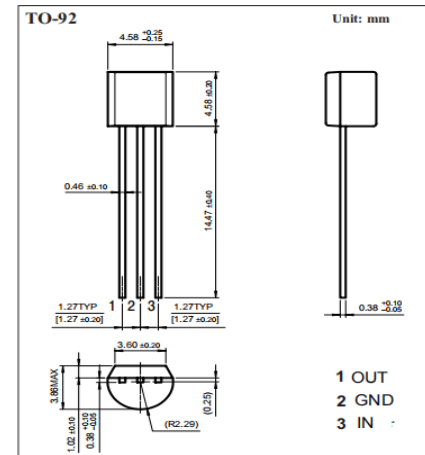


## PNP Transistor

### BC856B

#### ■ 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>CBO</sub> | -80         | V    |
|                               |                  | -50         |      |
|                               |                  | -30         |      |
| Collector-Emitter Voltage     | V <sub>CEO</sub> | -65         | V    |
|                               |                  | -45         |      |
|                               |                  | -30         |      |
| Emitter-Base Voltage          | V <sub>EBO</sub> | -5          | 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     | BC856<br>BC857<br>BC858                                    | $I_c = -10\mu\text{A}$ , $I_E = 0$                                  | -80 |     |      | V              |
|                                      |                                                            |                                                                     | -50 |     |      |                |
|                                      |                                                            |                                                                     | -30 |     |      |                |
| Collector-emitter breakdown voltage  | BC856<br>BC857<br>BC858                                    | $I_c = -10\text{ mA}$ , $I_B = 0$                                   | -65 |     |      | V              |
|                                      |                                                            |                                                                     | -45 |     |      |                |
|                                      |                                                            |                                                                     | -30 |     |      |                |
| Emitter-base breakdown voltage       | $V_{EBO}$                                                  | $I_E = -10\mu\text{A}$ , $I_C = 0$                                  | -5  |     |      | V              |
| Collector cut-off current            | BC856<br>BC857<br>BC858                                    | $V_{CB} = -70\text{ V}$ , $I_E = 0$                                 |     |     | -0.1 | $\mu\text{ A}$ |
|                                      |                                                            | $V_{CB} = -45\text{ V}$ , $I_E = 0$                                 |     |     |      |                |
|                                      |                                                            | $V_{CB} = -25\text{ V}$ , $I_E = 0$                                 |     |     |      |                |
| Collector cut-off current            | BC856<br>BC857<br>BC858                                    | $V_{CE} = -60\text{ V}$ , $I_B = 0$                                 |     |     | -0.1 | $\mu\text{ A}$ |
|                                      |                                                            | $V_{CE} = -40\text{ V}$ , $I_B = 0$                                 |     |     |      |                |
|                                      |                                                            | $V_{CE} = -25\text{ V}$ , $I_B = 0$                                 |     |     |      |                |
| Emitter cut-off current              | $I_{EBO}$                                                  | $V_{EB} = -5\text{ V}$ , $I_C = 0$                                  |     |     | -0.1 | $\mu\text{ A}$ |
| DC current gain                      | BC856A, 857A, 858A<br>BC856B, 857B, 858B<br>BC857C, BC858C | $V_{CE} = -5\text{V}$ , $I_C = -2\text{mA}$                         | 120 |     | 250  |                |
|                                      |                                                            |                                                                     | 220 |     | 475  |                |
|                                      |                                                            |                                                                     | 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 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.     | BC856A | BC856B |
| Marking | 3A     | 3B     |

|         |        |        |        |
|---------|--------|--------|--------|
| NO.     | BC857A | BC857B | BC857C |
| Marking | 3E     | 3F     | 3G     |

|         |        |        |        |
|---------|--------|--------|--------|
| NO.     | BC858A | BC858B | BC858C |
| Marking | 3J     | 3K     | 3L     |

### ■ Typical Characteristics

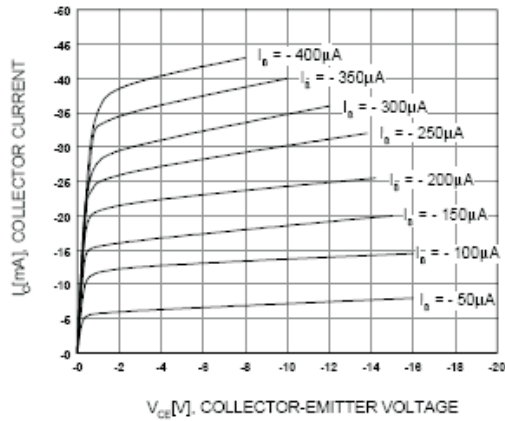


Fig.1 Static Characteristic

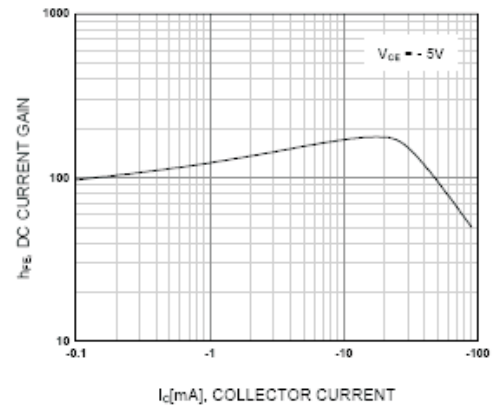


Fig.2 DC Current Gain

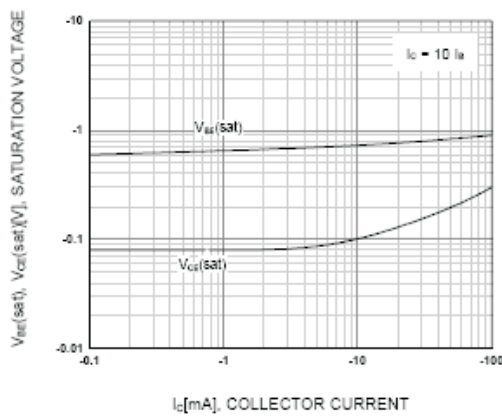


Fig.3 Base Emitter Saturation Voltage  
Collector Emitter Saturation Voltage

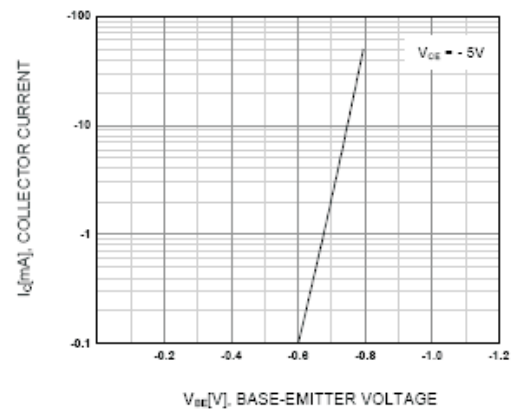


Fig.4 Base Emitter ON Voltage

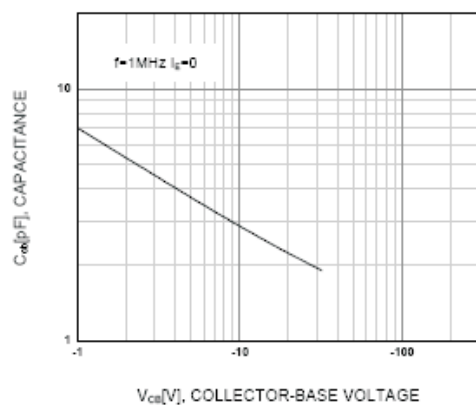


Fig.5 Collector Output Capacitance

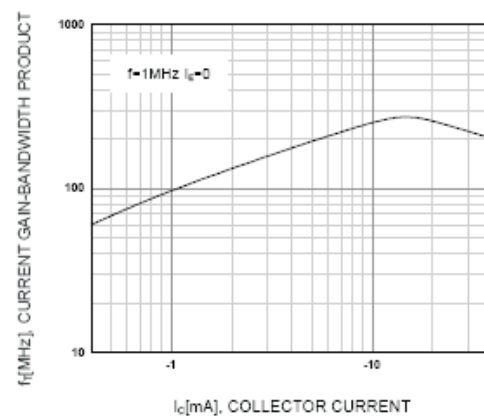


Fig.6 Current Gain Bandwidth Product