

# 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

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<sub>J</sub> = 125°C unless otherwise noted)

| Rating   | Symbol    | Max         | Unit  |
|--|-----------|-------------|-------|
| Reverse Voltage                                      | $V_R$     | 30          | Volts |
| Forward Power Dissipation<br>@ T <sub>A</sub> = 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<sub>A</sub> = 25°C unless otherwise noted) (EACH DIODE)

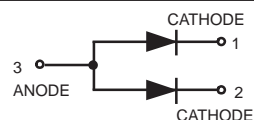
| Characteristic   | Symbol      | Min | Typ  | Max  | Unit         |
|--|-------------|-----|------|------|--------------|
| Reverse Breakdown Voltage ( $I_R = 10 \mu A$ )                                       | $V_{(BR)R}$ | 30  | —    | —    | Volts        |
| Total Capacitance ( $V_R = 1.0$ V, $f = 1.0$ MHz)                                    | $C_T$       | —   | —    | 10   | pF           |
| Reverse Leakage ( $V_R = 25$ V)  | $I_R$       | —   | 0.5  | 2.0  | $\mu A_{dc}$ |
| 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 | 1.0  | Vdc          |
| Reverse Recovery Time<br>( $I_F = I_R = 10$ 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         |

## LBAT54ALT1G

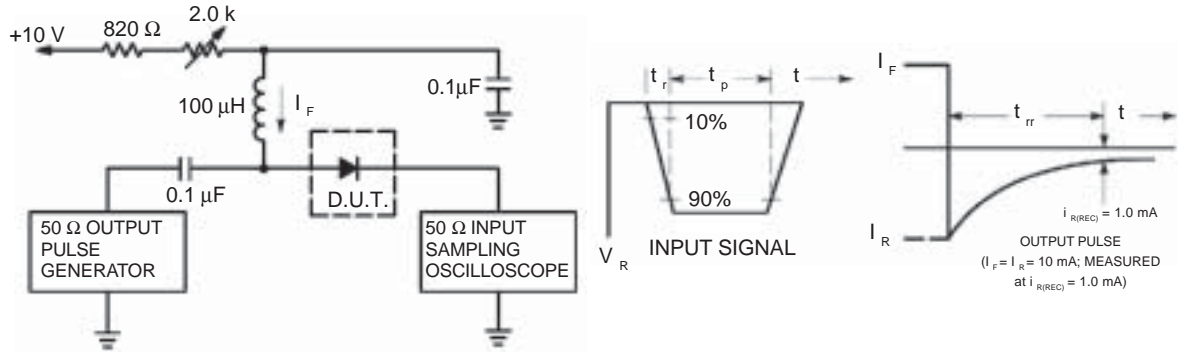
30 VOLTS SCHOTTKY BARRIER  
DETECTOR AND SWITCHING  
DIODES



SOT-23 (TO-236AB)

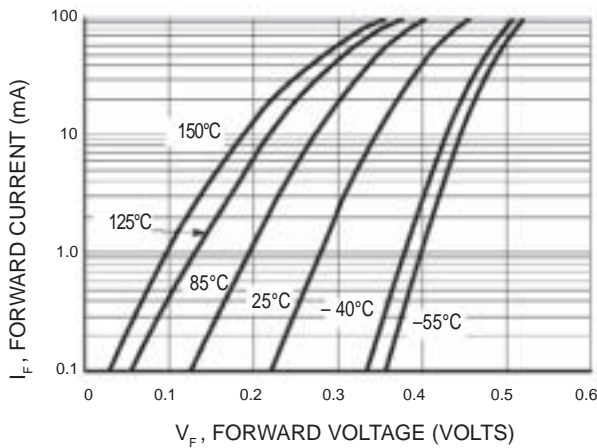


**LBAT54ALT1G**

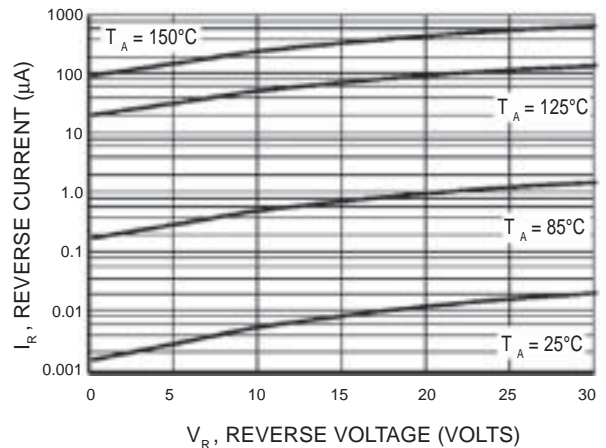


- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current ( $I_F$ ) of 10mA.  
 2. Input pulse is adjusted so  $I_{R(\text{peak})}$  is equal to 10mA.  
 3.  $t_p \gg t_{rr}$

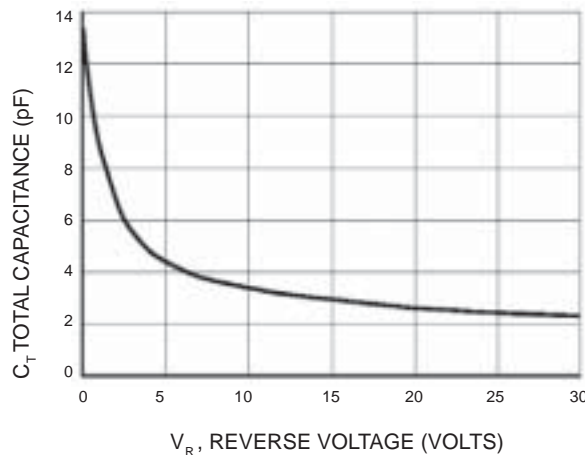
**Figure 1. Recovery Time Equivalent Test Circuit**



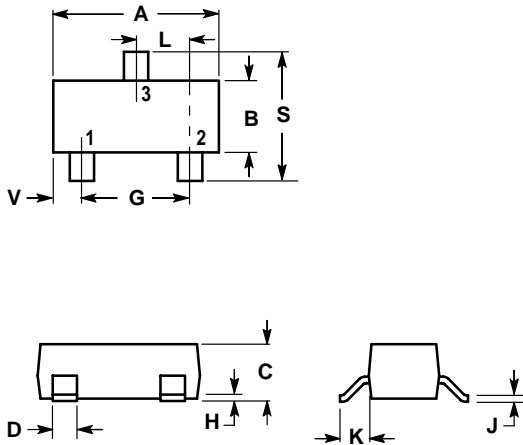
**Figure 2. Forward Voltage**



**Figure 3. Leakage Current**



**Figure 4. Total Capacitance**

**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  |

