

FEATURES

Ideally suited for automatic insertion

For Switching and AF Amplifier Applications

BC856A/B (PNP)
BC857A/B/C (PNP)
BC858A/B/C (PNP)

Marking

| | | | |
|--------|--------|--------|--------|
| BC856A | BC856B | BC857A | BC857B |
| 3A | 3B | 3E | 3F |

| | | | |
|--------|--------|--------|--------|
| BC857C | BC858A | BC858B | BC858C |
| 3G | 3J | 3K | 3L |

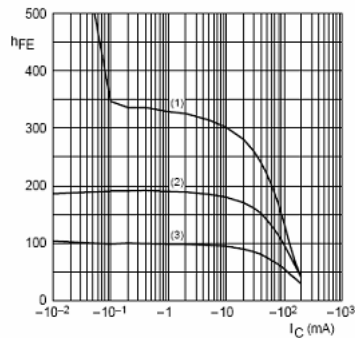

MAXIMUM RATINGS (TA=25°C unless otherwise noted)

| Parameter | | Symbol | Value | Unit |
|-------------------------------|-------|-----------|-------------|------|
| Collector-Base Voltage | BC856 | V_{CBO} | -80 | V |
| | BC857 | V_{CBO} | -50 | |
| | BC858 | V_{CBO} | -30 | |
| Collector-Emitter Voltage | BC856 | V_{CEO} | -65 | V |
| | BC857 | V_{CEO} | -45 | |
| | BC858 | V_{CEO} | -30 | |
| Emitter-Base Voltage | | V_{EBO} | -5 | V |
| Collector Current -Continuous | | I_C | -0.1 | A |
| Collector Power Dissipation | | P_C | 0.2 | W |
| Junction Temperature | | T_J | 150 | °C |
| Storage Temperature | | T_{stg} | -55 to +150 | °C |

ELECTRICAL CHARACTERISTICS ($T_{amb}=25^{\circ}C$ unless otherwise specified)

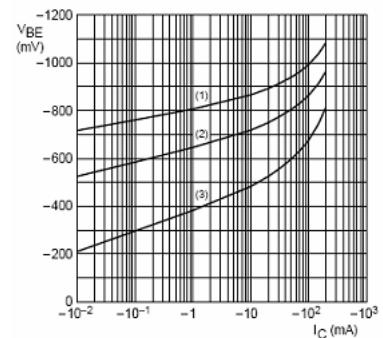
| Parameter | Symbol | Test conditions | Min | Max | Unit |
|--------------------------------------|--|---|-------------------|-------------------|---------|
| Collector-base breakdown voltage | BC856 BC857 BC858 | V_{CBO} $I_C = -10\mu A, I_E = 0$ | -80 -50 -30 | | V |
| Collector-emitter breakdown voltage | BC856 BC857 BC858 | V_{CEO} $I_C = -10mA, I_B = 0$ | -65 -45 -30 | | V |
| Emitter-base breakdown voltage | | V_{EBO} $I_E = -1\mu A, I_C = 0$ | -5 | | V |
| Collector cut-off current | BC856 BC857 BC858 | I_{CBO} $V_{CB} = -70V, I_E = 0$ $V_{CB} = -45V, I_E = 0$ $V_{CB} = -25V, I_E = 0$ | | -0.1 | μA |
| Collector cut-off current | BC856 BC857 BC858 | I_{CEO} $V_{CE} = -60V, I_B = 0$ $V_{CE} = -40V, I_B = 0$ $V_{CE} = -25V, I_B = 0$ | | -0.1 | μA |
| Emitter cut-off current | | I_{EBO} $V_{EB} = -5V, I_C = 0$ | | -0.1 | μA |
| DC current gain | BC856A, 857A, 858A BC856B, 857B, 858B BC857C, BC858C | h_{FE} $V_{CE} = -5V, I_C = -2mA$ | 125 220 420 | 250 475 800 | |
| Collector-emitter saturation voltage | | $V_{CE(sat)}$ $I_C = -100mA, I_B = -5mA$ | | -0.5 | V |
| Base-emitter saturation voltage | | $V_{BE(sat)}$ $I_C = -100mA, I_B = -5mA$ | | -1.1 | V |
| Transition frequency | | f_T $V_{CE} = -5V, I_C = -10mA$ $f = 100MHz$ | 100 | | MHz |
| Collector capacitance | | C_{ob} $V_{CB} = -10V, f = 1MHz$ | | 4.5 | pF |

BC856A/B
BC857A/B/C Typical Characteristics
BC858A/B/C



BC857A; $V_{CE} = -5V$.
(1) $T_{amb} = 150^{\circ}C$.
(2) $T_{amb} = 25^{\circ}C$.
(3) $T_{amb} = -55^{\circ}C$.

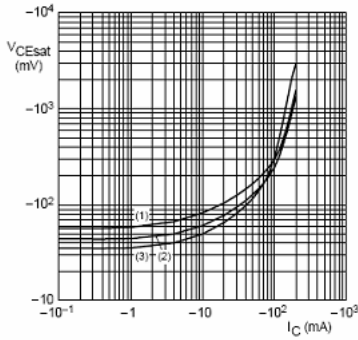
Fig.2 DC current gain as a function of collector current; typical values.



BC857A; $V_{CE} = -5V$.
(1) $T_{amb} = -55^{\circ}C$.
(2) $T_{amb} = 25^{\circ}C$.
(3) $T_{amb} = 150^{\circ}C$.

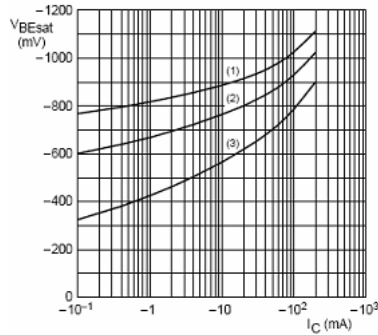
Fig.3 Base-emitter voltage as a function of collector current; typical values.

BC856A/B
BC857A/B/C Typical Characteristics
BC858A/B/C



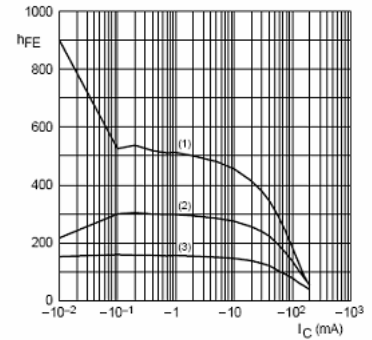
BC857A; $I_C/I_B = 20$.
(1) $T_{amb} = 150\text{ }^\circ\text{C}$.
(2) $T_{amb} = 25\text{ }^\circ\text{C}$.
(3) $T_{amb} = -55\text{ }^\circ\text{C}$.

Fig.4 Collector-emitter saturation voltage as a function of collector current; typical values.



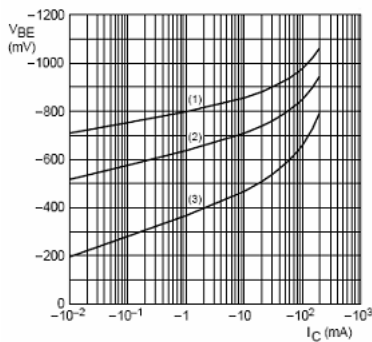
BC857A; $I_C/I_B = 20$.
(1) $T_{amb} = -55\text{ }^\circ\text{C}$.
(2) $T_{amb} = 25\text{ }^\circ\text{C}$.
(3) $T_{amb} = 150\text{ }^\circ\text{C}$.

Fig.5 Base-emitter saturation voltage as a function of collector current; typical values.



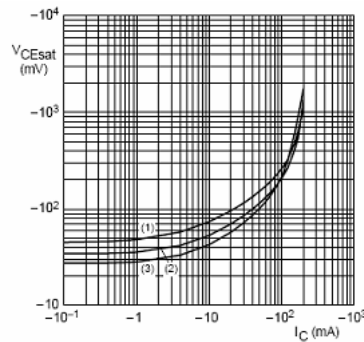
BC857B; $V_{CE} = -5\text{ V}$.
(1) $T_{amb} = 150\text{ }^\circ\text{C}$.
(2) $T_{amb} = 25\text{ }^\circ\text{C}$.
(3) $T_{amb} = -55\text{ }^\circ\text{C}$.

Fig.6 DC current gain as a function of collector current; typical values.



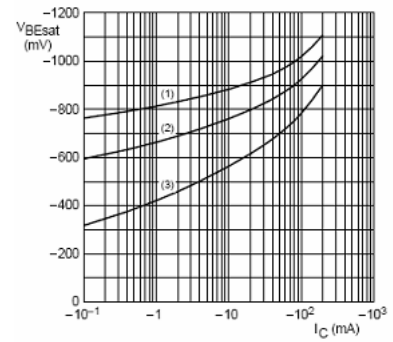
BC857B; $V_{CE} = -5\text{ V}$.
(1) $T_{amb} = -55\text{ }^\circ\text{C}$.
(2) $T_{amb} = 25\text{ }^\circ\text{C}$.
(3) $T_{amb} = 150\text{ }^\circ\text{C}$.

Fig.7 Base-emitter voltage as a function of collector current; typical values.



BC857B; $I_C/I_B = 20$.
(1) $T_{amb} = 150\text{ }^\circ\text{C}$.
(2) $T_{amb} = 25\text{ }^\circ\text{C}$.
(3) $T_{amb} = -55\text{ }^\circ\text{C}$.

Fig.8 Collector-emitter saturation voltage as a function of collector current; typical values.



BC857B; $I_C/I_B = 20$.
(1) $T_{amb} = -55\text{ }^\circ\text{C}$.
(2) $T_{amb} = 25\text{ }^\circ\text{C}$.
(3) $T_{amb} = 150\text{ }^\circ\text{C}$.

Fig.9 Base-emitter saturation voltage as a function of collector current; typical values.