

# BC807

## BC807 SOT-23 Plastic-Encapsulate Transistors (PNP)

### General description

SOT-23 Plastic-Encapsulate Transistors (PNP)

### FEATURES

- Complementary to BC817
- Power Dissipation of 300mW
- High Stability and High Reliability
- SOT-23 Small Outline Plastic Package
- Epoxy UL: 94V-0
- Mounting Position: Any



DEVICE MARKING CODE:

### Maximum Ratings & Thermal Characteristics (Ratings at 25°C ambient temperature unless otherwise specified.)

| Parameters                                  | Symbol           | Value    | Unit |
|---|------------------|----------|------|
| Collector-Base Voltage                      | V <sub>CB0</sub> | -50      | V    |
| Collector-Emitter Voltage                   | V <sub>CE0</sub> | -45      | V    |
| Emitter -Base Voltage                       | V <sub>EBO</sub> | -5       | V    |
| Collector Current-Continuous                | I <sub>c</sub>   | -500     | mA   |
| Collector Power Dissipation                 | P <sub>c</sub>   | 300      | mW   |
| Junction Temperature                        | T <sub>j</sub>   | 150      | °C   |
| Storage Temperature                         | T <sub>stg</sub> | -55-+150 | °C   |
| Thermal resistance From junction to ambient | R <sub>θJA</sub> | 417      | °C/W |

### Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified.)

| Parameter                            | Symbols              | Test Condition  | Limits |       | Unit |
|--------------------------------------|----------------------|---|--------|-------|------|
|                                      |                      |   | Min    | Max   |      |
| Collector-base breakdown voltage     | V(BR)CBO             | I <sub>C</sub> =-10μA, I <sub>E</sub> =0              | -50    |       | V    |
| Collector-emitter breakdown voltage  | V(BR)CEO             | I <sub>C</sub> =-10mA, I <sub>B</sub> =0              | -45    |       | V    |
| Emitter-base breakdown voltage       | V(BR)EBO             | I <sub>E</sub> =-1μA, I <sub>C</sub> =0               | -5     |       | V    |
| Collector cut-off current            | I <sub>CBO</sub>     | V <sub>CB</sub> =-45V, I <sub>E</sub> =0              |        | -100  | nA   |
| Emitter cut-off current              | I <sub>EBO</sub>     | V <sub>EB</sub> =-4V, I <sub>C</sub> =0               |        | -100  | nA   |
| DC current gain                      | h <sub>FE</sub> (1)  | V <sub>CE</sub> =-1V, I <sub>C</sub> =-100mA          | 100    | 600   |      |
|                                      | h <sub>FE</sub> (2)  | V <sub>CE</sub> =-1V, I <sub>C</sub> =-500mA          | 40     |       |      |
| Collector-emitter saturation voltage | V <sub>CE(sat)</sub> | I <sub>C</sub> =-500mA, I <sub>B</sub> =-50mA         |        | -0.70 | V    |
| Base -emitter saturation voltage     | V <sub>BE(sat)</sub> | I <sub>C</sub> =-500mA, I <sub>B</sub> =-50mA         |        | -1.20 | V    |
| Transition frequency                 | f <sub>t</sub>       | V <sub>CE</sub> =-5V, I <sub>C</sub> =-10mA, f=100MHz | 100    |       | MHz  |

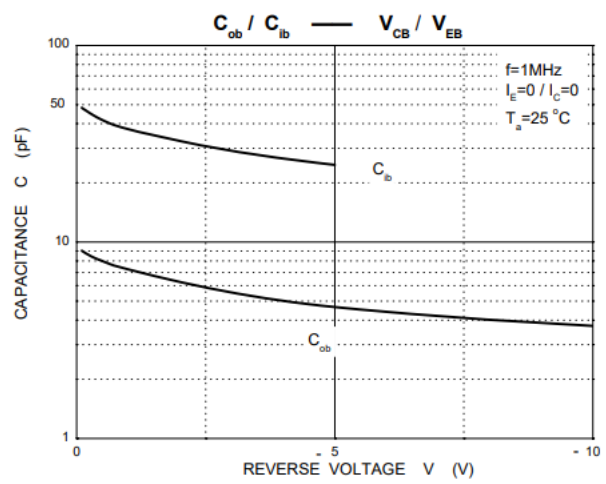
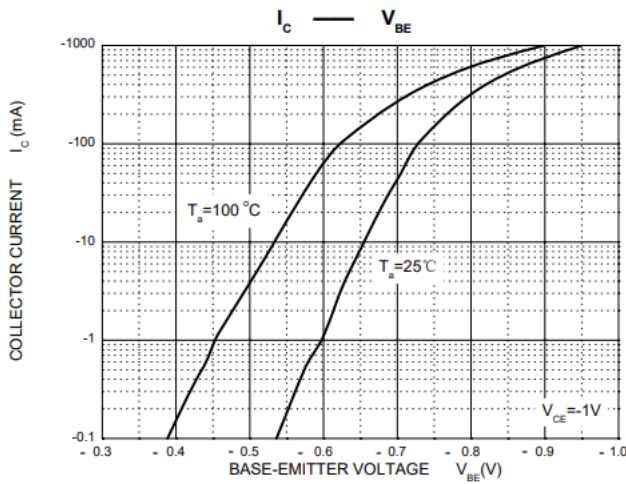
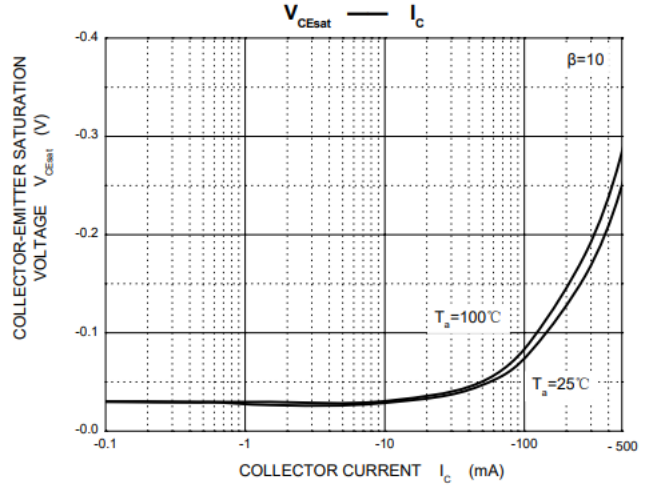
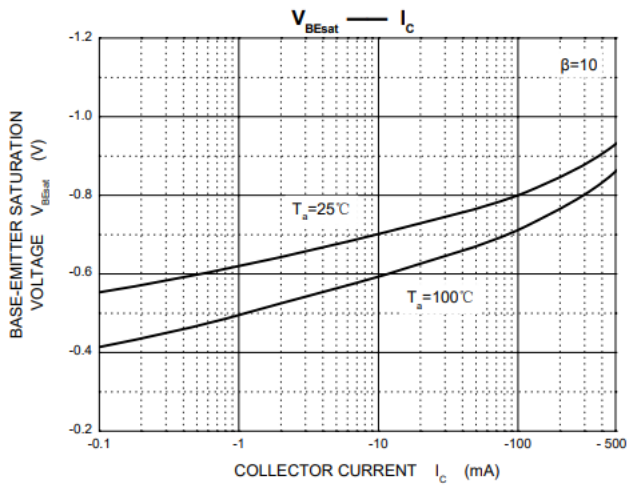
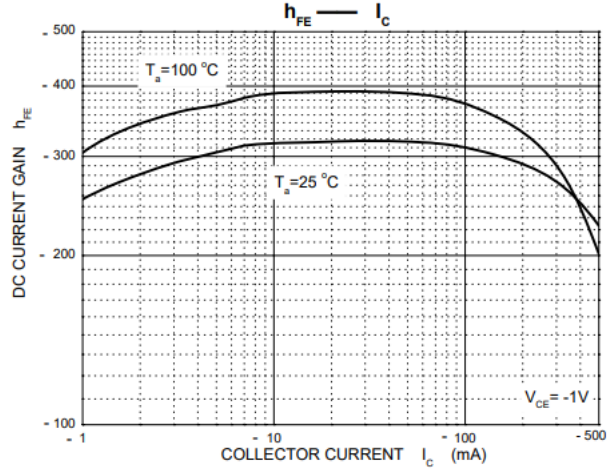
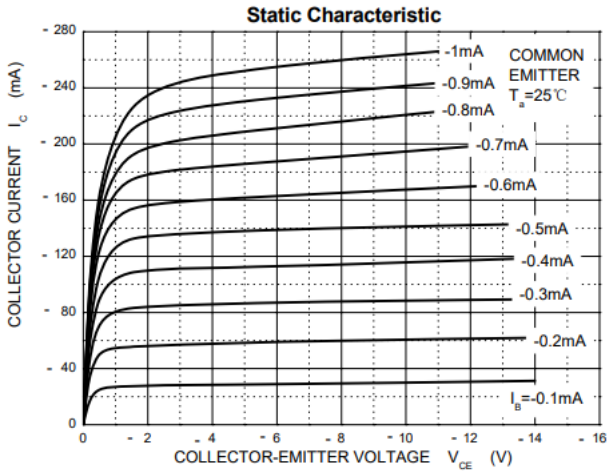
### CLASSIFICATION OF h<sub>FE</sub>(1)

| RANK    | BC807-16 | BC807-25 | BC807-40 |
|---------|----------|----------|----------|
| RANGE   | 100-250  | 160-400  | 250-600  |
| Marking | 5A       | 5B       | 5C       |



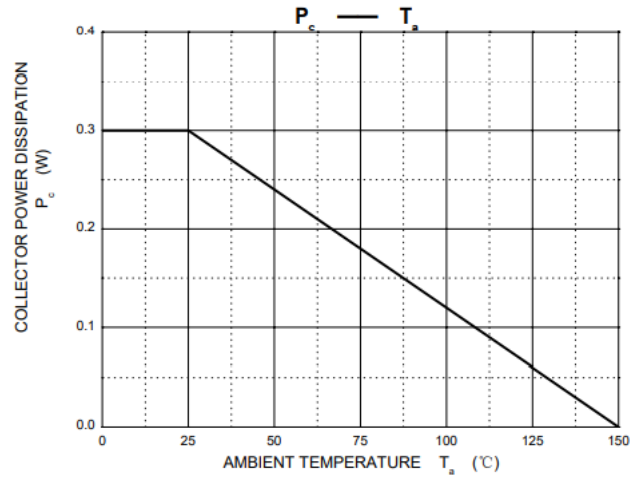
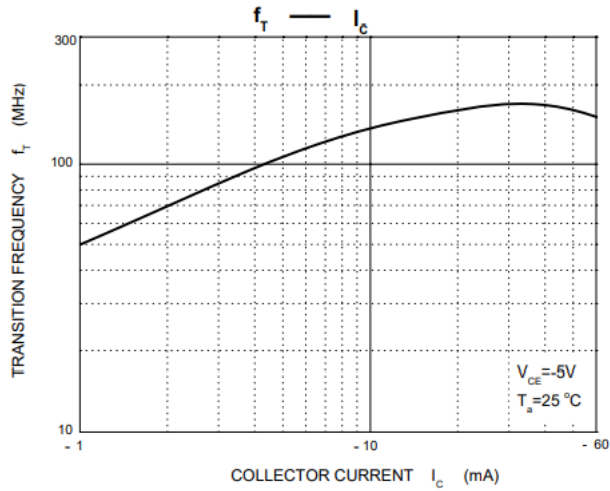
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## RATING AND CHARACTERISTIC CURVES

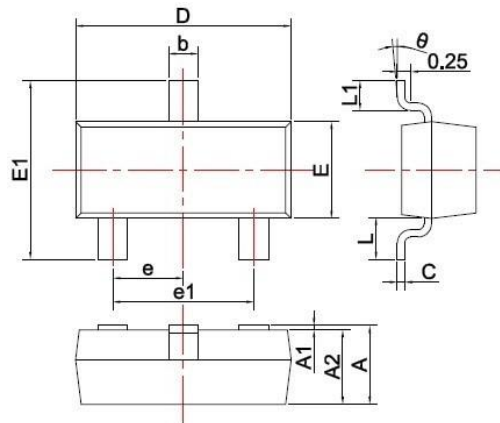




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## SOT-23 PACKAGE OUTLINE Plastic surface mounted package

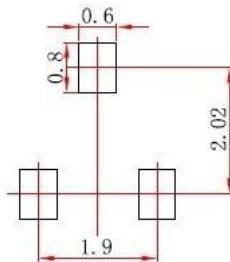


| SYMBOL | DIMENSIONS |       |
|--------|------------|-------|
|        | MIN        | MAX   |
| A      | 0.900      | 1.150 |
| A1     | 0.000      | 0.100 |
| A2     | 0.900      | 1.050 |
| b      | 0.300      | 0.500 |
| c      | 0.080      | 0.150 |
| D      | 2.800      | 3.000 |
| E      | 1.200      | 1.400 |
| E1     | 2.250      | 2.550 |
| e      | 0.950TYP   |       |
| e1     | 1.800      | 2.000 |
| L      | 0.550REF   |       |
| L1     | 0.300      | 0.500 |
| H      | 0°         | 8°    |

Unit: mm

### Precautions: PCB Design

Recommended land dimensions for SOT-23 diode. Electrode patterns for PCBs



**Note:**

1. Controlling dimension: In millimeters.
2. General tolerance: ±0.05mm.
3. The pad layout is for reference purposes only.

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