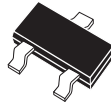


BC856 SERIES  
BC857 SERIES  
BC858 SERIES

SURFACE MOUNT  
PNP SILICON TRANSISTOR



SOT-23 CASE

# Central<sup>TM</sup>

## Semiconductor Corp.

### 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: PLEASE 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<sub>A</sub>=25°C)

|                                            | SYMBOL                            | BC858 | BC857       | BC856 | UNITS |
|--------------------------------------------|-----------------------------------|-------|-------------|-------|-------|
| Collector-Base Voltage                     | V <sub>CBO</sub>                  | 30    | 50          | 80    | V     |
| Collector-Emitter Voltage                  | V <sub>CEO</sub>                  | 30    | 45          | 65    | V     |
| Emitter-Base Voltage                       | V <sub>EBO</sub>                  |       | 5.0         |       | V     |
| Collector Current                          | I <sub>C</sub>                    |       | 100         |       | mA    |
| Peak Collector Current                     | I <sub>CM</sub>                   |       | 200         |       | mA    |
| Peak Base Current                          | I <sub>BM</sub>                   |       | 200         |       | mA    |
| Power Dissipation                          | P <sub>D</sub>                    |       | 350         |       | mW    |
| Operating and Storage Junction Temperature | T <sub>J</sub> , T <sub>stg</sub> |       | -65 to +150 |       | °C    |
| Thermal Resistance                         | Θ <sub>JA</sub>                   |       | 357         |       | °C/W  |

### ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C unless otherwise noted)

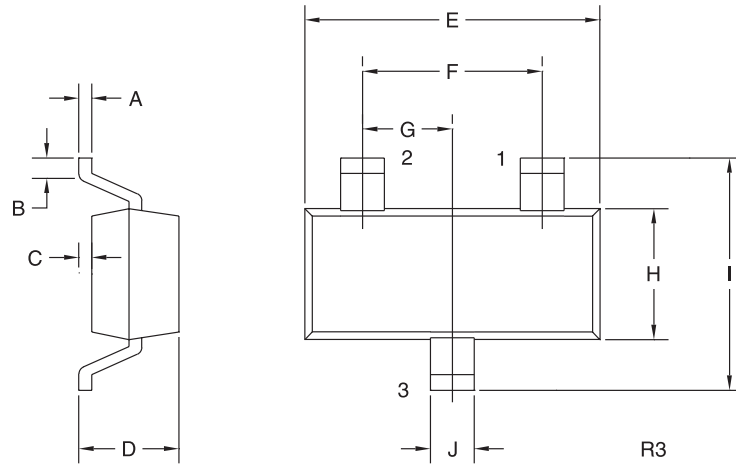
| SYMBOL               | TEST CONDITIONS                                                                      | MIN | TYP | MAX  | UNITS |
|----------------------|--------------------------------------------------------------------------------------|-----|-----|------|-------|
| I <sub>CBO</sub>     | V <sub>CB</sub> = 30V                                                                |     |     | 15   | nA    |
| I <sub>CBO</sub>     | V <sub>CB</sub> = 30V, T <sub>A</sub> =150°C                                         |     |     | 4.0  | μA    |
| I <sub>EBO</sub>     | V <sub>EB</sub> =5.0V                                                                |     |     | 100  | nA    |
| BV <sub>CBO</sub>    | I <sub>C</sub> =10μA (BC858)                                                         | 30  |     |      | V     |
| BV <sub>CBO</sub>    | I <sub>C</sub> =10μA (BC857)                                                         | 50  |     |      | V     |
| BV <sub>CBO</sub>    | I <sub>C</sub> =10μA (BC856)                                                         | 80  |     |      | V     |
| BV <sub>CEO</sub>    | I <sub>C</sub> =10mA (BC858)                                                         | 30  |     |      | V     |
| BV <sub>CEO</sub>    | I <sub>C</sub> =10mA (BC857)                                                         | 45  |     |      | V     |
| BV <sub>CEO</sub>    | I <sub>C</sub> =10mA (BC856)                                                         | 65  |     |      | V     |
| BV <sub>EBO</sub>    | I <sub>E</sub> =10μA                                                                 | 5.0 |     |      | V     |
| V <sub>CE(SAT)</sub> | I <sub>C</sub> =10mA, I <sub>B</sub> =0.5mA                                          |     |     | 0.3  | V     |
| V <sub>CE(SAT)</sub> | I <sub>C</sub> =100mA, I <sub>B</sub> =5.0mA                                         |     |     | 0.65 | V     |
| V <sub>BE(ON)</sub>  | I <sub>C</sub> =2.0mA, V <sub>CE</sub> =5.0V                                         | 0.6 |     | 0.75 | V     |
| V <sub>BE(ON)</sub>  | I <sub>C</sub> =10mA, V <sub>CE</sub> =5.0V                                          |     |     | 0.82 | V     |
| f <sub>T</sub>       | V <sub>CE</sub> =5.0V, I <sub>C</sub> =10mA, f=100MHz                                | 100 |     |      | MHz   |
| NF                   | V <sub>CE</sub> =5.0V, I <sub>C</sub> =200μA, R <sub>S</sub> =2KΩ, f= 1KHz, BW=200Hz |     |     | 10   | dB    |

|                 |                                              | <u>BC856A</u> |     | <u>BC856B</u> |     | <u>BC857C</u> |     |
|-----------------|----------------------------------------------|---------------|-----|---------------|-----|---------------|-----|
|                 |                                              | <u>BC857A</u> |     | <u>BC857B</u> |     | <u>BC858C</u> |     |
|                 |                                              | <u>BC858A</u> |     | <u>BC858B</u> |     | <u>BC858C</u> |     |
|                 |                                              | MIN           | MAX | MIN           | MAX | MIN           | MAX |
| h <sub>FE</sub> | V <sub>CE</sub> =5.0V, I <sub>C</sub> =2.0mA | 125           | 250 | 220           | 475 | 420           | 800 |

R1 (10-September 2004)

**SURFACE MOUNT  
PNP SILICON TRANSISTOR**

**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           |

| DIMENSIONS |        |       |             |      |
|------------|--------|-------|-------------|------|
| 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.

R1 (10-September 2004)