

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
- Pb-Free package is available

DEVICE MARKING AND ORDERING INFORMATION

| Device | Marking | Shipping |
|-------------------------|---------|----------------|
| LBAT54WT1 | B4 | 3000/Tape&Reel |
| LBAT54WT1G (Pb-Free) | B4 | 3000/Tape&Reel |

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 | 200 | mW |
| Derate above 25°C | | 1.6 | 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)

| Characteristic | Symbol | Min | Typ | Max | Unit |
|----------------------------------------------------------------------------------------------------------------|--------------------|-----|------|------|-------|
| Reverse Breakdown Voltage (I _R = 10 μA) | 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 | μAdc |
| 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 |

LBAT54WT1

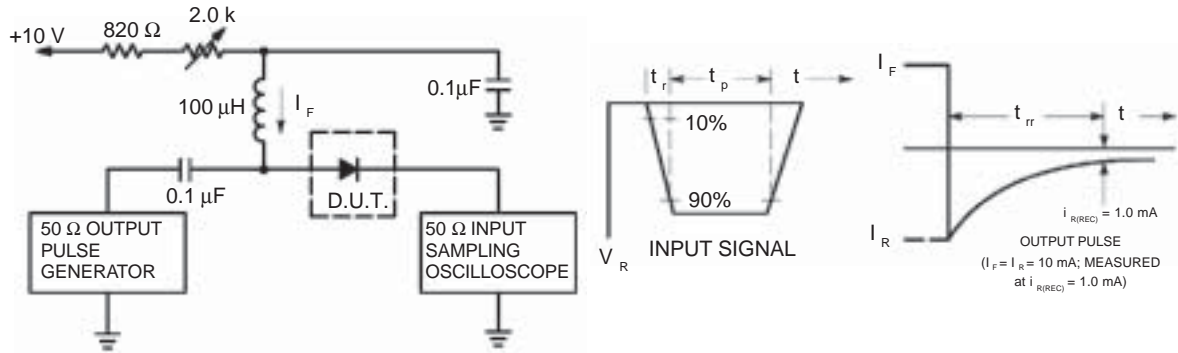
30 VOLTS SCHOTTKY BARRIER
DETECTOR AND SWITCHING
DIODES



SOT-323 (SC-70)



LBAT54WT1



- 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

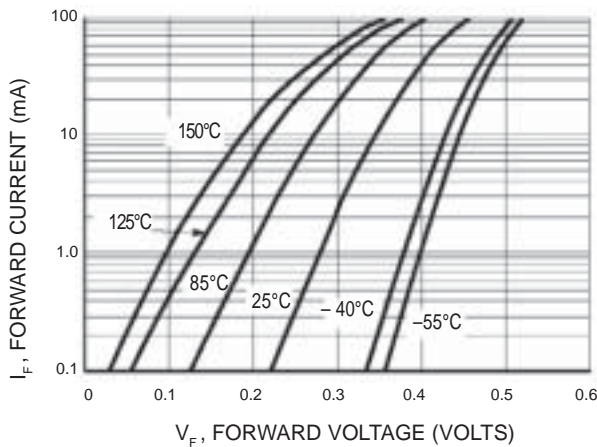


Figure 2. Forward Voltage

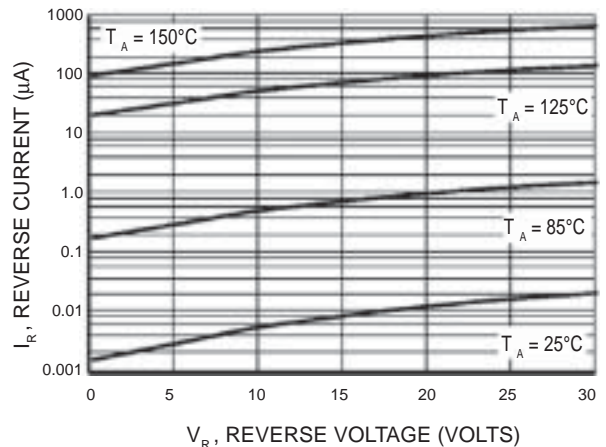


Figure 3. Leakage Current

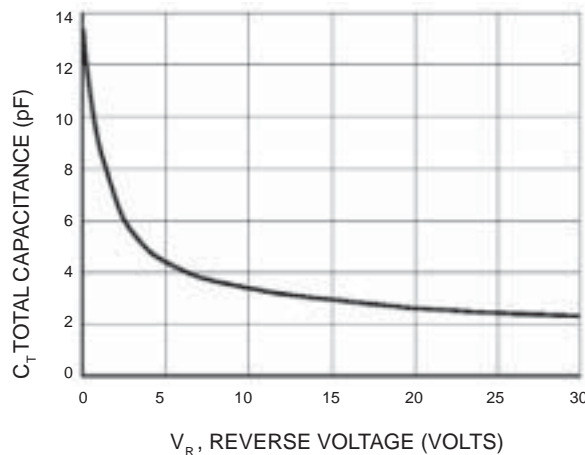


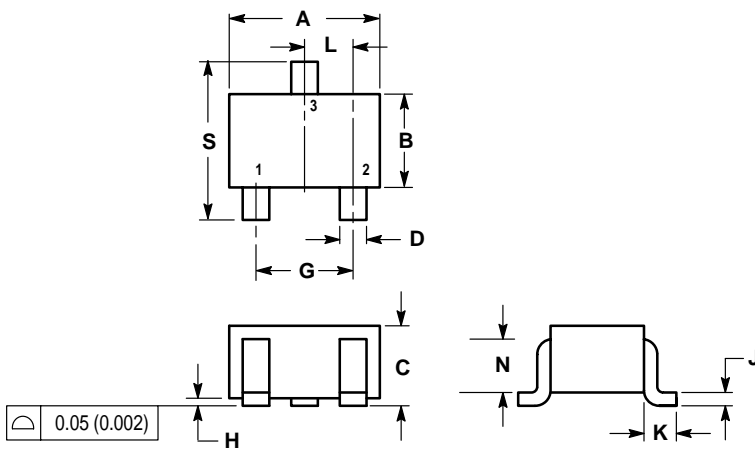
Figure 4. Total Capacitance

LBAT54WT1

SC-70 / SOT-323

NOTES:

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



| DIM | INCHES | | MILLIMETERS | |
|-----|-----------|-------|-------------|------|
| | MIN | MAX | MIN | MAX |
| A | 0.071 | 0.087 | 1.80 | 2.20 |
| B | 0.045 | 0.053 | 1.15 | 1.35 |
| C | 0.032 | 0.040 | 0.80 | 1.00 |
| D | 0.012 | 0.016 | 0.30 | 0.40 |
| G | 0.047 | 0.055 | 1.20 | 1.40 |
| H | 0.000 | 0.004 | 0.00 | 0.10 |
| J | 0.004 | 0.010 | 0.10 | 0.25 |
| K | 0.017 REF | | 0.425 REF | |
| L | 0.026 BSC | | 0.650 BSC | |
| N | 0.028 REF | | 0.700 REF | |
| S | 0.079 | 0.095 | 2.00 | 2.40 |

