

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)

Rating	Symbol	Value	Unit
Reverse Voltage	V_R	30	V

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, (Note 1.) $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	200 1.57	mW mW/ $^\circ\text{C}$
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	635	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature	T_J, T_{stg}	150	$^\circ\text{C}$

1. FR-4 Minimum Pad



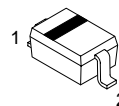
ON Semiconductor™

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30 VOLT SILICON HOT-CARRIER DETECTOR AND SWITCHING DIODES



MARKING DIAGRAM



PLASTIC
SOD-323
CASE 477

ORDERING INFORMATION

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

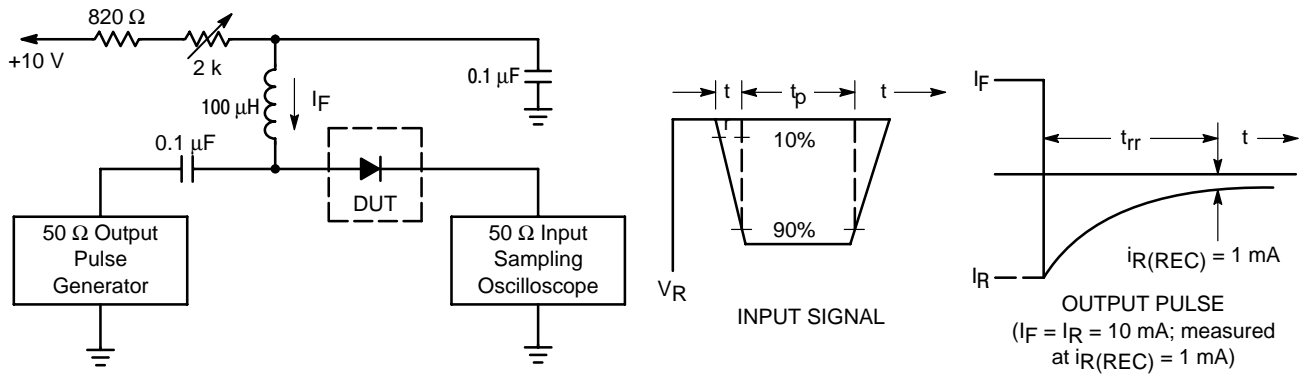
Preferred devices are recommended choices for future use and best overall value.

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

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage ($I_R = 10 \mu\text{A}$)	$V_{(BR)R}$	30	—	—	Volts
Total Capacitance ($V_R = 1.0 \text{ V}$, $f = 1.0 \text{ MHz}$)	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, $I_{R(\text{REC})} = 1.0 \text{ mA}$ 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
Repetitive Peak Forward Current	I_{FRM}	—	—	300	mA
Non-Repetitive Peak Forward Current ($t < 1.0 \text{ s}$)	I_{FSM}	—	—	600	mA

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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

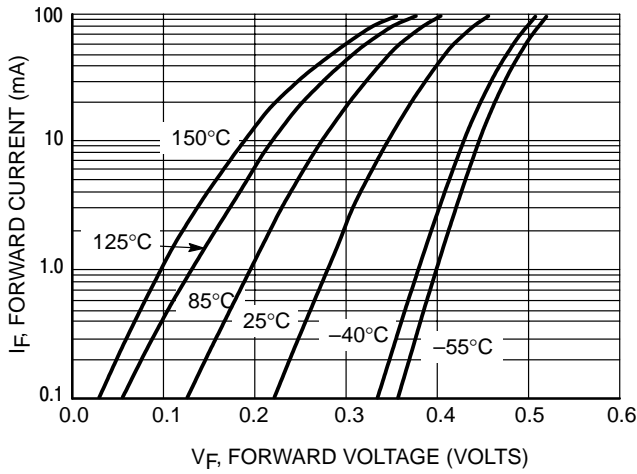


Figure 2. Forward Voltage

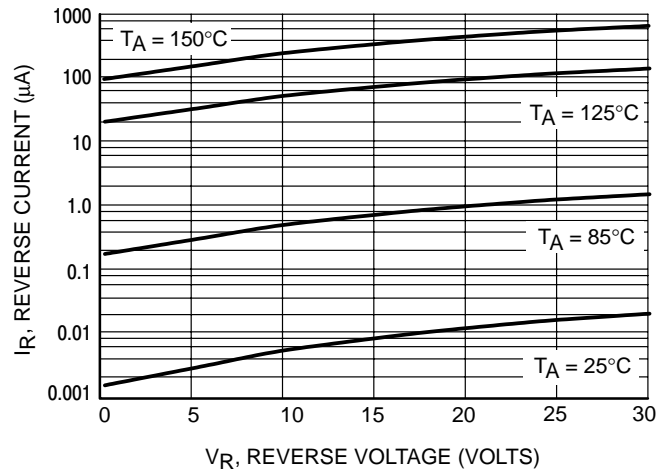


Figure 3. Leakage Current

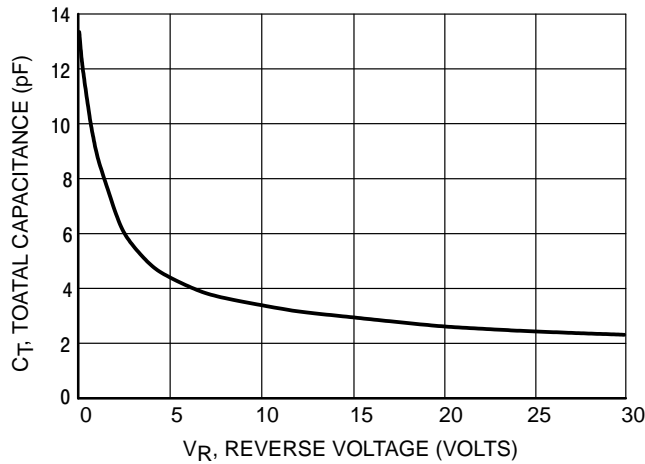
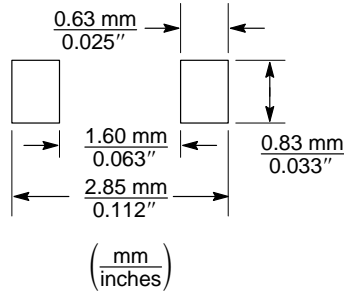
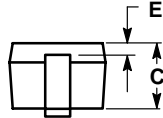
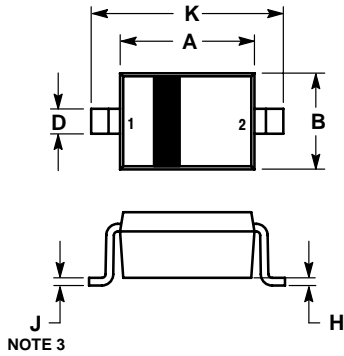


Figure 4. Total Capacitance

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PACKAGE DIMENSIONS

SOD-323
PLASTIC PACKAGE
CASE 477-02
ISSUE B




SOD-323
Soldering Footprint

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
 2. ANODE

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