



## BAT54x

DIODE

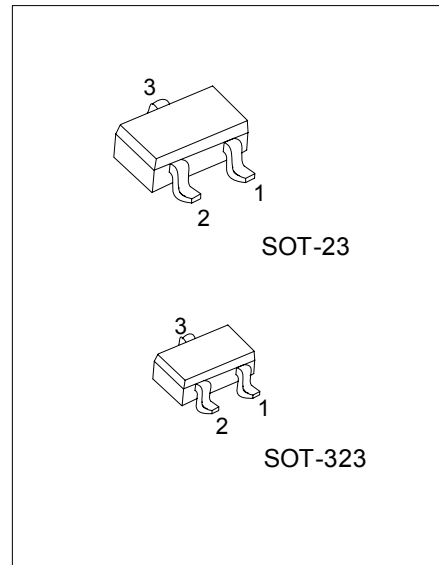
### SCHOTTKY BARRIER (DUAL) DIODES

#### DESCRIPTION

Planar Schottky barrier diodes encapsulated in the SOT-23 and SOT-323 small plastic SMD package. Single diodes and dual diodes with different pin configuration are available.

#### FEATURES

- \* Low forward voltage
- \* Guard ring protected
- \* Small plastic SMD package



\*Pb-free plating product number: BAT54xL

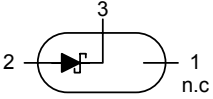
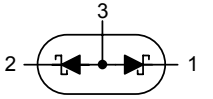
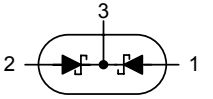
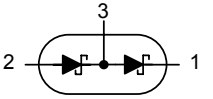
#### ORDERING INFORMATION

| Order Number |                   | Package | Pin Assignment |    |      | Packing   |
|--------------|-------------------|---------|----------------|----|------|-----------|
| Normal       | Lead Free Plating |         | 1              | 2  | 3    |           |
| BAT54-AE3-R  | BAT54L-AE3-R      | SOT-23  | x              | A  | K    | Tape Reel |
| BAT54A-AE3-R | BAT54AL-AE3-R     | SOT-23  | K1             | K2 | A2A1 | Tape Reel |
| BAT54C-AE3-R | BAT54CL-AE3-R     | SOT-23  | A1             | A2 | K2K1 | Tape Reel |
| BAT54S-AE3-R | BAT54SL-AE3-R     | SOT-23  | K1             | A2 | K2A1 | Tape Reel |
| BAT54-AL3-R  | BAT54L-AL3-R      | SOT-323 | x              | A  | K    | Tape Reel |
| BAT54A-AL3-R | BAT54AL-AL3-R     | SOT-323 | K1             | K2 | A2A1 | Tape Reel |
| BAT54C-AL3-R | BAT54CL-AL3-R     | SOT-323 | A1             | A2 | K2K1 | Tape Reel |
| BAT54S-AL3-R | BAT54SL-AL3-R     | SOT-323 | K1             | A2 | K2A1 | Tape Reel |

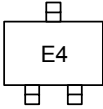
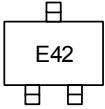
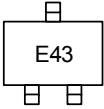
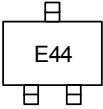
Note: Pin Assignment: A: Anode K: Cathode x:NC

|   |   |
|---|---|
| <p>BAT54L-AE3-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Lead Plating</p> | <p>(1) R: Tape Reel</p> <p>(2) AE3: SOT-23, AL3: SOT-323</p> <p>(3) L: Lead Free Plating Blank: Pb/Sn</p> |
|---|---|

■ DIODE CONFIGURATION AND SYMBOL

| BAT54   | BAT54A  | BAT54C   | BAT54S  |
|---|---|--|---|
|  |  |  |  |

■ MARKING

| BAT54   | BAT54A  | BAT54C   | BAT54S  |
|---|---|--|---|
|  |  |  |  |

## ■ ABSOLUTE MAXIMUM RATINGS

| PARAMETER  | SYMBOL    | RATINGS    | UNIT |
|--|-----------|------------|------|
| <b>Per diode</b>   |           |            |      |
| Continuous Reverse Voltage                               | $V_R$     | 30         | V    |
| Continuous Forward Current                               | $I_F$     | 200        | mA   |
| Repetitive Peak Forward Current ( $t_p < 1s, \leq 0.5$ ) | $I_{FRM}$ | 300        | mA   |
| Non-repetitive Peak Forward Current ( $t_p < 10ms$ )     | $I_{FSM}$ | 600        | mA   |
| Junction Temperature                                     | $T_J$     | +125       |      |
| Storage Temperature                                      | $T_{STG}$ | -60 ~ +150 |      |
| <b>Per device</b>  |           |            |      |
| Power Dissipation ( $T_a \leq 25$ )                      | $P_D$     | 230        | mW   |

Note Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

## ■ THERMAL DATA

| PARAMETER                                   | SYMBOL  | RATINGS | UNIT |
|---|---------|---------|------|
| Thermal Resistance From Junction to Ambient | SOT-23  | 500     | K/W  |
|   | SOT-323 |         |      |

## ■ ELECTRICAL CHARACTERISTICS ( $T_a = 25$ , unless otherwise specified.)

| PARAMETER                         | SYMBOL   | TEST CONDITIONS  | MIN | TYP | MAX | UNIT    |
|-----------------------------------|----------|--|-----|-----|-----|---------|
| Forward Voltage (See Fig.1)       | $V_F$    | $I_F = 0.1mA$  |     |     | 240 | mV      |
|                                   |          | $I_F = 1mA$  |     |     | 320 | mV      |
|                                   |          | $I_F = 10mA$   |     |     | 400 | mV      |
|                                   |          | $I_F = 30mA$   |     |     | 500 | mV      |
|                                   |          | $I_F = 100mA$  |     |     | 800 | mV      |
| Reverse Current (See Fig.2)       | $I_R$    | $V_R = 25V$  |     |     | 2   | $\mu A$ |
| Reverse Recovery Time (see Fig.4) | $t_{rr}$ | When switched from $I_F = 10mA$ to $I_R = 10mA, R_L = 100\Omega$ measured at $I_R = 1mA$ |     |     | 5   | ns      |
| Diode Capacitance (see Fig.3)     | $C_d$    | $f = 1 MHz, V_R = 1V;$   |     |     | 10  | pF      |

## TYPICAL CHARACTERISTICS

Fig.1 Forward current as a function of forward voltage; typical values.

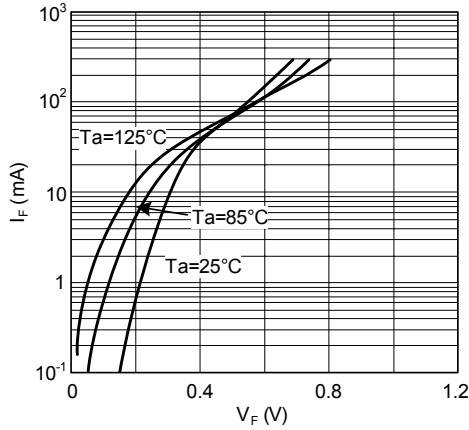


Fig.2 Reverse current as a function of reverse voltage; typical values.

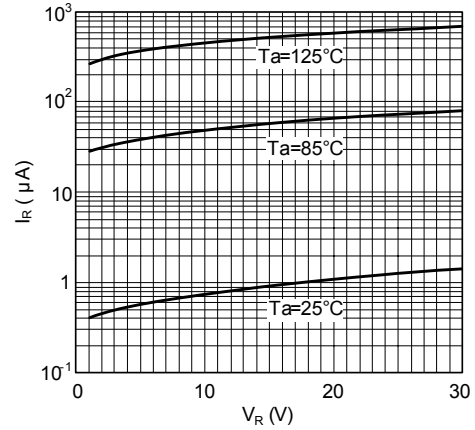


Fig.3 Diode capacitance as a function of reverse voltage; typical values.

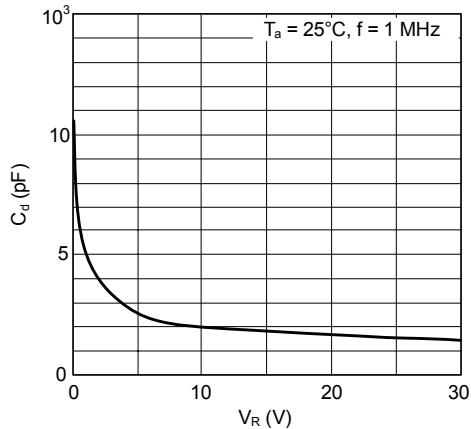
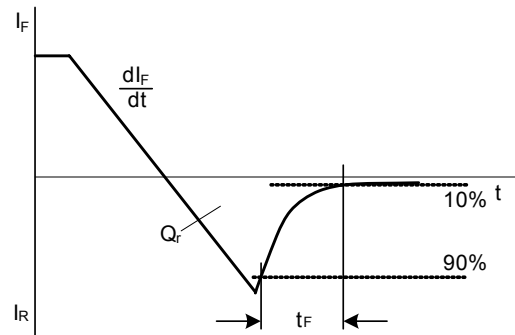


Fig.4 Reverse recovery definitions



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