

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) @ $I_F = 10 \text{ mAdc}$

Features

We declare that the material of product compliance with RoHS requirements.

ORDERING INFORMATION

Device	Marking	Shipping
LBAT54ALT1G	B6	3000/Tape & Reel
LBAT54ALT3G	B6	10000/Tape & Reel

DEVICE MARKING

LBAT54ALT1G = B6

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

Rating	Symbol	Max	Unit
Reverse Voltage	V_R	30	Volts
Forward Power Dissipation	P_F	225	mW
@ $T_A = 25^\circ\text{C}$		1.8	mW/°C
Derate above 25°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 ($T_A = 25^\circ\text{C}$ unless otherwise noted) (EACH DIODE)

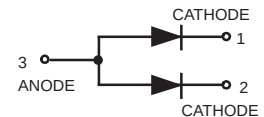
Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage ($I_R = 10 \mu\text{A}$)	$V_{(BR)R}$	30	—	—	Volts
Total Capacitance ($V_R = 1.0 \text{ V}$, $f = 1.0 \text{ MHz}$)	C_T	—	—	10	pF
Reverse Leakage ($V_R = 25 \text{ V}$)	I_R	—	0.5	2.0	μAdc
Forward Voltage ($I_F = 0.1 \text{ mAdc}$)	V_F	—	0.22	0.24	Vdc
Forward Voltage ($I_F = 30 \text{ mAdc}$)	V_F	—	0.41	0.5	Vdc
Forward Voltage ($I_F = 100 \text{ mAdc}$)	V_F	—	0.52	1.0	Vdc
Reverse Recovery Time ($I_F = I_R = 10 \text{ mAdc}$, $I_{R(REC)} = 1.0 \text{ mAdc}$, Figure 1)	t_{rr}	—	—	5.0	ns
Forward Voltage ($I_F = 1.0 \text{ mAdc}$)	V_F	—	0.29	0.32	Vdc
Forward Voltage ($I_F = 10 \text{ mAdc}$)	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 ($t < 1.0 \text{ s}$)	I_{FSM}	—	—	600	mAdc

LBAT54ALT1G

30 VOLTS SCHOTTKY BARRIER
DETECTOR AND SWITCHING
DIODES



SOT-23 (TO-236AB)



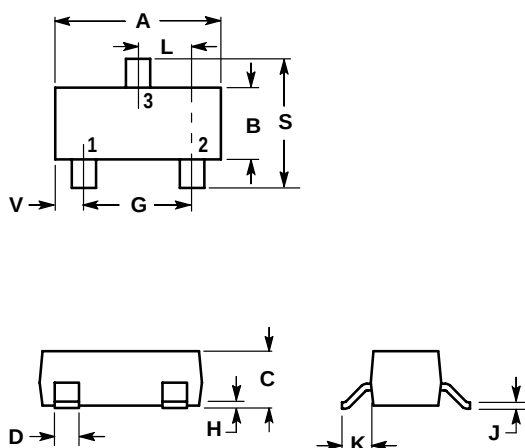
The figure consists of two parts. The left part is a circuit diagram for a diode turn-off experiment. It features a +10V DC source connected in series with an 820Ω resistor and a 2.0kΩ variable resistor. This is followed by a 100μH inductor and a 0.1μF capacitor. A diode, labeled 'D.U.T.' (Diode Under Test), is connected in series with the capacitor. The output of the diode is connected to a 50Ω input sampling oscilloscope. The current through the diode is labeled I_F . The right part shows two waveforms. The 'INPUT SIGNAL' is a trapezoidal pulse with a rising time t_r , a pulse width t_p , and a total time t . The 'OUTPUT PULSE' is a decaying exponential current i_F starting from a peak value I_F and decaying to a value I_R over a time t_{rr} . The total time t is also indicated. The output pulse is measured at $i_{R(REC)} = 1.0 \text{ mA}$.

Figure 1. Recovery Time Equivalent Test Circuit



LBAT54ALT1G

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

