



**THE DATASHEET OF
BC857BR TR PBFREE**



BC856 SERIES
BC857 SERIES
BC858 SERIES

SURFACE MOUNT SILICON
PNP TRANSISTOR



SOT-23 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR BC856, BC857 and BC858 Series devices are silicon PNP 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 | | 330 | | mW |
| T_J, T_{stg} | | -55 to +150 | | $^\circ\text{C}$ |
| θ_{JA} | | 375 | | $^\circ\text{C/W}$ |

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

| SYMBOL | TEST CONDITIONS | MIN | TYP | 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 | μA |
| I_{EBO} | $V_{EB}=5.0\text{V}$ | | | 100 | nA |
| BV_{CBO} | $I_C=10\mu\text{A}$ (BC856) | 80 | | | V |
| BV_{CBO} | $I_C=10\mu\text{A}$ (BC857) | 50 | | | V |
| BV_{CBO} | $I_C=10\mu\text{A}$ (BC858) | 30 | | | V |
| BV_{CEO} | $I_C=10\text{mA}$ (BC856) | 65 | | | V |
| BV_{CEO} | $I_C=10\text{mA}$ (BC857) | 45 | | | V |
| BV_{CEO} | $I_C=10\text{mA}$ (BC858) | 30 | | | V |
| BV_{EBO} | $I_E=1.0\mu\text{A}$ | 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 |
| $V_{BE(SAT)}$ | $I_C=10\text{mA}, I_B=0.5\text{mA}$ | | 0.7 | | V |
| $V_{BE(SAT)}$ | $I_C=100\text{mA}, I_B=5.0\text{mA}$ | | 0.9 | | V |
| $V_{BE(ON)}$ | $V_{CE}=5.0\text{V}, I_C=2.0\text{mA}$ | 0.6 | | 0.75 | V |
| $V_{BE(ON)}$ | $V_{CE}=5.0\text{V}, I_C=10\text{mA}$ | | | 0.82 | V |
| f_T | $V_{CE}=5.0\text{V}, I_C=10\text{mA}, f=100\text{MHz}$ | 100 | 200 | | MHz |
| C_{cb} | $V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$ | | | 4.5 | pF |

BC856A

BC857A

BC858A

MIN MAX
110 220

BC856B

BC857B

BC858B

MIN MAX
220 475

BC857C

BC858C

MIN MAX
420 800

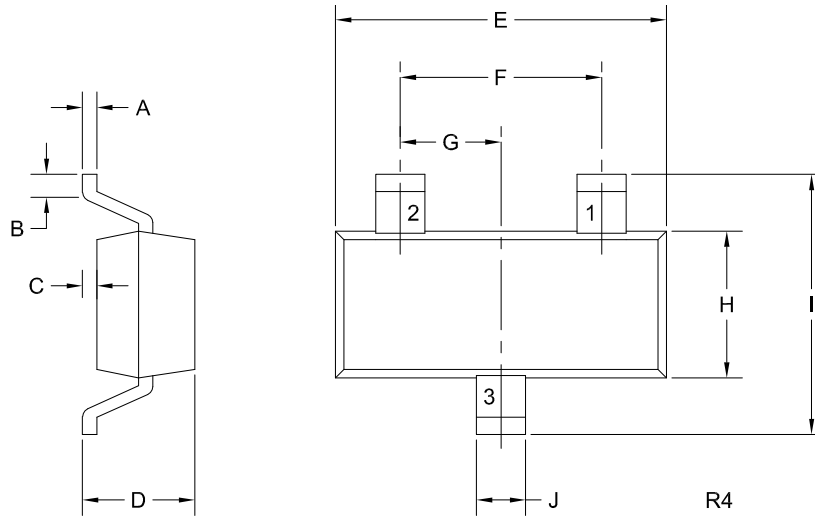
h_{FE} $V_{CE}=5.0\text{V}, I_C=2.0\text{mA}$

BC856 SERIES
BC857 SERIES
BC858 SERIES



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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 |

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

| 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 | 0.044 | 0.89 | 1.12 |
| 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 | 0.104 | 2.10 | 2.64 |
| J | 0.014 | 0.020 | 0.35 | 0.50 |

SOT-23 (REV: R4)

R3 (22-December 2020)

OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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

DESIGNER SUPPORT/SERVICES

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

- Free quick ship samples (2nd 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

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).

CONTACT US

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