



DC COMPONENTS CO., LTD.

DISCRETE SEMICONDUCTORS

DMBT2222

TECHNICAL SPECIFICATIONS OF NPN EPITAXIAL PLANAR TRANSISTOR

Description

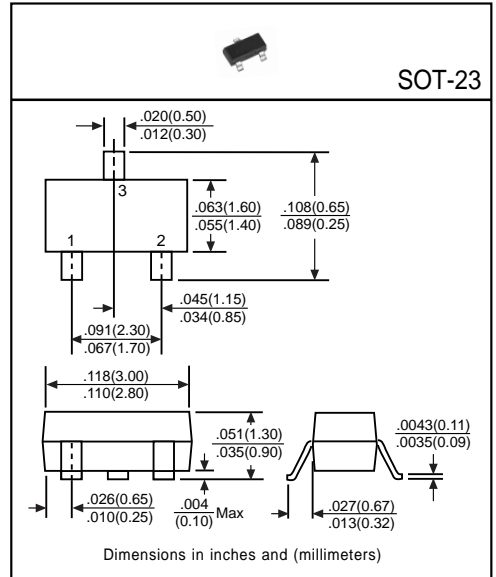
Designed for general purpose switching and amplifier applications.

Pinning

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

Absolute Maximum Ratings (T<sub>A</sub>=25°C)

| Characteristic            | Symbol           | Rating      | Unit |
|---------------------------|------------------|-------------|------|
| Collector-Base Voltage    | V <sub>CB0</sub> | 60          | V    |
| Collector-Emitter Voltage | V <sub>CEO</sub> | 30          | V    |
| Emitter-Base Voltage      | V <sub>EBO</sub> | 5           | V    |
| Collector Current         | I <sub>C</sub>   | 600         | mA   |
| Total Power Dissipation   | P <sub>D</sub>   | 250         | 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>     | 60  | -   | -    | V    | I <sub>C</sub> =10μA                                 |
| Collector-Emitter Breakdown Voltage                 | BV <sub>CEO</sub>     | 30  | -   | -    | V    | I <sub>C</sub> =10mA                                 |
| Emitter-Base Breakdown Voltage                      | BV <sub>EBO</sub>     | 5   | -   | -    | V    | I <sub>E</sub> =10μA                                 |
| Collector Cutoff Current                            | I <sub>CB0</sub>      | -   | -   | 0.01 | μA   | V <sub>CB</sub> =50V                                 |
| Emitter Cutoff Current                              | I <sub>EBO</sub>      | -   | -   | 10   | nA   | V <sub>CE</sub> =60V, V <sub>EB(off)</sub> =3V       |
| Collector-Emitter Saturation Voltage <sup>(1)</sup> | V <sub>CE(sat)1</sub> | -   | -   | 0.4  | V    | I <sub>C</sub> =150mA, I <sub>B</sub> =15mA          |
|   | V <sub>CE(sat)2</sub> | -   | -   | 1.6  | V    | I <sub>C</sub> =500mA, I <sub>B</sub> =50mA          |
| Base-Emitter Saturation Voltage <sup>(1)</sup>      | V <sub>BE(sat)1</sub> | -   | -   | 1.3  | V    | I <sub>C</sub> =150mA, I <sub>B</sub> =15mA          |
|   | V <sub>BE(sat)2</sub> | -   | -   | 2.6  | V    | I <sub>C</sub> =500mA, I <sub>B</sub> =50mA          |
| DC Current Gain <sup>(1)</sup>                      | h <sub>FE1</sub>      | 35  | -   | -    | -    | I <sub>C</sub> =0.1mA, V <sub>CE</sub> =10V          |
|   | h <sub>FE2</sub>      | 50  | -   | -    | -    | I <sub>C</sub> =1mA, V <sub>CE</sub> =10V            |
|   | h <sub>FE3</sub>      | 75  | -   | -    | -    | I <sub>C</sub> =10mA, V <sub>CE</sub> =10V           |
|   | h <sub>FE4</sub>      | 100 | -   | 300  | -    | I <sub>C</sub> =150mA, V <sub>CE</sub> =10V          |
|   | h <sub>FE5</sub>      | 30  | -   | -    | -    | I <sub>C</sub> =500mA, V <sub>CE</sub> =10V          |
| Transition Frequency                                | f <sub>T</sub>        | 250 | -   | -    | MHz  | I <sub>C</sub> =20mA, V <sub>CE</sub> =20V, f=100MHz |

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