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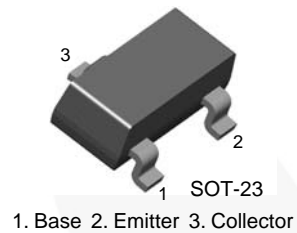
November 2014



BC807 / BC808 PNP Epitaxial Silicon Transistor

Features

- Switching and Amplifier Applications
- Suitable for AF-Driver Stages and Low Power Output Stages
- Complement to BC817 / BC818



Ordering Information

| Part Number | Marking | Package | Packing Method |
|-------------|---------|-----------|----------------|
| BC80716MTF | 9FA | SOT-23 3L | Tape and Reel |
| BC80725MTF | 9FB | SOT-23 3L | Tape and Reel |
| BC80740MTF | 9FC | SOT-23 3L | Tape and Reel |
| BC80840MTF | 9GC | SOT-23 3L | Tape and Reel |

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

| Symbol | Parameter | | Value | Unit |
|-----------|---------------------------|-------|-------------|------------------|
| V_{CES} | Collector-Emitter Voltage | BC807 | -50 | V |
| | | BC808 | -30 | |
| V_{CEO} | Collector-Emitter Voltage | BC807 | -45 | V |
| | | BC808 | -25 | |
| V_{EBO} | Emitter-Base Voltage | | -5 | V |
| I_C | Collector Current (DC) | | -800 | mA |
| T_J | Junction Temperature | | 150 | $^\circ\text{C}$ |
| T_{STG} | Storage Temperature | | -65 to +150 | $^\circ\text{C}$ |

Thermal Characteristics⁽¹⁾

Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

| Symbol | Parameter | Value | Unit |
|-----------------|---|-------|---------------------------|
| P_D | Power Dissipation | 310 | mW |
| | Derate Above 25°C | 2.48 | mW/ $^\circ\text{C}$ |
| $R_{\theta JA}$ | Thermal Resistance, Junction-to-Ambient | 403 | $^\circ\text{C}/\text{W}$ |

Note:

1. PCB size: FR-4, 76 mm x 114 mm x 1.57 mm (3.0 inch x 4.5 inch x 0.062 inch) with minimum land pattern size.

Electrical Characteristics

Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

| Symbol | Parameter | Conditions | Min. | Typ. | Max. | Unit |
|---------------|--------------------------------------|--|------------------------------------|------|------|------|
| BV_{CEO} | Collector-Emitter Breakdown Voltage | BC807 | $I_C = -10\text{ mA}, I_B = 0$ | -45 | | V |
| | | BC808 | | -25 | | |
| BV_{CES} | Collector-Emitter Breakdown Voltage | BC807 | $I_C = -0.1\text{ mA}, V_{BE} = 0$ | -50 | | V |
| | | BC808 | | -30 | | |
| BV_{EBO} | Emitter-Base Breakdown Voltage | $I_E = -0.1\text{ mA}, I_C = 0$ | -5 | | | V |
| I_{CES} | Collector Cut-Off Current | $V_{CE} = -25\text{ V}, V_{BE} = 0$ | | | -100 | nA |
| I_{EBO} | Emitter Cut-Off Current | $V_{EB} = -4\text{ V}, I_C = 0$ | | | -100 | nA |
| h_{FE1} | DC Current Gain | $V_{CE} = -1\text{ V}, I_C = -100\text{ mA}$ | 100 | | 630 | |
| h_{FE2} | | $V_{CE} = -1\text{ V}, I_C = -300\text{ mA}$ | 60 | | | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = -500\text{ mA}, I_B = -50\text{ mA}$ | | | -0.7 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $V_{CE} = -1\text{ V}, I_C = -300\text{ mA}$ | | | -1.2 | V |
| f_T | Current Gain Bandwidth Product | $V_{CE} = -5\text{ V}, I_C = -10\text{ mA}, f = 50\text{ MHz}$ | | 100 | | MHz |
| C_{ob} | Output Capacitance | $V_{CB} = -10\text{ V}, f = 1\text{ MHz}$ | | | 12 | pF |

h_{FE} Classification

| Classification | 16 | 25 | 40 |
|----------------|-----------|-----------|-----------|
| h_{FE1} | 100 ~ 250 | 160 ~ 400 | 250 ~ 630 |
| h_{FE2} | 60 ~ | 100 ~ | 170 ~ |

Typical Performance Characteristics

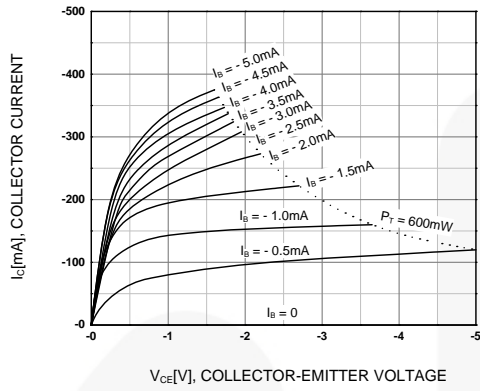


Figure 1. Static Characteristic

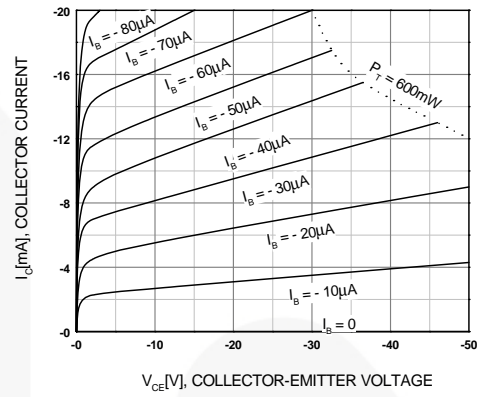


Figure 2. Static Characteristic

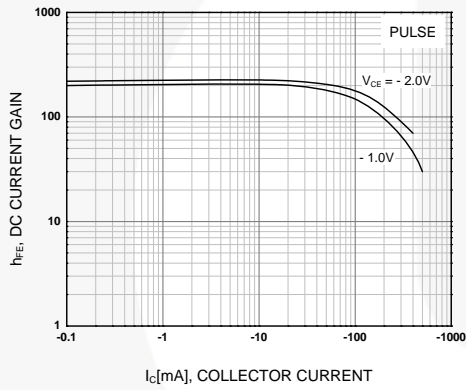


Figure 3. DC Current Gain

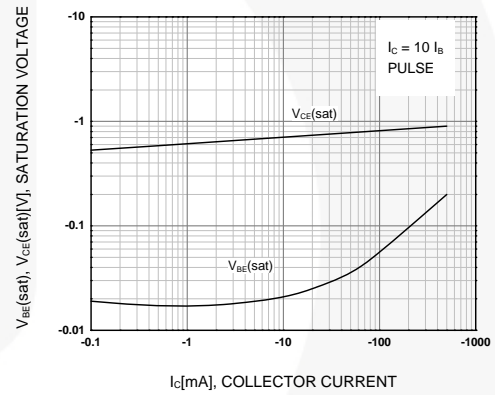


Figure 4. Base-Emitter Saturation Voltage and Collector-Emitter Saturation Voltage

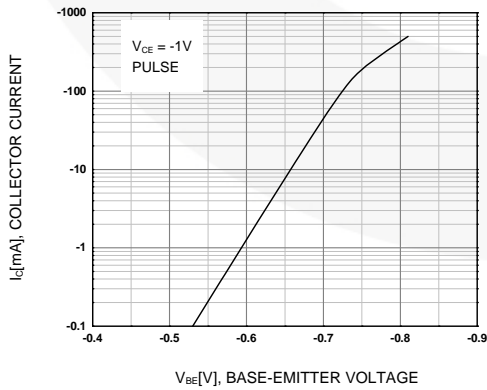


Figure 5. Base-Emitter On Voltage

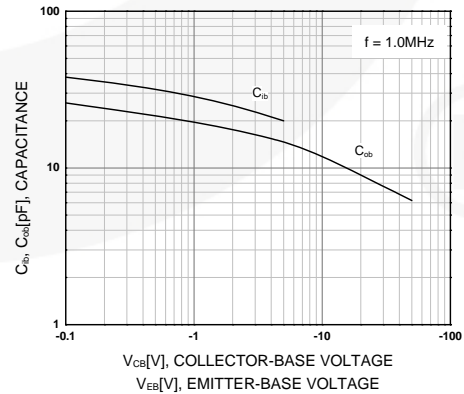


Figure 6. Input Output Capacitance

Typical Performance Characteristics (Continued)

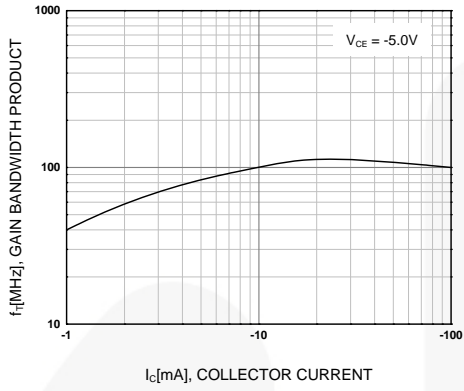
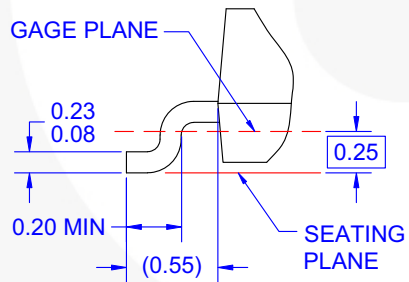
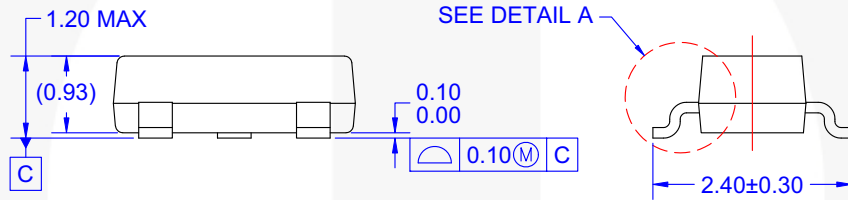
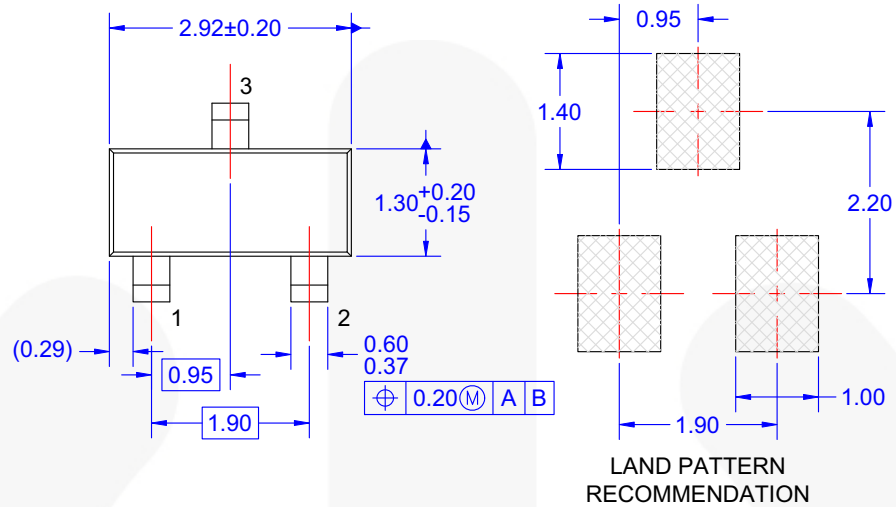


Figure 7. Current Gain Bandwidth Product



Physical Dimensions



NOTES: UNLESS OTHERWISE SPECIFIED

- A) REFERENCE JEDEC REGISTRATION TO-236, VARIATION AB, ISSUE H.
- B) ALL DIMENSIONS ARE IN MILLIMETERS.
- C) DIMENSIONS ARE INCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR EXTRUSIONS.
- D) DIMENSIONING AND TOLERANCING PER ASME Y14.5M - 1994.
- E) DRAWING FILE NAME: MA03DREV10

DETAIL A
SCALE: 2X

Figure 8. 3-LEAD, SOT23, JEDEC TO-236, LOW PROFILE



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