



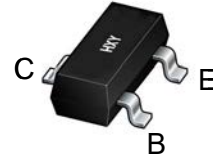
Features

- Collector Current: $I_C = -0.1A$
- Power Dissipation of 200mw

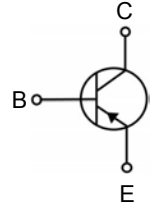
Package Marking and Ordering Information

| Product ID | Pack | Marking | Qty(PCS) |
|-----------------------|--------|---------|----------|
| BC856/BC857/ BC858 | SOT-23 | 3x | 3000 |

x:BC856A=A; BC856B=B;
BC857A=E; BC857B=F; BC857C=G;
BC858A=J; BC858B=K; BC858C=L.



SOT-23



Maxmim Ratings (Ta=25 unless otherwise noted)

| Symbl | Parameter | Value | Unit | |
|------------------|------------------------------|---------|------|---|
| V _{CBO} | Collector-Base Voltage | BC856 | -80 | V |
| | | BC857 | -50 | |
| | | BC858 | -30 | |
| V _{CEO} | Collector-Emitter Voltage | BC856 | -65 | V |
| | | BC857 | -45 | |
| | | BC858 | -30 | |
| V _{EBO} | Emitter-Base Voltage | -5 | V | |
| I _C | Collector Current-Continuous | -0.1 | A | |
| P _C | Collector Power Dissipation | 200 | mW | |
| T _j | Junction Temperature | 150 | °C | |
| T _{stg} | Storage Temperature | -55-150 | °C | |

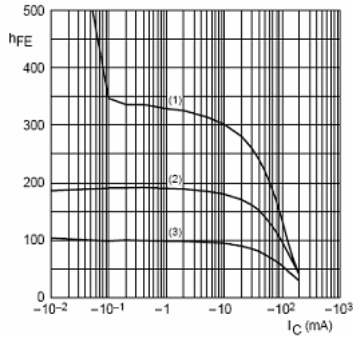


Electrcal Charcteristics (Ta=25 unless otherwise specified)

| Parameter | Symbol | Test conditions | Min | Max | Unit |
|--|----------|---|-------------------|-------------------|------|
| Collector-base breakdown voltage BC856 BC857 BC858 | VCBO | IC= -10μA, IE=0 | -80 -50 -30 | | V |
| Collector-emitter breakdown voltage BC856 BC857 BC858 | VCEO | IC= -10mA, IB=0 | -65 -45 -30 | | V |
| Emitter-base breakdown voltage | VEBO | IE= -1μA, IC=0 | -5 | | V |
| Collector cut-off current BC856 BC857 BC858 | ICBO | VCB= -70 V , IE=0 VCB= -45 V , IE=0 VCB= -25 V , IE=0 | | -0.1 | μA |
| Collector cut-off current BC856 BC857 BC858 | ICEO | VCE= -60 V , IB=0 VCE= -40 V , IB=0 VCE= -25 V , IB=0 | | -0.1 | μA |
| Emitter cut-off current | IEBO | VEB= -5 V , IC=0 | | -0.1 | μA |
| DC current gain BC856A,857A,858A BC856B,857B,858B BC857C,BC858C | hFE | VCE= -5V, IC= -2mA | 125 220 420 | 250 475 800 | |
| Collector-emitter saturation voltage | VCE(sat) | IC=-100mA, IB= -5 mA | | -0.5 | V |
| Base-emitter saturation voltage | VBE(sat) | IC= -100mA, IB= -5mA | | -1.1 | V |
| Transition frequency | fT | VCE= -5 V, IC= -10mA f=100MHz | 100 | | MHz |
| Collector capacitance | Cob | VCB=-10V, f=1MHz | | 4.5 | pF |

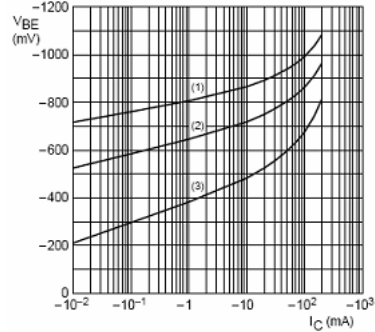


Typical Characteristics



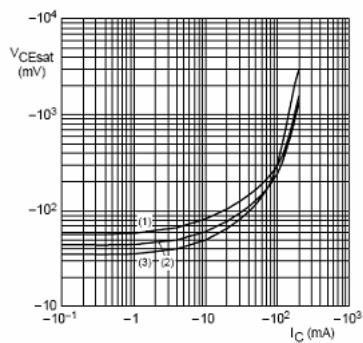
BC857A; $V_{CE} = -5\text{ V}$.
(1) $T_{amb} = 150\text{ }^{\circ}\text{C}$.
(2) $T_{amb} = 25\text{ }^{\circ}\text{C}$.
(3) $T_{amb} = -55\text{ }^{\circ}\text{C}$.

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



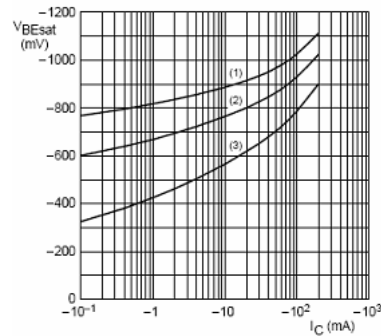
BC857A; $V_{CE} = -5\text{ V}$.
(1) $T_{amb} = -55\text{ }^{\circ}\text{C}$.
(2) $T_{amb} = 25\text{ }^{\circ}\text{C}$.
(3) $T_{amb} = 150\text{ }^{\circ}\text{C}$.

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



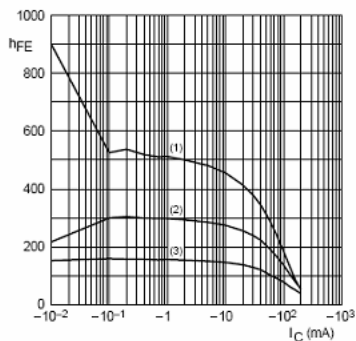
BC857A; $I_C/I_B = 20$.
(1) $T_{amb} = 150\text{ }^{\circ}\text{C}$.
(2) $T_{amb} = 25\text{ }^{\circ}\text{C}$.
(3) $T_{amb} = -55\text{ }^{\circ}\text{C}$.

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



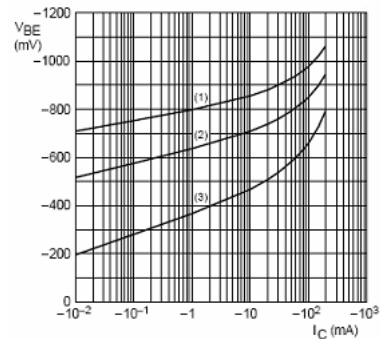
BC857A; $I_C/I_B = 20$.
(1) $T_{amb} = -55\text{ }^{\circ}\text{C}$.
(2) $T_{amb} = 25\text{ }^{\circ}\text{C}$.
(3) $T_{amb} = 150\text{ }^{\circ}\text{C}$.

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



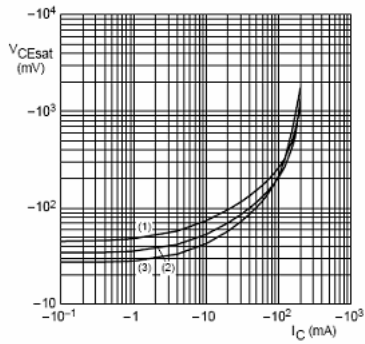
BC857B; $V_{CE} = -5\text{ V}$.
(1) $T_{amb} = 150\text{ }^{\circ}\text{C}$.
(2) $T_{amb} = 25\text{ }^{\circ}\text{C}$.
(3) $T_{amb} = -55\text{ }^{\circ}\text{C}$.

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



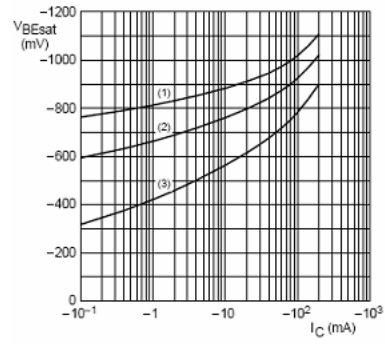
BC857B; $V_{CE} = -5\text{ V}$.
(1) $T_{amb} = -55\text{ }^{\circ}\text{C}$.
(2) $T_{amb} = 25\text{ }^{\circ}\text{C}$.
(3) $T_{amb} = 150\text{ }^{\circ}\text{C}$.

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



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

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

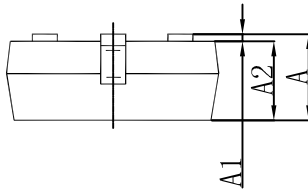
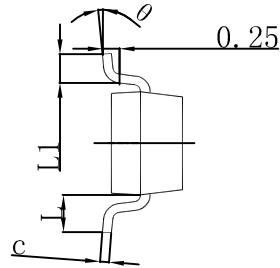
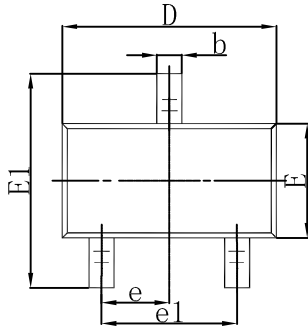


BC857B; $I_C/I_B = 20$.
(1) $T_{amb} = -55^\circ\text{C}$.
(2) $T_{amb} = 25^\circ\text{C}$.
(3) $T_{amb} = 150^\circ\text{C}$.

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

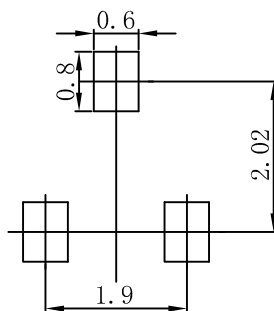


Package Dimensions SOT-23



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|-------|----------------------|-------|
| | Min | Max | Min | Max |
| A | 0.900 | 1.150 | 0.035 | 0.045 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.050 | 0.035 | 0.041 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.800 | 3.000 | 0.110 | 0.118 |
| E | 1.200 | 1.400 | 0.047 | 0.055 |
| E1 | 2.250 | 2.550 | 0.089 | 0.100 |
| e | 0.950 TYP | | 0.037 TYP | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.550 REF | | 0.022 REF | |
| L1 | 0.300 | 0.500 | 0.012 | 0.020 |
| θ | 0° | 8° | 0° | 8° |

Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.



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