



## SOT-23 Plastic-Encapsulate Transistors

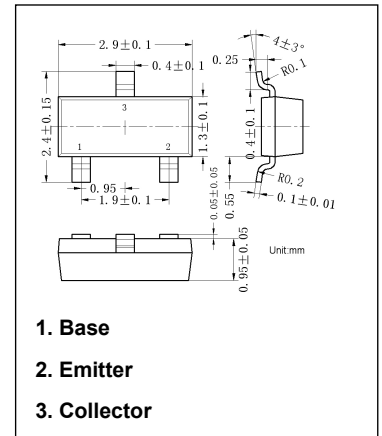
### BC847C NPN Transistors

#### Features

- Ideally suited for automatic insertion
- For switching and AF amplifier applications

#### Marking

- BC847A: 1E
- BC847B: 1F
- BC847C: 1G



#### Maximum Ratings (T<sub>a</sub>=25°C unless otherwise noted)

| Symbol           | Parameter                                   | Value        | Unit |
|------------------|---|--------------|------|
| V <sub>CB0</sub> | Collector Base Voltage                      | 50           | V    |
| V <sub>CEO</sub> | Collector Emitter Voltage                   | 45           | V    |
| V <sub>EBO</sub> | Emitter Base Voltage                        | 6            | V    |
| I <sub>c</sub>   | Collector Current                           | 0.1          | A    |
| P <sub>c</sub>   | Collector Power Dissipation                 | 200          | mW   |
| R <sub>θJA</sub> | Thermal Resistance from Junction to Ambient | 625          | °C/W |
| T <sub>j</sub>   | Junction Temperature                        | 150          | °C   |
| T <sub>stg</sub> | Storage Temperature                         | - 55 to +150 | °C   |

#### Electrical Characteristics (T<sub>a</sub>=25°C unless otherwise specified)

| Symbol               | Parameter                            | Test Conditions                                     | Min  | Typ | Max | Unit |
|----------------------|--------------------------------------|---|--|-----|-----|------|
| V <sub>(BR)CBO</sub> | Collector-base breakdown voltage     | I <sub>c</sub> =10μA, I <sub>E</sub> =0             | 50   |     |     | V    |
| V <sub>(BR)CEO</sub> | Collector-emitter breakdown voltage  | I <sub>c</sub> =10mA, I <sub>B</sub> =0             | 45   |     |     | V    |
| V <sub>(BR)EBO</sub> | Emitter-base breakdown voltage       | I <sub>E</sub> =10μA, I <sub>C</sub> =0             | 6  |     |     | V    |
| I <sub>cBO</sub>     | Collector cut-off current            | V <sub>CB</sub> =50V, I <sub>E</sub> =0             |  |     | 100 | nA   |
| I <sub>cEO</sub>     | Collector cut-off current            | V <sub>CE</sub> =45 V, I <sub>B</sub> =0            |  |     | 100 | nA   |
| I <sub>EBO</sub>     | Emitter cut-off current              | V <sub>EB</sub> =5V, I <sub>C</sub> =0              |  |     | 100 | nA   |
| h <sub>FE</sub>      | DC current gain                      | BC847A  | V <sub>CE</sub> = 5V, I <sub>C</sub> = 2mA | 110 | 220 |      |
|                      |                                      | BC847B  |  | 200 | 450 |      |
|                      |                                      | BC847C  |  | 420 | 800 |      |
| V <sub>CE(sat)</sub> | Collector-emitter saturation voltage | I <sub>C</sub> = 100mA, I <sub>B</sub> = 5mA        |  |     | 0.5 | V    |
| V <sub>BE(sat)</sub> | Base-emitter saturation voltage      | I <sub>C</sub> = 100mA, I <sub>B</sub> = 5mA        |  |     | 1.1 | V    |
| f <sub>T</sub>       | Transition frequency                 | V <sub>CE</sub> =5V, I <sub>C</sub> =10mA, f=100MHz | 100  |     |     | MHz  |
| C <sub>ob</sub>      | Collector output capacitance         | V <sub>CB</sub> = 10V, f = 1MHz                     |  |     | 4.5 | pF   |

# Typical Characteristics

Static Characteristic

