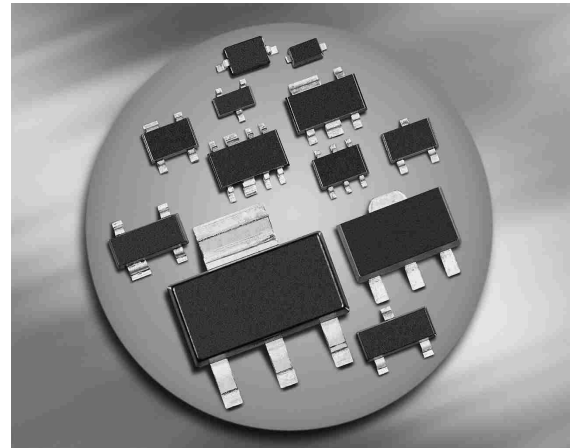
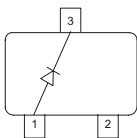
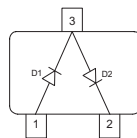
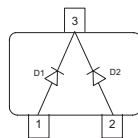
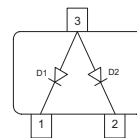


## Silicon Schottky Diodes

- For low-loss, fast-recovery, meter protection, bias isolation and clamping application
- Guard ring protected
- Low forward voltage


**BAT54**

**BAT54-04**

**BAT54-05**

**BAT54-06**


| Type      | Package | Configuration  | $L_S$ (nH) | Marking |
|-----------|---------|----------------|------------|---------|
| BAT54*    | SOT23   | single         | 1.8        | T       |
| BAT54-04* | SOT23   | series         | 1.8        | TS      |
| BAT54-05* | SOT23   | common cathode | 1.8        | TC      |
| BAT54-06* | SOT23   | common anode   | 1.8        | TA      |

\* Preliminary data

**Maximum Ratings** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified

| Parameter   | Symbol    | Value       | Unit             |
|---|-----------|-------------|------------------|
| Diode reverse voltage   | $V_R$     | 30          | V                |
| Forward current   | $I_F$     | 200         | mA               |
| Non-repetitive peak surge forward current<br>( $t \leq 10$ ms)                  | $I_{FSM}$ | 600         |                  |
| Repetitive peak forward current <sup>1)</sup><br>$t_p \leq 1$ s, $\delta = 0.5$ | $I_{FRM}$ | 300         | mA               |
| Total power dissipation   | $P_{tot}$ |             | mW               |
| BAT54, $T_S \leq 93^\circ\text{C}$  |           | 230         |                  |
| BAT54-04, $T_S \leq 70^\circ\text{C}$   |           | 230         |                  |
| BAT54-05, $T_S \leq 47^\circ\text{C}$   |           | 230         |                  |
| BAT54-06, $T_S \leq 70^\circ\text{C}$   |           | 230         |                  |
| Junction temperature  | $T_j$     | 150         | $^\circ\text{C}$ |
| Storage temperature   | $T_{stg}$ | -65 ... 150 |                  |

**Thermal Resistance**

| Parameter                                | Symbol     | Value      | Unit |
|--|------------|------------|------|
| Junction - soldering point <sup>2)</sup> | $R_{thJS}$ |            | K/W  |
| BAT54                                    |            | $\leq 245$ |      |
| BAT54-04                                 |            | $\leq 345$ |      |
| BAT54-05                                 |            | $\leq 445$ |      |
| BAT54-06                                 |            | $\leq 345$ |      |

**Electrical Characteristics** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified

| Parameter | Symbol | Values |      |      | Unit |
|-----------|--------|--------|------|------|------|
|           |        | min.   | typ. | max. |      |

**DC Characteristics**

|   |            |                       |                       |                                 |               |
|---|------------|-----------------------|-----------------------|---------------------------------|---------------|
| Breakdown voltage <sup>3)</sup><br>$I_{(BR)} = 10 \mu\text{A}$  | $V_{(BR)}$ | 30                    | -                     | -                               | V             |
| Reverse current <sup>3)</sup><br>$V_R = 25 \text{ V}$   | $I_R$      | -                     | -                     | 2                               | $\mu\text{A}$ |
| Forward voltage <sup>3)</sup><br>$I_F = 0.1 \text{ mA}$<br>$I_F = 1 \text{ mA}$<br>$I_F = 10 \text{ mA}$<br>$I_F = 30 \text{ mA}$<br>$I_F = 100 \text{ mA}$ | $V_F$      | -<br>-<br>-<br>-<br>- | -<br>-<br>-<br>-<br>- | 240<br>320<br>400<br>500<br>800 | mV            |

**AC Characteristics**

|  |          |   |   |    |    |
|--|----------|---|---|----|----|
| Diode capacitance<br>$V_R = 1 \text{ V}$ , $f = 1 \text{ MHz}$   | $C_T$    | - | - | 10 | pF |
| Reverse recovery time<br>$I_F = 10 \text{ mA}$ , $I_R = 10 \text{ mA}$ , measured $I_R = 1 \text{ mA}$ ,<br>$R_L = 100 \Omega$ | $t_{rr}$ | - | - | 5  | ns |

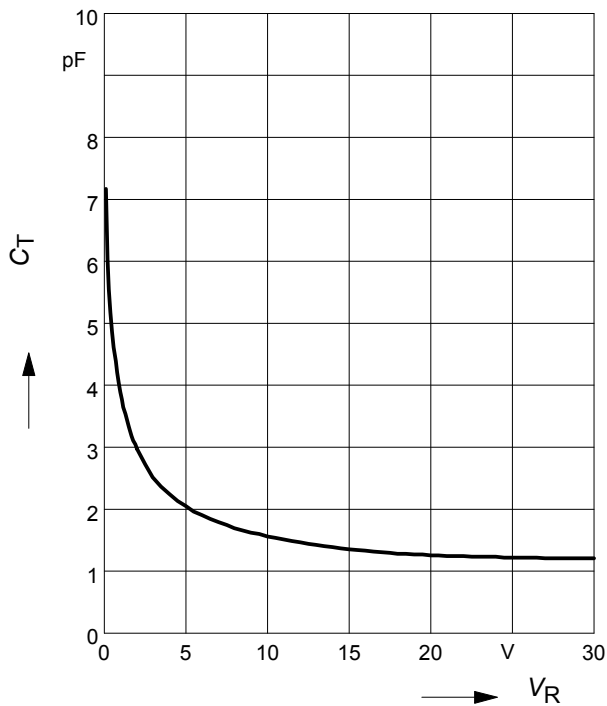
<sup>1</sup>Device mounted on epoxy PCB 40 x 40 x 1.5 mm / 6 cm<sup>2</sup> Cu

<sup>2</sup>For calculation of  $R_{thJA}$  please refer to Application Note Thermal Resistance

<sup>3</sup>Pulsed test:  $t_p = 300 \mu\text{s}$ ;  $D = 0.01$

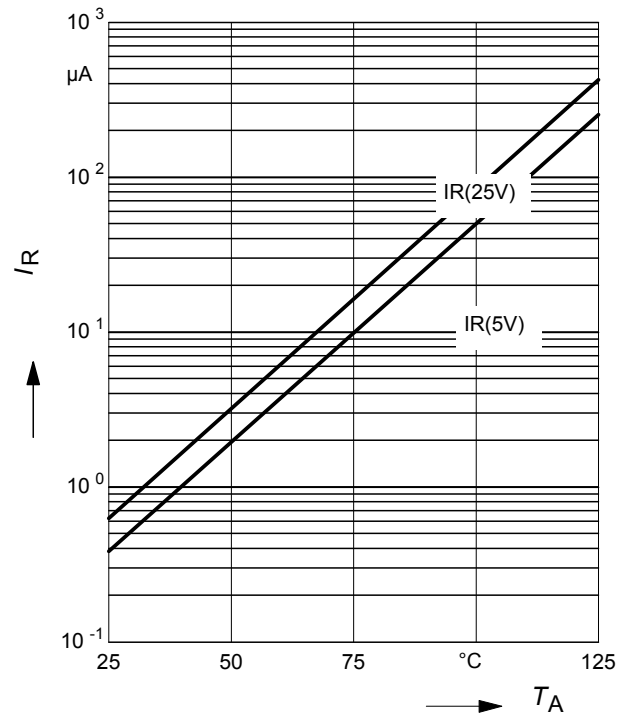
**Diode capacitance  $C_T = f(V_R)$**

$f = 1\text{MHz}$



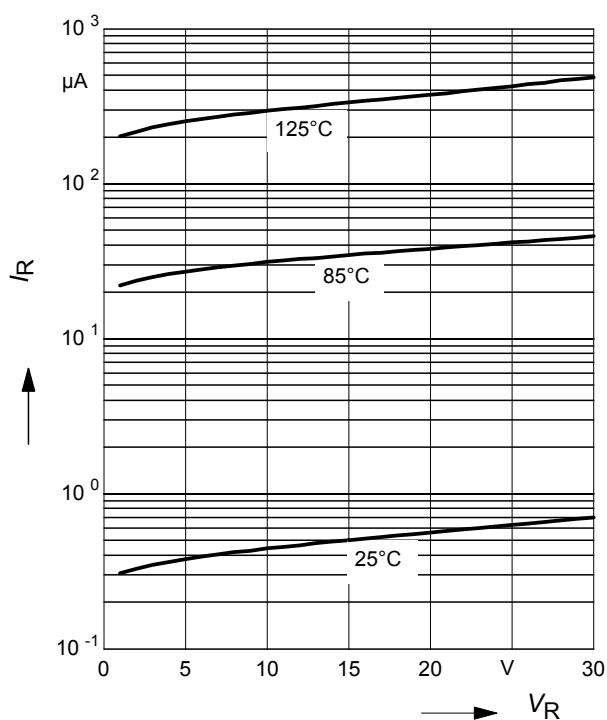
**Reverse current  $I_R = f(T_A)$**

$V_R = \text{Parameter}$



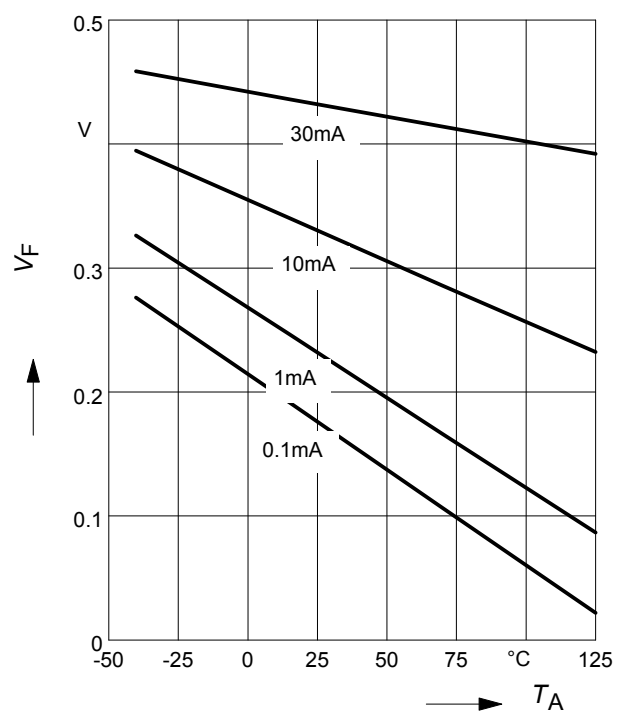
**Reverse current  $I_R = f(V_R)$**

$T_A = \text{Parameter}$



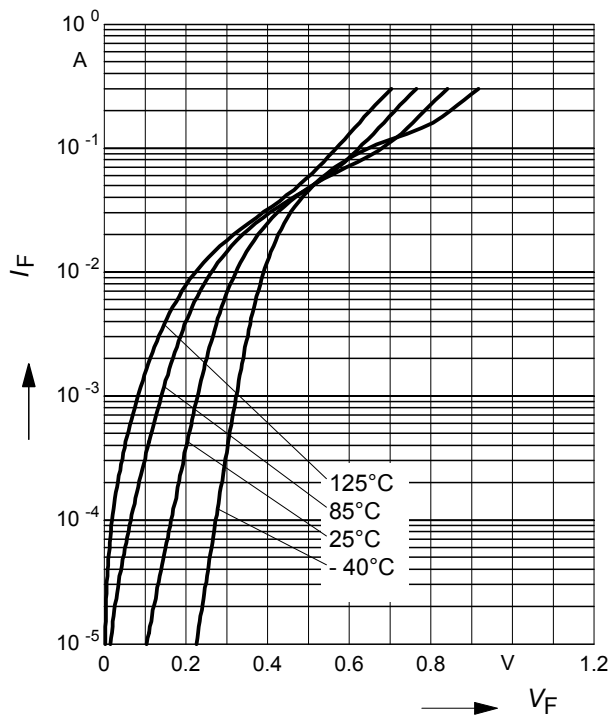
**Forward Voltage  $V_F = f(T_A)$**

$I_F = \text{Parameter}$



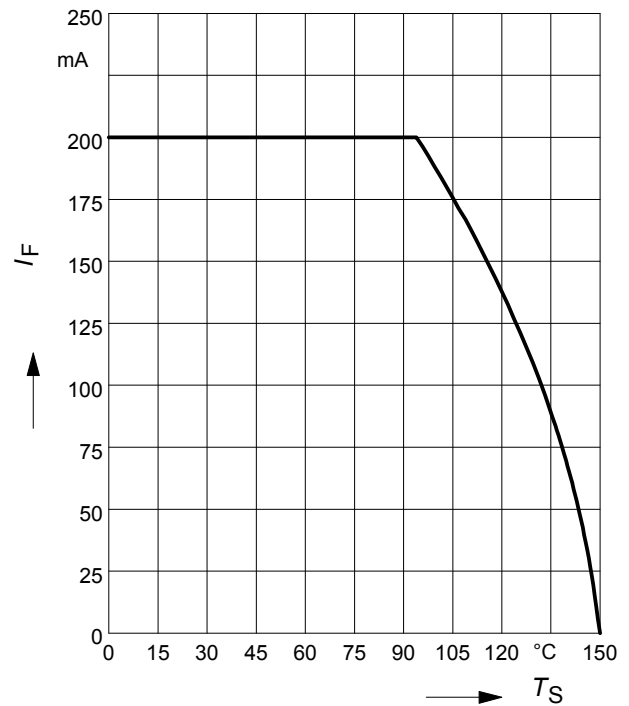
Forward current  $I_F = f(V_F)$

$T_A = \text{Parameter}$



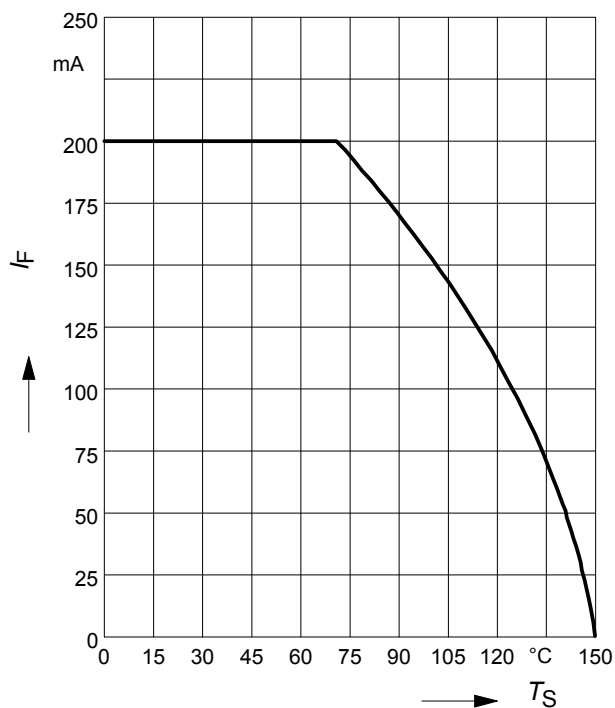
Forward current  $I_F = f(T_S)$

BAT54



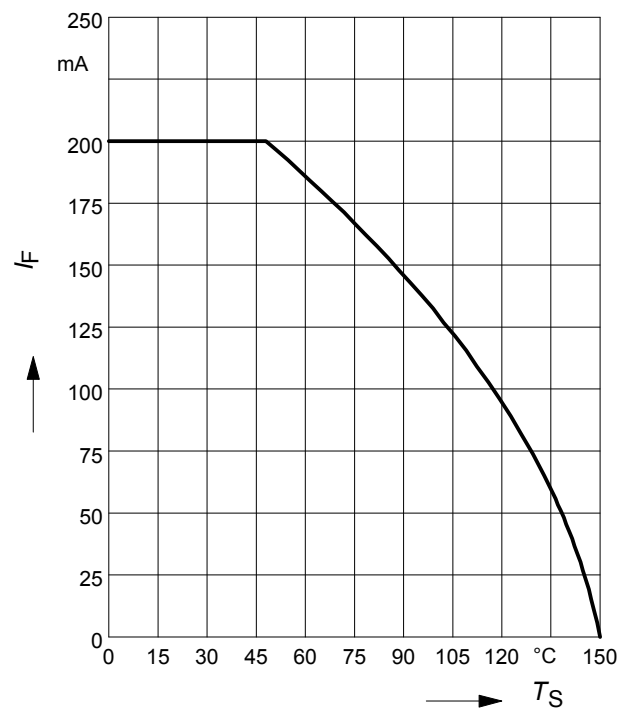
Forward current  $I_F = f(T_S)$

BAT54-04, BAT54-06

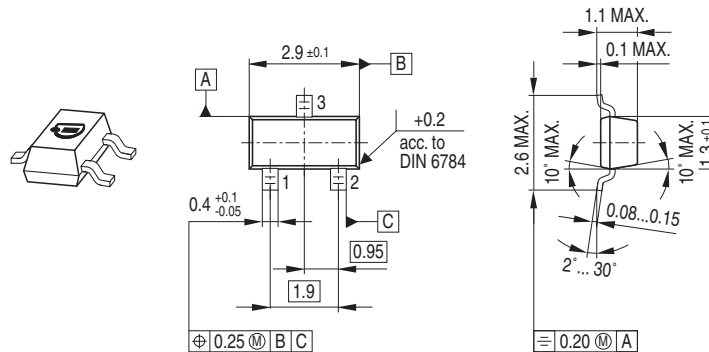


Forward current  $I_F = f(T_S)$

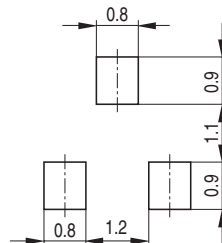
BAT54-05



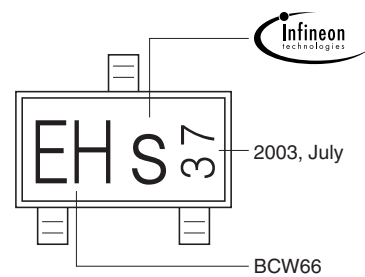
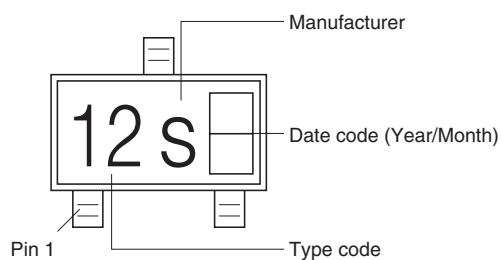
## Package Outline



## Foot Print



## Marking Layout

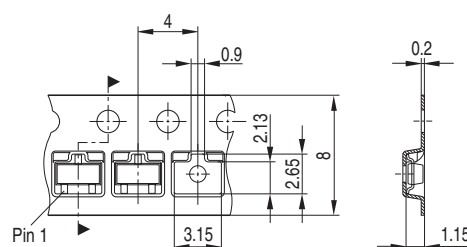


Example

## Packing

Code E6327: Reel  $\varnothing 180 \text{ mm}$  = 3.000 Pieces/Reel

Code E6433: Reel  $\varnothing 330 \text{ mm}$  = 10.000 Pieces/Reel



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