



DC COMPONENTS CO., LTD.

DISCRETE SEMICONDUCTORS

BC817

TECHNICAL SPECIFICATIONS OF NPN EPITAXIAL PLANAR TRANSISTOR

Description

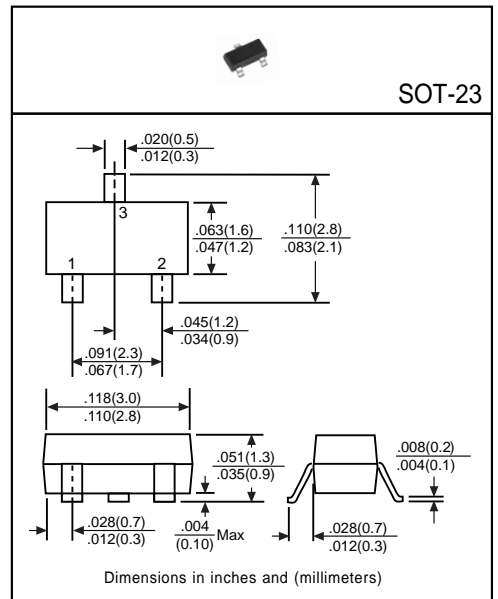
Designed for driver and output stage of audio amplifiers.

Pinning

- 1 = Base
- 2 = Emitter
- 3 = Collector

Absolute Maximum Ratings (TA=25°C)

| Characteristic            | Symbol           | Rating      | Unit |
|---------------------------|------------------|-------------|------|
| Collector-Base Voltage    | V <sub>CB0</sub> | 50          | V    |
| Collector-Emitter Voltage | V <sub>CE0</sub> | 45          | V    |
| Emitter-Base Voltage      | V <sub>EB0</sub> | 5           | V    |
| Collector Current         | I <sub>C</sub>   | 500         | mA   |
| Total Power Dissipation   | P <sub>D</sub>   | 300         | mW   |
| Junction Temperature      | T <sub>J</sub>   | +150        | °C   |
| Storage Temperature       | T <sub>STG</sub> | -55 to +150 | °C   |



Electrical Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified)

| Characteristic                                      | Symbol               | Min | Typ | Max | Unit | Test Conditions                                     |
|---|----------------------|-----|-----|-----|------|---|
| Collector-Base Breakdown Voltage                    | BV <sub>CB0</sub>    | 50  | -   | -   | V    | I <sub>C</sub> =10μA, I <sub>E</sub> =0             |
| Collector-Emitter Breakdown Voltage                 | BV <sub>CE0</sub>    | 45  | -   | -   | V    | I <sub>C</sub> =10mA, I <sub>B</sub> =0             |
| Emitter-Base Breakdown Voltage                      | BV <sub>EB0</sub>    | 5   | -   | -   | V    | I <sub>E</sub> =1μA, I <sub>C</sub> =0              |
| Collector Cutoff Current                            | I <sub>CBO</sub>     | -   | -   | 0.1 | μA   | V <sub>CB</sub> =45V, I <sub>E</sub> =0             |
| Collector-Emitter Saturation Voltage <sup>(1)</sup> | V <sub>CE(sat)</sub> | -   | -   | 0.7 | V    | I <sub>C</sub> =500mA, I <sub>B</sub> =50mA         |
| Base-Emitter Saturation Voltage <sup>(1)</sup>      | V <sub>BE(sat)</sub> | -   | -   | 1.2 | V    | I <sub>C</sub> =500mA, I <sub>B</sub> =50mA         |
| DC Current Gain <sup>(1)</sup>                      | h <sub>FE1</sub>     | 100 | -   | 600 | -    | I <sub>C</sub> =100mA, V <sub>CE</sub> =1V          |
|   | h <sub>FE2</sub>     | 40  | -   | -   | -    | I <sub>C</sub> =500mA, V <sub>CE</sub> =1V          |
| Transition Frequency                                | f <sub>T</sub>       | 100 | -   | -   | MHz  | I <sub>C</sub> =10mA, V <sub>CE</sub> =5V, f=100MHz |
| Output Capacitance                                  | C <sub>ob</sub>      | -   | 4   | -   | pF   | V <sub>CB</sub> =10V, f=1MHz, I <sub>E</sub> =0     |

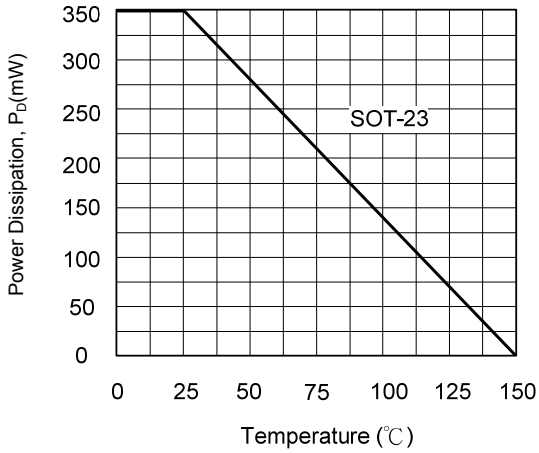
(1) Pulse Test: Pulse Width ≤ 380μs, Duty Cycle ≤ 2%

Classification of h<sub>FE1</sub>

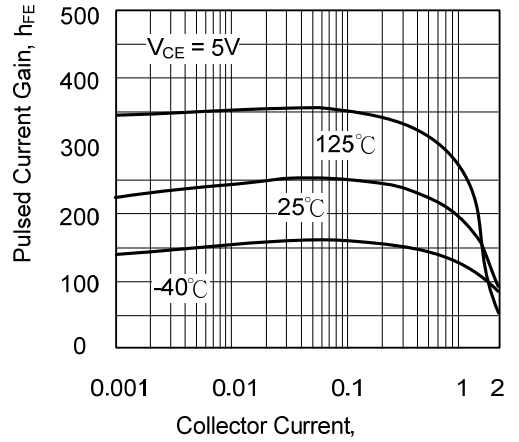
|        |         |         |
|--------|---------|---------|
| Rank   | 25      | 40      |
| Range  | 160~400 | 250~600 |
| Making | 6B      | 6C      |

## Electrical Characteristic Curves

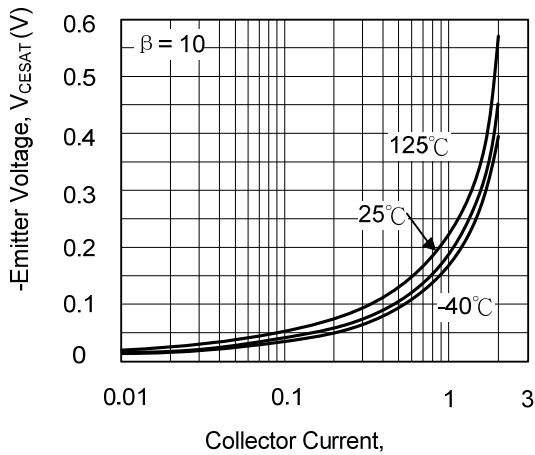
Power Dissipation vs. Ambient Temperature



Typical Pulsed Current Gain vs. Collector Current



Collector-Emitter Saturation Voltage vs. Collector Current



Gain Bandwidth Product vs. Collector Current

