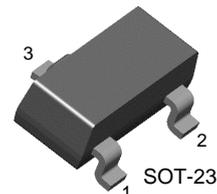


BC817/BC818

NPN Epitaxial Silicon Transistor

Features

- Switching and Amplifier Applications
- Suitable for AF-Driver stages and low power output stages
- Complement to BC807/ BC808



1. Base 2. Emitter 3. Collector

Absolute Maximum Ratings* $T_a = 25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Value | Units |
|-----------|-----------------------------|-----------|------------------|
| V_{CBO} | Collector-Base Voltage | | |
| | : BC817 | 50 | V |
| | : BC818 | 30 | V |
| V_{CEO} | Collector-Emitter Voltage | | |
| | : BC817 | 45 | V |
| | : BC818 | 25 | V |
| V_{EBO} | Emitter-Base Voltage | 5 | V |
| I_C | Collector Current (DC) | 800 | mA |
| P_C | Collector Power Dissipation | 310 | mW |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{STG} | Storage Temperature | -65 ~ 150 | $^\circ\text{C}$ |

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

Electrical Characteristics* $T_a = 25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Units |
|------------------------|--------------------------------------|---|------|------|------|-------|
| BV_{CEO} | Collector-Emitter Breakdown Voltage | $I_C = 10\text{mA}, I_B = 0$ | | | | |
| | : BC817 | 45 | | | V | |
| | : BC818 | 25 | | | V | |
| BV_{CES} | Collector-Emitter Breakdown Voltage | $I_C = 0.1\text{mA}, V_{BE} = 0$ | | | | |
| | : BC817 | 50 | | | V | |
| | : BC818 | 30 | | | V | |
| 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} h_{FE2} | DC Current Gain | $V_{CE} = 1\text{V}, I_C = 100\text{mA}$ | 100 | | 630 | |
| | | $V_{CE} = 1\text{V}, I_C = 300\text{mA}$ | 60 | | | |
| $V_{CE}(\text{sat})$ | Collector-Emitter Saturation Voltage | $I_C = 500\text{mA}, I_B = 50\text{mA}$ | | | 0.7 | V |
| $V_{BE}(\text{on})$ | 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 |

* Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

h_{FE} Classification

| | | | |
|------------------|-----------|-----------|-----------|
| Classification | 16 | 25 | 40 |
| h _{FE1} | 110 ~ 250 | 160 ~ 400 | 250 ~ 630 |
| h _{FE2} | 60~ | 100~ | 170~ |

Ordering Information

| Device ^(note1) | Device Marking | Package | Packing Method | Qty(pcs) | Pin Difinitions |
|---------------------------|----------------|---------|----------------|----------|------------------------------|
| BC81716MTF | 8FA | SOT-23 | Tape & Reel | 3000 | 1.Base 2.Emitter 3.Collector |
| BC81725MTF | 8FB | SOT-23 | Tape & Reel | 3000 | 1.Base 2.Emitter 3.Collector |
| BC81740MTF | 8FC | SOT-23 | Tape & Reel | 3000 | 1.Base 2.Emitter 3.Collector |
| BC81816MTF | 8GA | SOT-23 | Tape & Reel | 3000 | 1.Base 2.Emitter 3.Collector |
| BC81825MTF | 8GB | SOT-23 | Tape & Reel | 3000 | 1.Base 2.Emitter 3.Collector |
| BC81840MTF | 8GC | SOT-23 | Tape & Reel | 3000 | 1.Base 2.Emitter 3.Collector |

Note1 : Affix "-16,-25,-40" means hFE classification.

Affix "-M" means the matte type package.

Affix "-TF" means the tape & reel type packing.

Typical Performance Characteristics

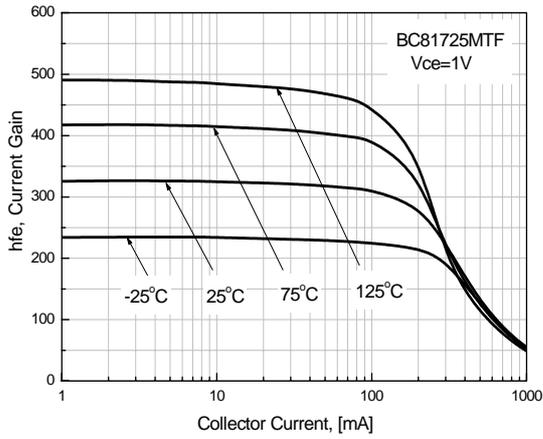


Figure 1. DC current Gain

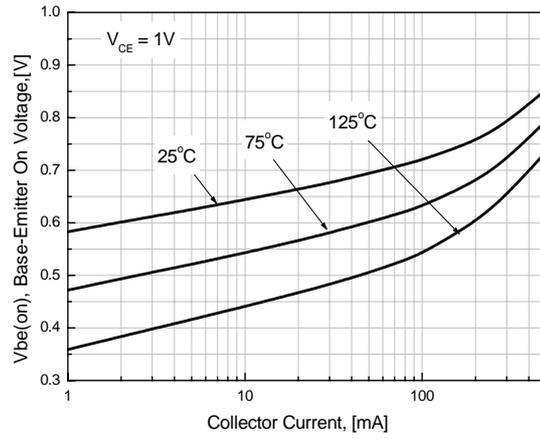


Figure 2. Base-Emitter On Voltage

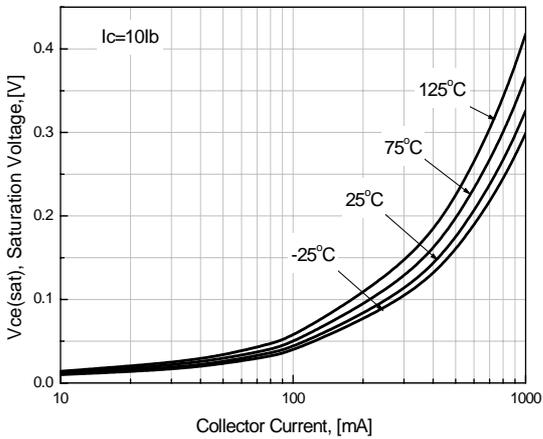


Figure 3. Collector-Emitter Saturation Voltage

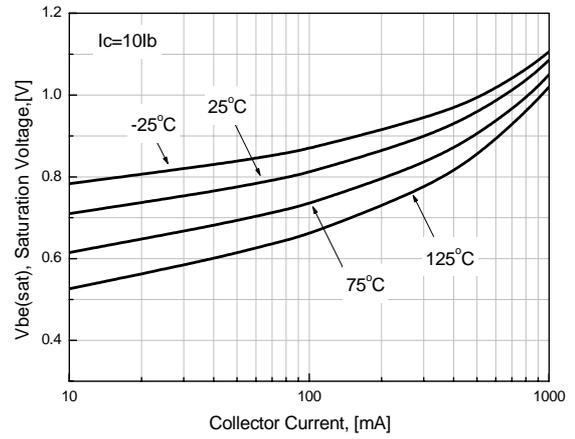


Figure 4. Base-Emitter Saturation Voltage

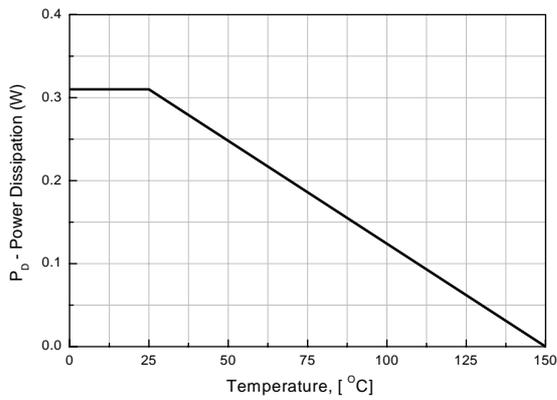
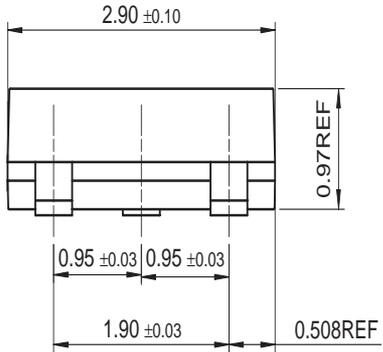
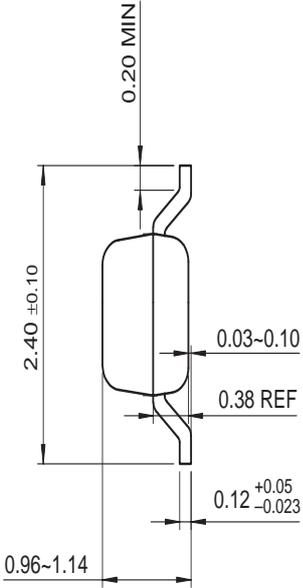
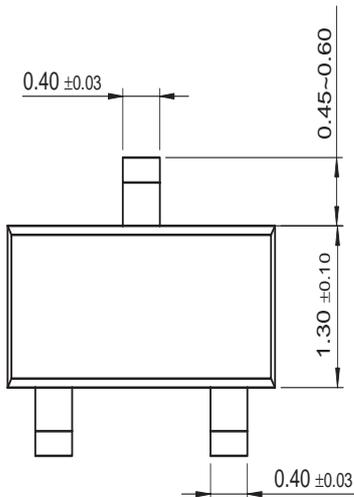


Figure 5. Power Dissipation vs Ambient Temperature

Mechanical Dimensions

SOT-23



Dimensions in Millimeters

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| Build it Now™ | HiSeC™ | OPTOPLANAR™ | Stealth™ | Wire™ |
| CoolFET™ | I ² C™ | PACMAN™ | SuperFET™ | |
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| FAST® | MicroFET™ | QS™ | TinyBuck™ | |
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