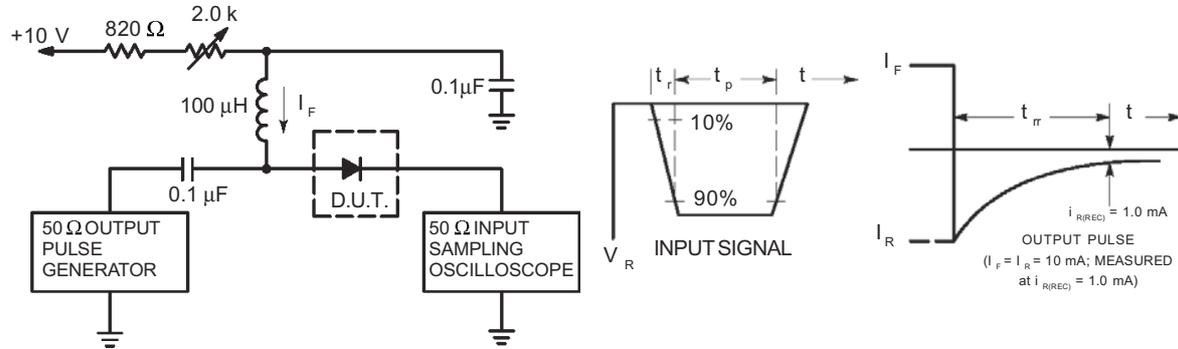
Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board,* $T_A = 25^\circ\text{C}$	$P_D$	200	mW
Derate above $25^\circ\text{C}$		1.57	mW/ $^\circ\text{C}$
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	635	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range	$T_J, T_{stg}$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

\*FR-5 Minimum Pad

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

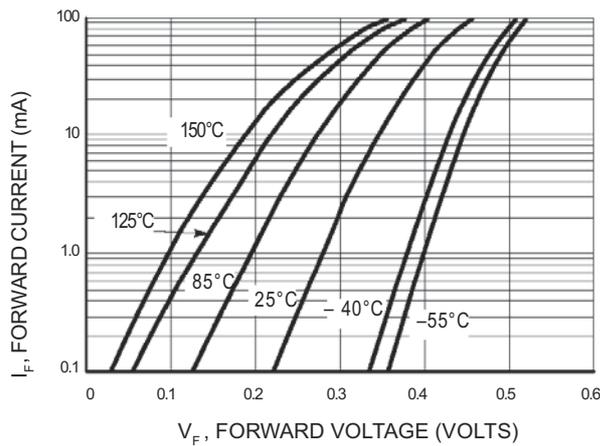
Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage ( $I_R = 10 \mu\text{A}$ )	$V_{(BR)R}$	30	—	—	Volts
Total Capacitance ( $V_R = 1.0$ V, $f = 1.0$ MHz)	$C_T$	—	7.6	10	pF
Reverse Leakage ( $V_R = 25$ V)	$I_R$	—	0.5	2.0	$\mu\text{Adc}$
Forward Voltage ( $I_F = 0.1$ mAdc)	$V_F$	—	0.22	0.24	Vdc
Forward Voltage ( $I_F = 30$ mAdc)	$V_F$	—	0.41	0.5	Vdc
Forward Voltage ( $I_F = 100$ mAdc)	$V_F$	—	0.52	1.0	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
Forward Current (DC)	$I_F$	—	—	200	mAdc
Repetitive Peak Forward Current	$I_{FRM}$	—	—	300	mAdc
Non-Repetitive Peak Forward Current ( $t < 1.0$ s)	$I_{FSM}$	—	—	600	mAdc

### BAT54HT1

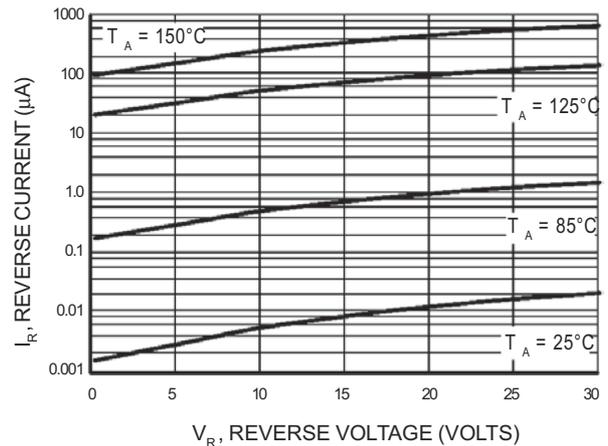


- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current ( $I_F$ ) of 10mA.  
 2. Input pulse is adjusted so  $I_{R(peak)}$  is equal to 10mA.  
 3.  $t_p \gg t_{rr}$

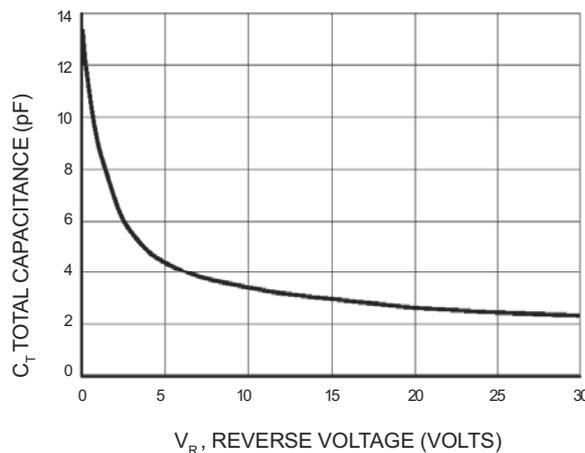
**Figure 1. Recovery Time Equivalent Test Circuit**



**Figure 2. Forward Voltage**



**Figure 3. Leakage Current**



**Figure 4. Total Capacitance**