



SEMICONDUCTOR

DATA SHEET

BAT54A

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.

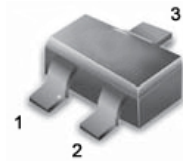
- Extremely Fast Switching Speed
- Low Forward Voltage — 0.35 Volts (Typ) @ $I_F = 10$ mAdc

Features

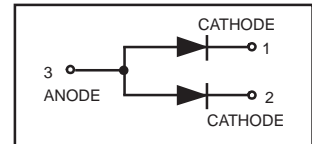
- Pb-Free Package May be Available. The G-Suffix Denotes a Pb-Free Lead Finish

ORDERING INFORMATION

Device	Marking	Shipping
BAT54A	B6	3000/Tape & Reel



SOT-23 (TO-236AB)



DEVICE MARKING

BAT54A = B6

MAXIMUM RATINGS (T_J = 125°C unless otherwise noted)

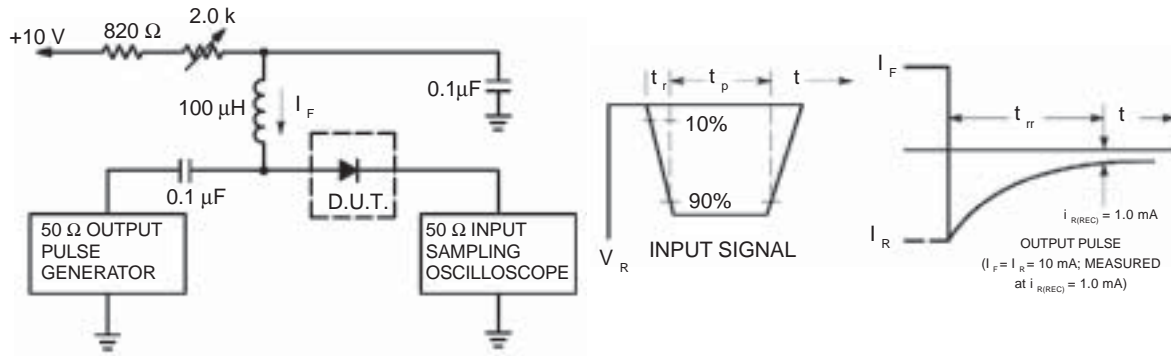
Rating	Symbol	Max	Unit
Reverse Voltage	V_R	30	Volts
Forward Power Dissipation @ T _A = 25°C	P_F	225	mW
Derate above 25°C		1.8	mW/°C
Forward Current(DC)	I_F	200Max	mA
Junction Temperature	T _J	125Max	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage ($I_R = 10 \mu A$)	$V_{(BR)R}$	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	μA_{dc}
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
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}	—	—	625	mAdc

RATING AND CHARACTERISTIC CURVES

BAT54A



- 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

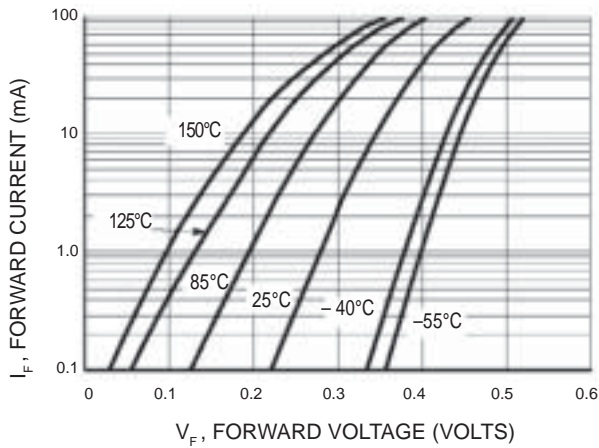


Figure 2. Forward Voltage

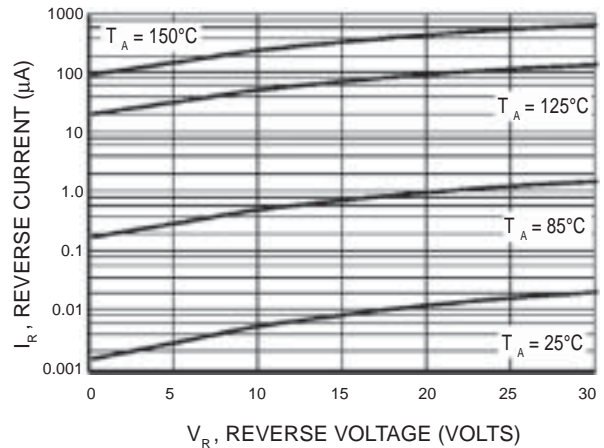


Figure 3. Leakage Current

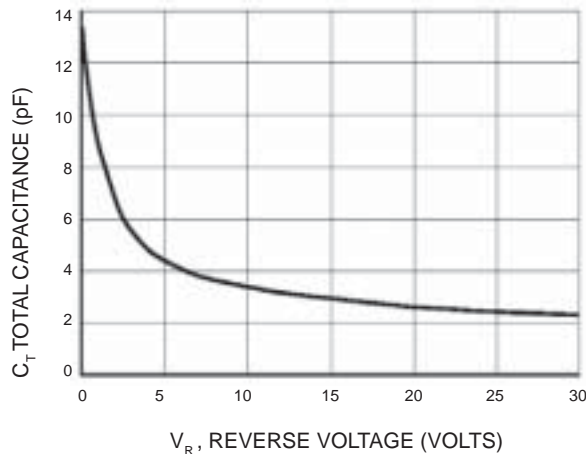


Figure 4. Total Capacitance

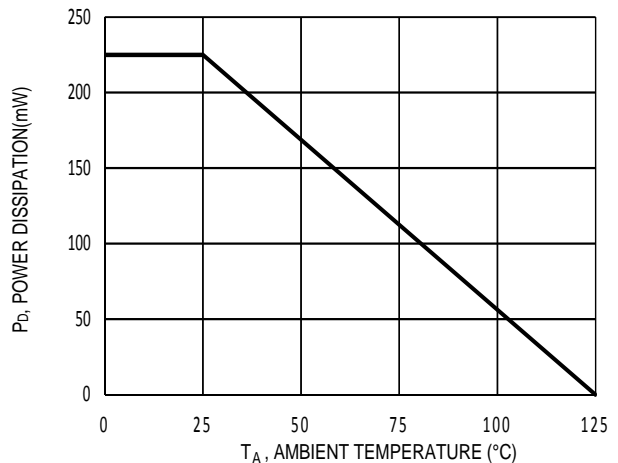
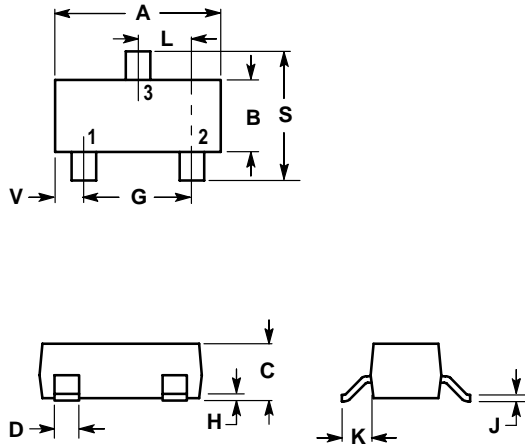


Figure 5. Power derating curve

SOT-23



NOTES:

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

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

