

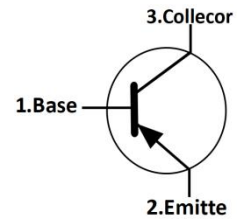
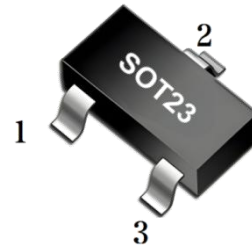


# BC856/857/858

## PNP SILICON TRANSISTOR

### FEATURES

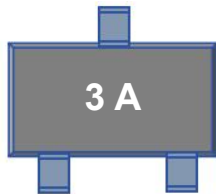
- \*Ideally suited for automatic insertion
- \*For switching and AF amplifier applications



### MARKING

| BC856 | BC857    | BC858    |
|-------|----------|----------|
| 3A/3B | 3E/3F/3G | 3J/3K/3L |

Type Code: Marking: **3 A**



### ABSOLUTE MAXIMUM RATINGS (Tc=25°C, unless otherwise specified)

| SYMBOL           | PARAMETER                                   | VALUE   | UNIT |   |
|------------------|---|---------|------|---|
| V <sub>CB0</sub> | Collector-base voltage                      | BC856   | -80  | V |
|                  |   | BC857   | -50  | V |
|                  |   | BC858   | -30  | V |
| V <sub>CE0</sub> | Collector-emitter voltage                   | BC856   | -65  | V |
|                  |   | BC857   | -45  | V |
|                  |   | BC858   | -30  | V |
| V <sub>EB0</sub> | Emitter-base voltage                        | -5      | V    |   |
| I <sub>c</sub>   | Collector Current-Continuous                | -0.1    | A    |   |
| P <sub>c</sub>   | Collector Power Dissipation                 | 0.2     | W    |   |
| T <sub>j</sub>   | Junction Temperature                        | 150     | °C   |   |
| T <sub>stg</sub> | Storage Temperature                         | -55~150 | °C   |   |
| ROJA             | Thermal Resistance From Junction To Ambient | 625     | °C/W |   |

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.



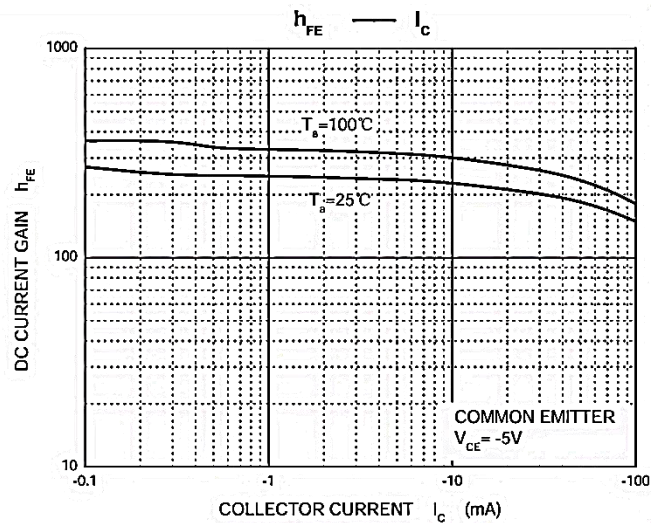
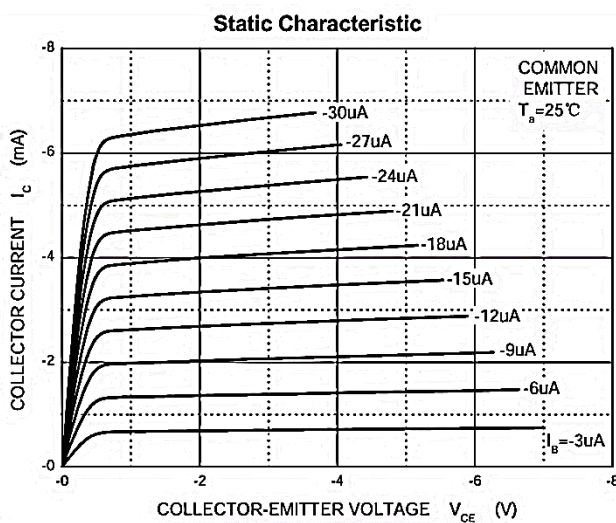
# BC856/857/858

# PNP SILICON TRANSISTOR

## ELECTRICAL CHARACTERISTICS (Tc=25°C, unless otherwise specified)

| PARAMETER                            |                  | SYMBOL        | TEST CONDITIONS                         | MIN  | MAX  | UNIT    |
|--------------------------------------|------------------|---------------|---|------|------|---------|
| Collector-emitter breakdown voltage  | BC856            | $V_{(BR)CBO}$ | $I_C = -10\mu A, I_E = 0$               | -80  |      | V       |
|                                      | BC857            |               |   | -50  |      | V       |
|                                      | BC858            |               |   | -30  |      | V       |
| Collector-base breakdown voltage     | BC856            | $V_{(BR)CEO}$ | $I_C = -10mA, I_B = 0$                  | -65  |      | V       |
|                                      | BC857            |               |   | -45  |      | V       |
|                                      | BC858            |               |   | -30  |      | V       |
| Emitter-base breakdown voltage       |                  | $V_{(BR)EBO}$ | $I_E = -10\mu A, I_C = 0$               | -5   |      | V       |
| Collector cut-off current            | BC856            | $I_{CBO}$     | $V_{CB} = -70V, I_E = 0$                |      |      | $\mu A$ |
|                                      | BC857            |               | $V_{CB} = -45V, I_E = 0$                | -0.1 |      | $\mu A$ |
|                                      | BC858            |               | $V_{CB} = -25V, I_E = 0$                |      |      | $\mu A$ |
| Emitter cut-off current              |                  | $I_{EBO}$     | $V_{EB} = -5V, I_C = 0$                 |      | -0.1 | $\mu A$ |
| DC Current Gain                      | BC856A/857E/858J | $h_{FE}$      | $V_{CE} = -5V, I_C = -2mA$              | 125  | 250  |         |
|                                      | BC856B/857F/858K |               |   | 220  | 475  |         |
|                                      | BC857G/858L      |               |   | 420  | 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 output capacitance         |                  | $C_{ob}$      | $V_{CB} = -10V, f = 1MHz$               |      | 4.5  | pF      |

## TYPICAL CHARACTERISTICS

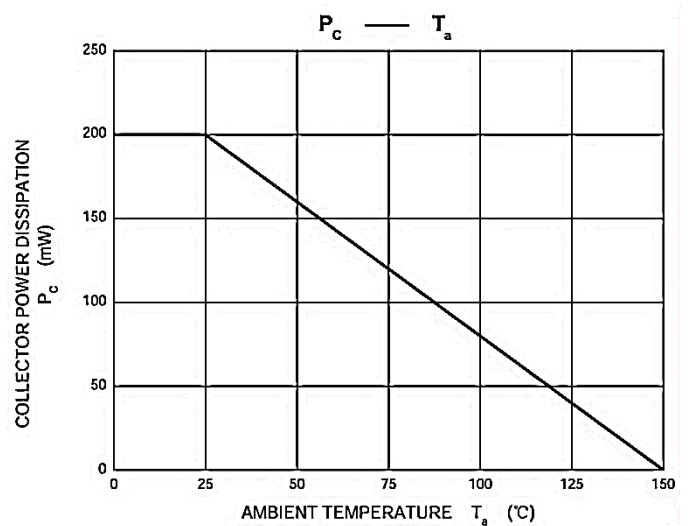
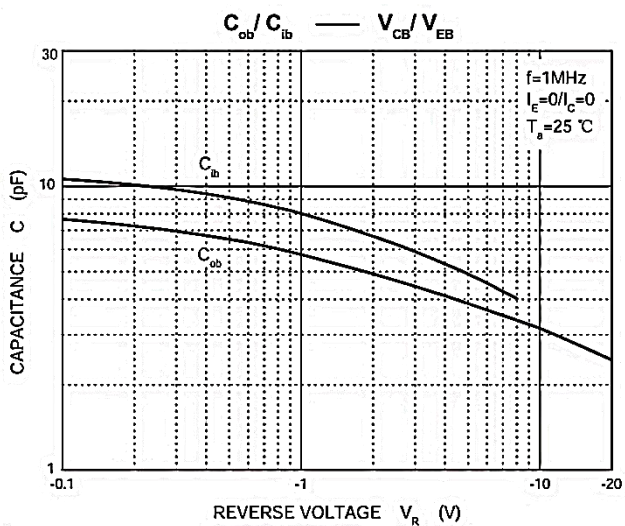
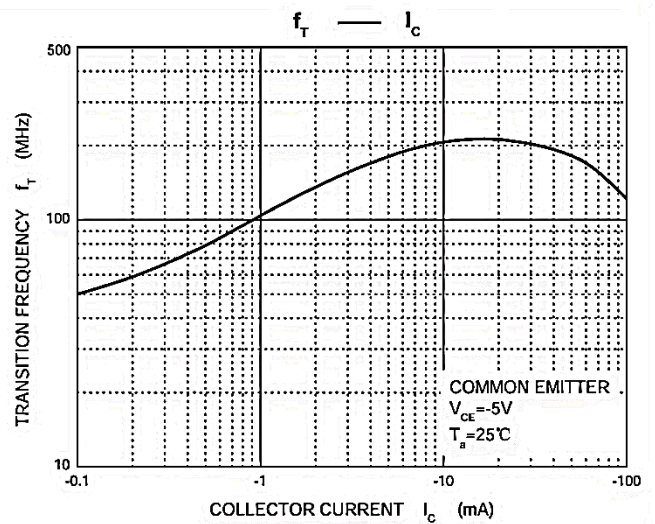
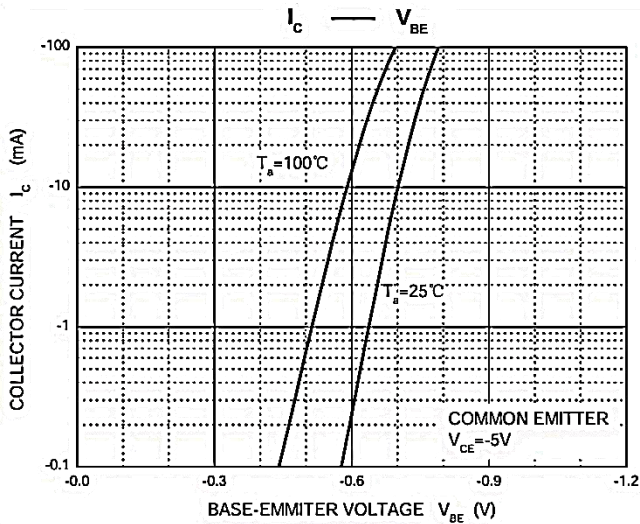
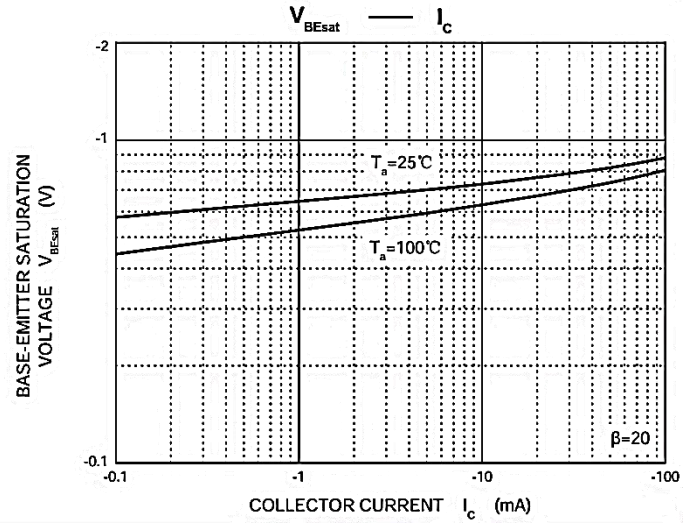
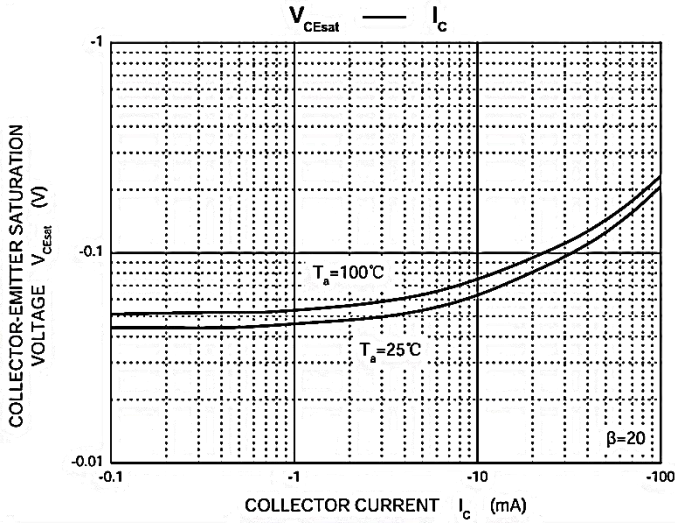




# BC856/857/858

## PNP SILICON TRANSISTOR

### TYPICAL CHARACTERISTICS(Con.t)





# BC856/857/858

# PNP SILICON TRANSISTOR

## SOT23 PACKAGE OUTLINE DIMENSIONS

| 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°    |

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

## REEL PACKING

Top cover tape thickness  
0.10 mm (0.004") max. thick

Embossed carrier tape

Trailer Tape  
50±2 Empty Pockets

Components

Leader Tape  
100±2 Empty Pockets

| Dimensions are in millimeter |        |       |       |        |        |       |      |       |               |      |
|------------------------------|--------|-------|-------|--------|--------|-------|------|-------|---------------|------|
| PKG TYPE                     | A      | B     | C     | d      | E      | F     | Po   | P     | P1            | W    |
| SOT-23                       | 3.15   | 2.77  | 1.22  | Φ1.50  | 1.75   | 3.50  | 4.00 | 4.00  | 2.00          | 8.00 |
| Reel Optiom                  | D      | D1    | D2    | G      | H      | I     | W1   | W2    | Q.TY PER REEL |      |
| 7" Dia                       | Φ178.0 | 54.40 | 13.00 | R78.00 | R25.60 | R6.50 | 9.50 | 12.30 | 3000PCS       |      |
| 13" Dia                      | φ330.0 | /     | 13.00 | /      | /      | R6.50 | 9.50 | 12.30 | 10000PCS      |      |