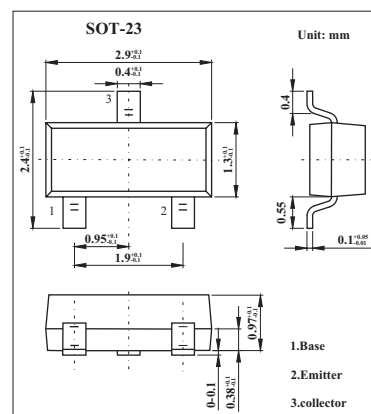


## NPN Transistor

### BC848B

#### ■ Features

- Ideally suited for automatic insertion
- For Switching and AF Amplifier Applications



#### ■ Absolute Maximum Ratings Ta = 25°C

| Parameter                     | Symbol           | Rating      | Unit |
|-------------------------------|------------------|-------------|------|
| Collector-Base Voltage        | V <sub>CB0</sub> | 80          | V    |
|                               |                  | 50          |      |
|                               |                  | 30          |      |
| Collector-Emitter Voltage     | V <sub>CE0</sub> | 65          | V    |
|                               |                  | 45          |      |
|                               |                  | 30          |      |
| Emitter-Base Voltage          | V <sub>EB0</sub> | 6           | V    |
| Collector Current -Continuous | I <sub>C</sub>   | 0.1         | A    |
| Collector Power Dissipation   | P <sub>C</sub>   | 200         | mW   |
| Junction Temperature          | T <sub>J</sub>   | 150         | °C   |
| Storage Temperature           | T <sub>stg</sub> | -65 to +150 | °C   |

■ Electrical Characteristics  $T_a = 25^\circ\text{C}$

| Parameter                            | Symbol           | Testconditions                                                   | Min | Typ | Max | Unit          |
|--------------------------------------|------------------|------------------------------------------------------------------|-----|-----|-----|---------------|
| Collector-base breakdown voltage     | BC846            | $I_C = 10\ \mu\text{A}$ , $I_E = 0$                              | 80  |     |     | V             |
|                                      | BC847            |                                                                  | 50  |     |     |               |
|                                      | BC848            |                                                                  | 30  |     |     |               |
| Collector-emitter breakdown voltage  | BC846            | $I_C = 10\text{mA}$ , $I_B = 0$                                  | 65  |     |     | V             |
|                                      | BC847            |                                                                  | 45  |     |     |               |
|                                      | BC848            |                                                                  | 30  |     |     |               |
| Emitter-base Breakdown voltage       | $V_{EBO}$        | $I_E = 10\ \mu\text{A}$ , $I_C = 0$                              | 6   |     |     | V             |
| Collector-base cutoff current        | BC846            | $V_{CB} = 70\text{V}$ , $I_E = 0$                                |     |     | 0.1 | $\mu\text{A}$ |
|                                      | BC847            | $V_{CB} = 50\text{V}$ , $I_E = 0$                                |     |     |     |               |
|                                      | BC848            | $V_{CB} = 30\text{V}$ , $I_E = 0$                                |     |     |     |               |
| Collector-emitter cutoff current     | BC846            | $V_{CE} = 70\text{V}$ , $I_B = 0$                                |     |     | 0.1 | $\mu\text{A}$ |
|                                      | BC847            | $V_{CE} = 50\text{V}$ , $I_B = 0$                                |     |     |     |               |
|                                      | BC848            | $V_{CE} = 30\text{V}$ , $I_B = 0$                                |     |     |     |               |
| Emitter-base cutoff current          | $I_{EBO}$        | $V_{EB} = 5\text{V}$ , $I_C = 0$                                 |     |     | 0.1 | $\mu\text{A}$ |
| DC current gain                      | BC846A,847A,848A | $V_{CE} = 5\text{V}$ , $I_C = 2\text{mA}$                        | 110 |     | 220 |               |
|                                      | BC846B,847B,848B |                                                                  | 200 |     | 450 |               |
|                                      | BC847C,848C      |                                                                  | 420 |     | 800 |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$    | $I_C = 100\text{mA}$ , $I_B = 5\text{mA}$                        |     |     | 0.5 | V             |
| Base-emitter saturation voltage      | $V_{BE(sat)}$    | $I_C = 100\text{mA}$ , $I_B = 5\text{mA}$                        |     |     | 1.1 | V             |
| Collector output capacitance         | $C_{ob}$         | $V_{CB} = 10\text{V}$ , $f = 1\text{MHz}$                        |     |     | 4.5 | pF            |
| Transition frequency                 | $f_T$            | $V_{CE} = 5\text{V}$ , $I_C = 10\text{mA}$ , $f = 100\text{MHz}$ | 100 |     |     | MHz           |

■ Marking

|         |        |        |
|---------|--------|--------|
| NO.     | BC846A | BC846B |
| Marking | 1A     | 1B     |

|         |        |        |        |
|---------|--------|--------|--------|
| NO.     | BC847A | BC847B | BC847C |
| Marking | 1E     | 1F     | 1G     |

|         |        |        |        |
|---------|--------|--------|--------|
| NO.     | BC848A | BC848B | BC848C |
| Marking | 1J     | 1K     | 1L     |

■ Typical Characteristics

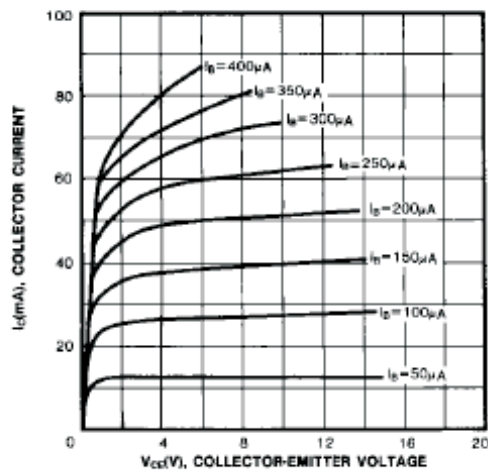


Fig.1 Static Characteristic

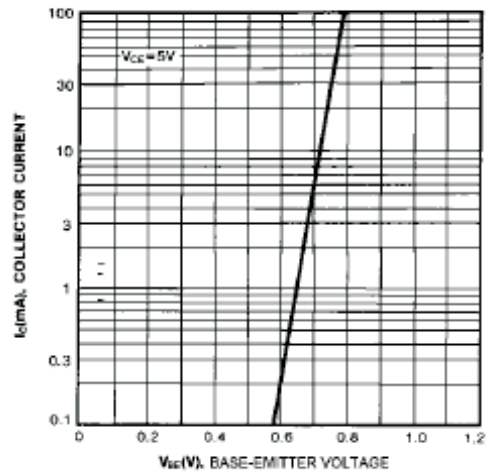


Fig.2 Transfer Characteristic

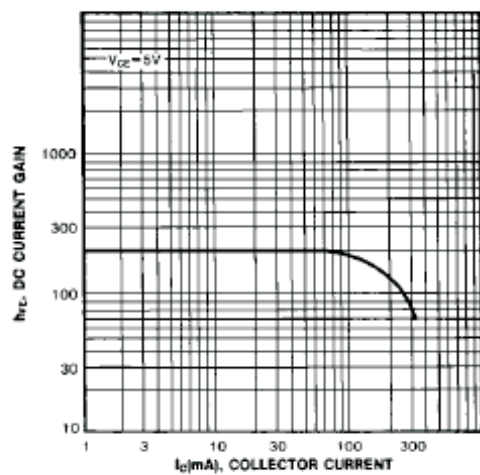


Fig.3 DC Current Gain

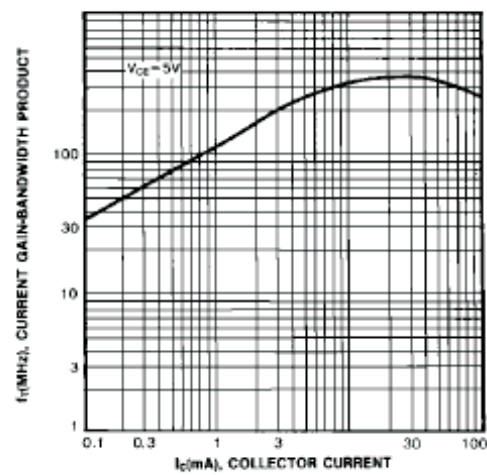


Fig.4 Current Gain Bandwidth Product

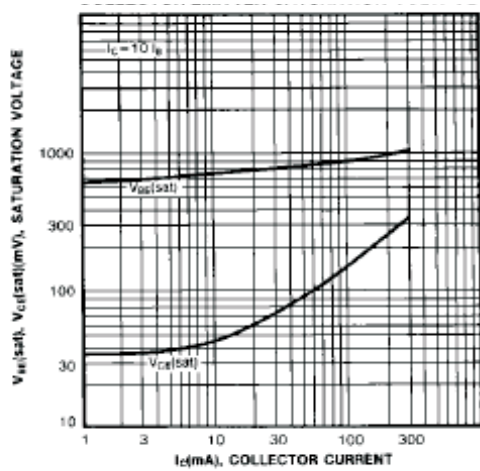


Fig.5 Base Emitter Saturation Voltage  
Collector Emitter Saturation Voltage

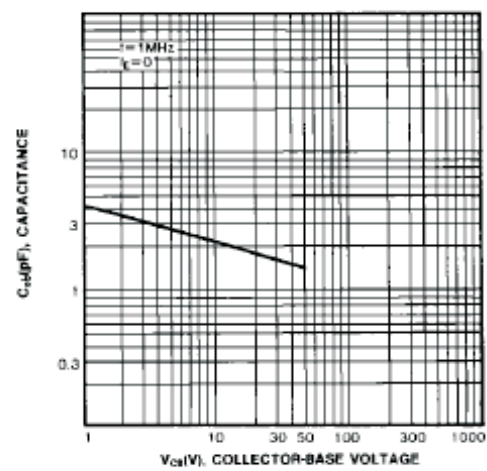


Fig.6 Output Capacitance