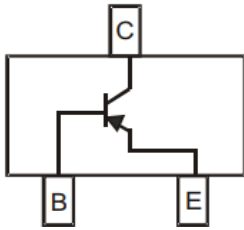


PNP General Purpose Transistor

**SOT-23**

Features

- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 1
- High Conductance
- Part no. with suffix "HQ" means AEC-Q101 qualified

Applications

- General purpose switching and amplification

Mechanical Data

- **Case:** SOT-23
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102

■ Maximum Ratings (Ta=25°C unless otherwise noted)

| Item | Symbol | Unit | Value |
|--|------------|------|-------------|
| Collector-Base Voltage | V_{CB0} | V | -50 |
| Collector-Emitter Voltage | V_{CEO} | V | -45 |
| Emitter-Base Voltage | V_{EBO} | V | -5 |
| Collector Current -Continuous | I_C | mA | -100 |
| Total Device Dissipation (*) | P_D | mW | 300 |
| Thermal Resistance Junction to Ambient (*) | R_{thJA} | K/W | 417 |
| Junction Temperature | T_j | °C | 150 |
| Storage Temperature | T_{STG} | °C | -55 to +150 |

(*) Device mounted on FR-4 PCB 1.0 x 1.0 x 0.06 inch.



BC857BHQ

■ Electrical Characteristics (Ta=25°C unless otherwise noted)

| Item | Symbol | Unit | Conditions | Min | Max |
|--------------------------------------|----------------------|------|---|-----|-------|
| Collector-base breakdown voltage | V _{CBO} | V | I _C = -10μA, I _E =0 | -50 | |
| Collector-emitter breakdown voltage | V _{CEO} | V | I _C = -10mA, I _B =0 | -45 | |
| Emitter-base breakdown voltage | V _{EBO} | V | I _E = -1μA, I _C =0 | -5 | |
| Collector cut-off current | I _{CBO} | nA | V _{CB} = -30V, I _E =0 | | -100 |
| Emitter cut-off current | I _{EBO} | nA | V _{EB} = -5V, I _C =0 | | -100 |
| DC current gain | h _{FE} | | V _{CE} = -5.0V, I _C = -2mA | 220 | 475 |
| Collector-emitter saturation voltage | V _{CE(sat)} | V | I _C = -100mA, I _B = -5mA | | -0.65 |
| Base-emitter saturation voltage | V _{BE(sat)} | V | I _C = -100mA, I _B = -5mA | | -1.1 |
| Transition frequency | f _T | MHz | V _{CE} = -5V, I _C = -10mA, f=100MHz | 100 | |
| Collector output capacitance | Cob | pF | V _{CB} = -10V, f=1MHz | | 4.5 |

■ Ordering Information (Example)

| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(g) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|------------------|----------------------|-------------------------|----------------------------|---------------|
| BC857BHQ | F2 | Approximate 0.01 | 3000 | 30000 | 120000 | 7" reel |



Characteristics (Typical)

Fig.1 - Static characteristic

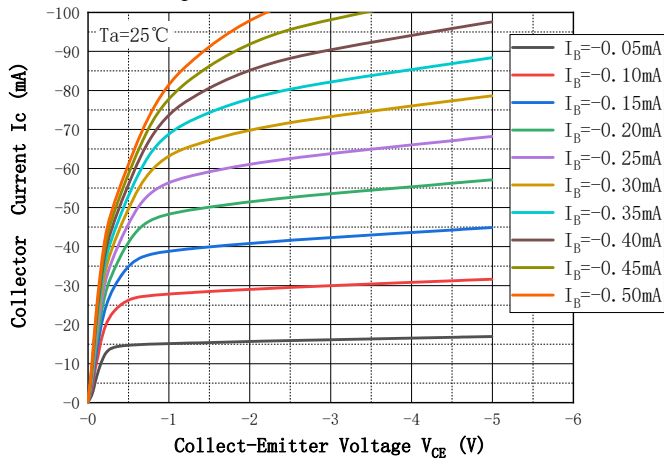


Fig.2 - DC Current Gain

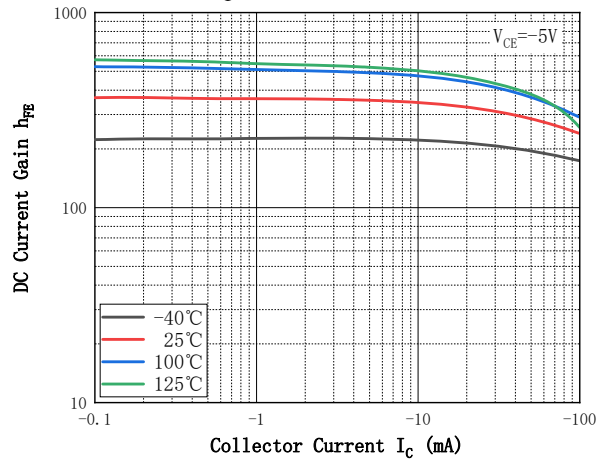


Fig.3 - Collect-Emmitter Saturation Voltage

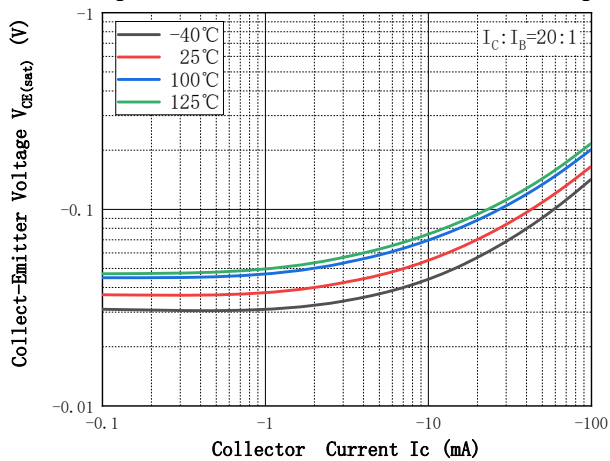


Fig.4 - Base-Emmitter Voltage

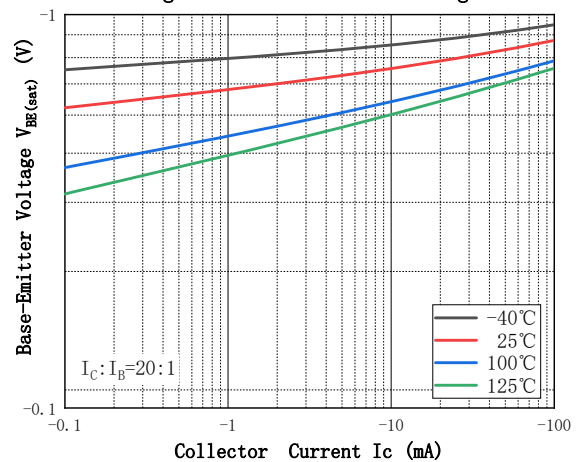


Fig.5 - Base-Emmitter On Voltage

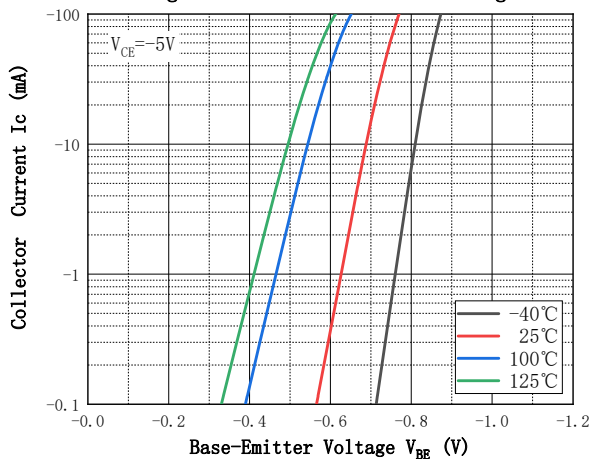
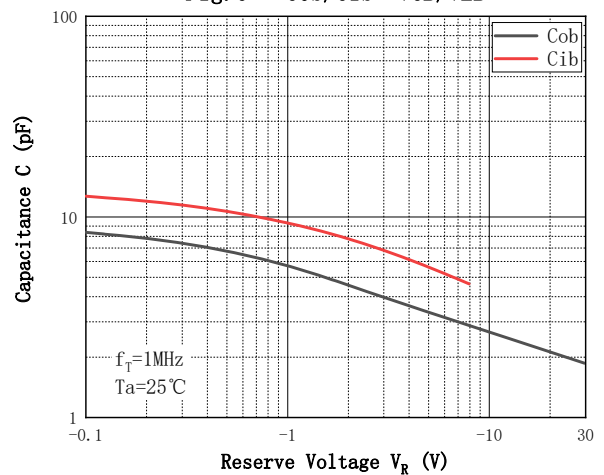


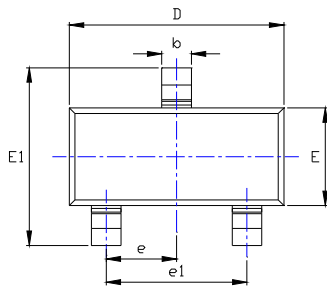
Fig.6 - Cob/Cib—VCB/VEB



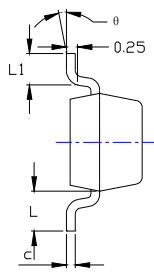


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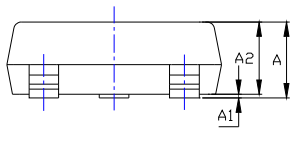
■ SOT-23 Package Outline Dimensions & Suggested Pad Layout



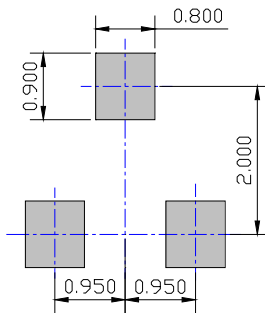
TOP VIEW



SIDE VIEW



SIDE VIEW



UNIT: mm

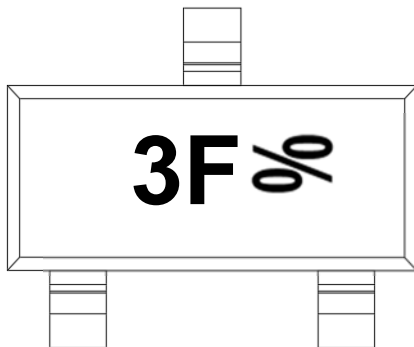
SUGGESTED SOLDER PAD LAYOUT

| SYMBOL | DIMENSIONS | | | |
|--------|------------|-------|------------|-------|
| | INCHES | | Millimeter | |
| | MIN. | MAX. | MIN. | MAX. |
| A | 0.035 | 0.045 | 0.900 | 1.150 |
| A1 | 0.000 | 0.004 | 0.000 | 0.100 |
| A2 | 0.035 | 0.041 | 0.900 | 1.050 |
| b | 0.012 | 0.020 | 0.300 | 0.500 |
| c | 0.004 | 0.008 | 0.100 | 0.200 |
| D | 0.110 | 0.118 | 2.800 | 3.000 |
| E | 0.047 | 0.055 | 1.200 | 1.400 |
| E1 | 0.089 | 0.100 | 2.250 | 2.550 |
| e | 0.037 TYP | | 0.950 TYP | |
| e1 | 0.071 | 0.079 | 1.800 | 2.000 |
| L | 0.022 REF | | 0.550 REF | |
| L1 | 0.012 | 0.020 | 0.300 | 0.500 |
| θ | 0° | 8° | 0° | 8° |

NOTE:

1. PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
2. TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.
3. THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.

■ Marking Information



Note:

1. All marking is at middle of the product body
2. All marking is in laser marking
3. Body color: Black
4. XX% is Marking Code (%=placeholder for date code)

*Date Code vary depending upon production date.



BC857BHQ

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