

BC856A THRU BC858C

PNP Small Signal Transistor 310mW

Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Ideally Suited for Automatic Insertion
- 150°C Junction Temperature
- For Switching and AF Amplifier Applications

Mechanical Data

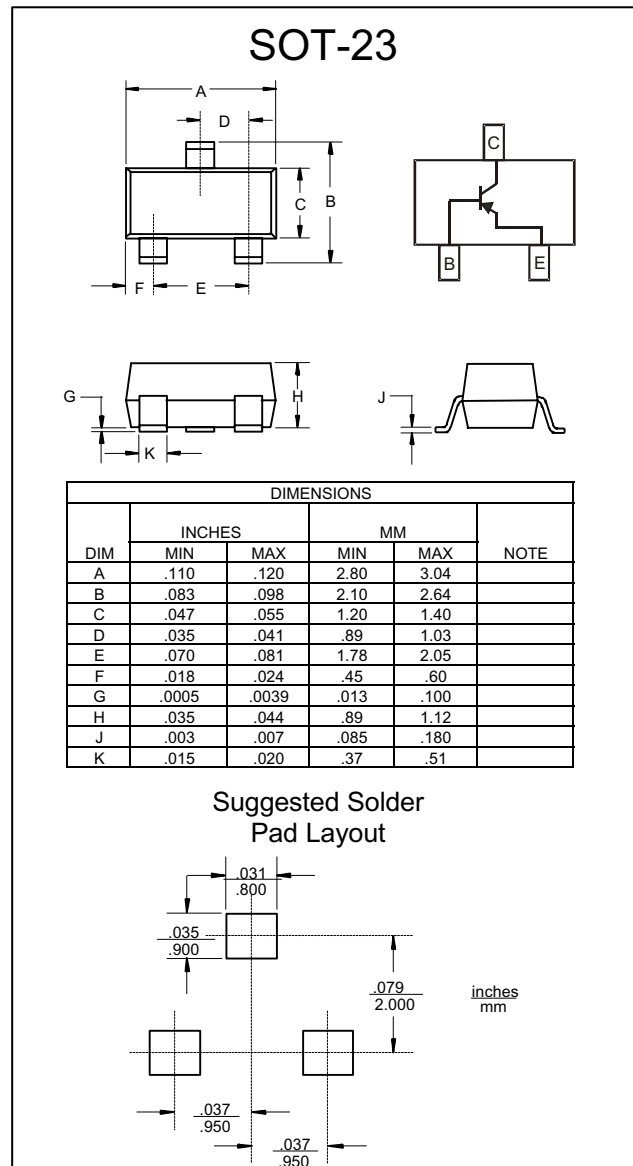
- Case: SOT-23, Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram
- Weight: 0.008 grams (approx.)

| Marking Code (Note 2) | | | |
|-----------------------|---------|--------|---------|
| Type | Marking | Type | Marking |
| BC856A | 3A | BC857C | 3G |
| BC856B | 3B | BC858A | 3J |
| BC857A | 3E | BC858B | 3K |
| BC857B | 3F | BC858C | 3L |

Maximum Ratings @ 25°C Unless Otherwise Specified

| Charateristic | Symbol | Value | Unit |
|---|----------------|---------|------|
| Collector-Base Voltage | BC856 | -80 | V |
| | BC857 | -50 | |
| | BC858 | -30 | |
| Collector-Emitter Voltage | BC856 | -65 | V |
| | BC857 | -45 | |
| | BC858 | -30 | |
| Emitter-Base Voltage | V_{EBO} | -5.0 | V |
| Collector Current | I_C | -100 | mA |
| Peak Collector Current | I_{CM} | -200 | mA |
| Peak Emitter Current | I_{EM} | -200 | mA |
| Power Dissipation@ $T_s=50^\circ\text{C}$ (Note1) | P_d | 310 | mW |
| Operating & Storage Temperature | T_j, T_{STG} | -55~150 | °C |

- Note:**
1. Package mounted on ceramic substrate 0.7mm X 2.5cm² area.
 2. Current gain subgroup " C" is not available for BC856



BC856A thru BC858C

Electrical Characteristics @ T_A = 25°C unless otherwise specified

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition | |
|--|---|---|-----------------------|--|----------------------------|--|---|
| Collector-Base Breakdown Voltage (Note 3) | BC856 BC857 BC858 V _{(BR)CBO} | -80 -50 -30 | — — — | — — — | V | I _C = 10μA, I _B = 0 | |
| Collector-Emitter Breakdown Voltage (Note 3) | BC856 BC857 BC858 V _{(BR)CEO} | -65 -45 -30 | — — — | — — — | V | I _C = 10mA, I _B = 0 | |
| Emitter-Base Breakdown Voltage (Note 3) | V _{(BR)EBO} | -5 | — | — | V | I _E = 1μA, I _C = 0 | |
| H-Parameters | | | | | | | |
| Small Signal Current Gain | Current Gain Group A B C | h _{fe} h _{fe} h _{fe} | — — — | 200 330 600 | — — — | V _{CE} = -5.0V, I _C = -2.0mA, f = 1.0kHz | |
| Input Impedance | Current Gain Group A B C | h _{ie} h _{ie} h _{ie} | — — — | 2.7 4.5 8.7 | kΩ kΩ kΩ | | |
| Output Admittance | Current Gain Group A B C | h _{oe} h _{oe} h _{oe} | — — — | 18 30 60 | μS μS μS | | |
| Reverse Voltage Transfer Ratio | Current Gain Group A B C | h _{re} h _{re} h _{re} | — — — | 1.5x10 ⁻⁴ 2x10 ⁻⁴ 3x10 ⁻⁴ | — — — | | |
| DC Current Gain (Note 3) | Current Gain Group A B C | h _{FE} | 125 220 420 | 180 290 520 | 250 475 800 | | V _{CE} = -5.0V, I _C = -2.0mA |
| Thermal Resistance, Junction to Substrate Backside | R _{θJSB} | — | — | 320 | °C/W | | Note 1 |
| Thermal Resistance, Junction to Ambient | R _{θJA} | — | — | 400 | °C/W | | Note 1 |
| Collector-Emitter Saturation Voltage (Note 3) | V _{CE(SAT)} | — | -75 -250 | -300 -650 | mV | | I _C = -10mA, I _B = -0.5mA I _C = -100mA, I _B = -5.0mA |
| Base-Emitter Saturation Voltage (Note 3) | V _{BE(SAT)} | — | -700 -850 | — | mV | | I _C = -10mA, I _B = -0.5mA I _C = -100mA, I _B = -5.0mA |
| Base-Emitter Voltage (Note 3) | V _{BE(ON)} | -600 — | -650 — | -750 -820 | mV | | V _{CE} = -5.0V, I _C = -2.0mA V _{CE} = -5.0V, I _C = -10mA |
| Collector-Cutoff Current (Note 3) | BC856 BC857 BC858 I _{CES} I _{CES} I _{CES} I _{CBO} I _{CBO} | — — — — — | — — — — — | -15 -15 -15 -15 -4.0 | nA nA nA nA μA | V _{CE} = -80V V _{CE} = -50V V _{CE} = -30V V _{CB} = -30V V _{CB} = -30V, T _A = 150°C | |
| Gain Bandwidth Product | f _T | 100 | 200 | — | MHz | V _{CE} = -5.0V, I _C = -10mA, f = 100MHz | |
| Collector-Base Capacitance | C _{CB0} | — | 3 | — | pF | V _{CB} = -10V, f = 1.0MHz | |
| Noise Figure | NF | — | 2 | 10 | dB | V _{CE} = -5.0V, I _C = 200μA, R _S = 2kΩ, f = 1kHz, Δf = 200Hz | |

- Notes:
1. Package mounted on ceramic substrate 0.7mm x 2.5cm² area.
 2. Current gain subgroup "C" is not available for BC856.
 3. Short duration pulse test to minimize self-heating effect.



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Ordering Information :

| Device | Packing |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel; 3Kpcs/Reel |

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