

BC856 SERIES  
BC857 SERIES  
BC858 SERIES

SURFACE MOUNT  
PNP SILICON TRANSISTOR



SOT-23 CASE



www.centrasemi.com

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR BC856, BC857 and BC858 Series types are PNP Silicon Transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for general purpose switching and amplifier applications.

**MARKING CODE: SEE MARKING CODE TABLE ON FOLLOWING PAGE**

Note: Reverse Lead Codes Available, Add "R" to the end of the Part # and Marking Code.

**MAXIMUM RATINGS:** ( $T_A=25^\circ\text{C}$ )

Collector-Base Voltage  
Collector-Emitter Voltage  
Emitter-Base Voltage  
Continuous Collector Current  
Peak Collector Current  
Peak Base Current  
Power Dissipation  
Operating and Storage Junction Temperature  
Thermal Resistance

| SYMBOL         | BC858 | BC857       | BC856 | UNITS              |
|----------------|-------|-------------|-------|--------------------|
| $V_{CBO}$      | 30    | 50          | 80    | V                  |
| $V_{CEO}$      | 30    | 45          | 65    | V                  |
| $V_{EBO}$      |       | 5.0         |       | V                  |
| $I_C$          |       | 100         |       | mA                 |
| $I_{CM}$       |       | 200         |       | mA                 |
| $I_{BM}$       |       | 200         |       | mA                 |
| $P_D$          |       | 350         |       | mW                 |
| $T_J, T_{stg}$ |       | -65 to +150 |       | $^\circ\text{C}$   |
| $\theta_{JA}$  |       | 357         |       | $^\circ\text{C/W}$ |

**ELECTRICAL CHARACTERISTICS:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

| SYMBOL        | TEST CONDITIONS   | MIN | MAX  | UNITS         |
|---------------|---|-----|------|---------------|
| $I_{CBO}$     | $V_{CB}=30\text{V}$   |     | 15   | nA            |
| $I_{CBO}$     | $V_{CB}=30\text{V}, T_A=150^\circ\text{C}$  |     | 4.0  | $\mu\text{A}$ |
| $I_{EBO}$     | $V_{EB}=5.0\text{V}$  |     | 100  | nA            |
| $BV_{CBO}$    | $I_C=10\mu\text{A}$ (BC858)   | 30  |      | V             |
| $BV_{CBO}$    | $I_C=10\mu\text{A}$ (BC857)   | 50  |      | V             |
| $BV_{CBO}$    | $I_C=10\mu\text{A}$ (BC856)   | 80  |      | V             |
| $BV_{CEO}$    | $I_C=10\text{mA}$ (BC858)   | 30  |      | V             |
| $BV_{CEO}$    | $I_C=10\text{mA}$ (BC857)   | 45  |      | V             |
| $BV_{CEO}$    | $I_C=10\text{mA}$ (BC856)   | 65  |      | V             |
| $BV_{EBO}$    | $I_E=10\mu\text{A}$   | 5.0 |      | V             |
| $V_{CE(SAT)}$ | $I_C=10\text{mA}, I_B=0.5\text{mA}$   |     | 0.30 | V             |
| $V_{CE(SAT)}$ | $I_C=100\text{mA}, I_B=5.0\text{mA}$  |     | 0.65 | V             |
| $V_{BE(ON)}$  | $I_C=2.0\text{mA}, V_{CE}=5.0\text{V}$  | 0.6 | 0.75 | V             |
| $V_{BE(ON)}$  | $I_C=10\text{mA}, V_{CE}=5.0\text{V}$   |     | 0.82 | V             |
| $f_T$         | $V_{CE}=5.0\text{V}, I_C=10\text{mA}, f=100\text{MHz}$  | 100 |      | MHz           |
| NF            | $V_{CE}=5.0\text{V}, I_C=200\mu\text{A}, R_S=2.0\text{K}\Omega, f=1.0\text{KHz}, BW=200\text{Hz}$ |     | 10   | dB            |

**BC856A**

**BC857A**

**BC858A**

MIN MAX  
125 250

**BC856B**

**BC857B**

**BC858B**

MIN MAX  
220 475

**BC857C**

**BC858C**

MIN MAX  
420 800

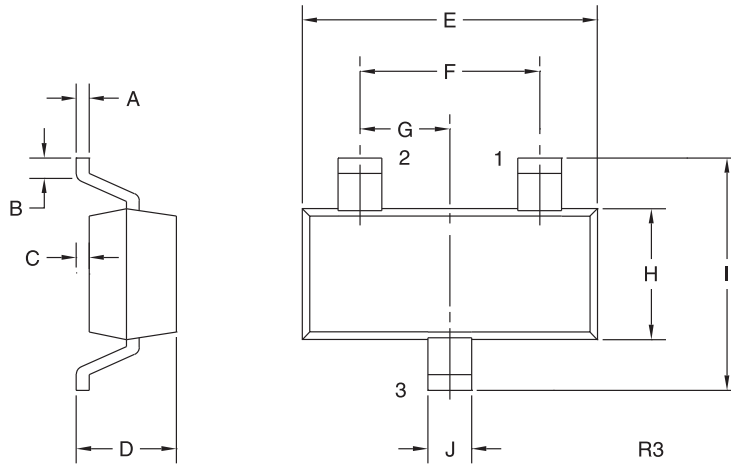
$h_{FE}$   $V_{CE}=5.0\text{V}, I_C=2.0\text{mA}$

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SURFACE MOUNT  
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SOT-23 CASE - MECHANICAL OUTLINE



LEAD CODE:

| STANDARD     | *REVERSE     |
|--------------|--------------|
| 1) BASE      | 1) EMITTER   |
| 2) EMITTER   | 2) BASE      |
| 3) COLLECTOR | 3) COLLECTOR |

| DEVICE | MARKING CODE |
|--------|--------------|
| BC856A | 3A           |
| BC856B | 3B           |
| BC857A | 3E           |
| BC857B | 3F           |
| BC857C | 3G           |
| BC858A | 3J           |
| BC858B | 3K           |
| BC858C | 3L           |

| SYMBOL | INCHES |       | MILLIMETERS |      |
|--------|--------|-------|-------------|------|
|        | MIN    | MAX   | MIN         | MAX  |
| A      | 0.003  | 0.007 | 0.08        | 0.18 |
| B      | 0.006  | -     | 0.15        | -    |
| C      | -      | 0.005 | -           | 0.13 |
| D      | 0.035  | 0.043 | 0.89        | 1.09 |
| E      | 0.110  | 0.120 | 2.80        | 3.05 |
| F      | 0.075  |       | 1.90        |      |
| G      | 0.037  |       | 0.95        |      |
| H      | 0.047  | 0.055 | 1.19        | 1.40 |
| I      | 0.083  | 0.098 | 2.10        | 2.49 |
| J      | 0.014  | 0.020 | 0.35        | 0.50 |

SOT-23 (REV: R3)

\* Reverse Lead Codes Available, Add "R" to the end of the Part # and Marking Code.

R2 (20-November 2009)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2<sup>nd</sup> day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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### REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix " TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix " PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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### CONTACT US

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