



DC COMPONENTS CO., LTD.

DISCRETE SEMICONDUCTORS

TIP122

TECHNICAL SPECIFICATIONS OF NPN DARLINGTON TRANSISTOR

Description

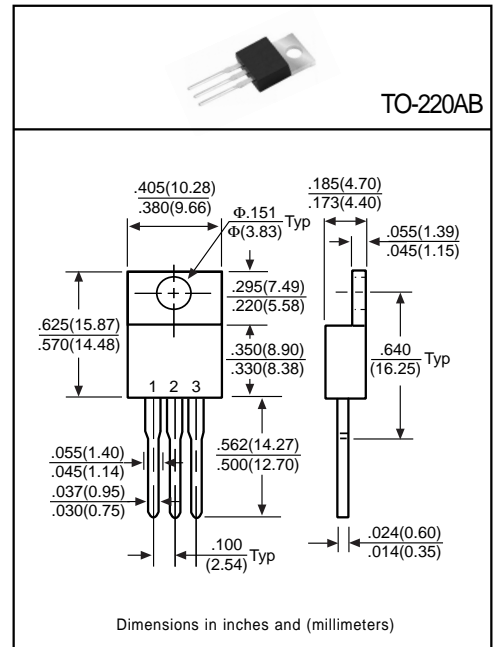
Designed for use in general purpose amplifier and low speed switching applications.

Pinning

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

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

| Characteristic                                | Symbol           | Rating      | Unit |
|---|------------------|-------------|------|
| Collector-Base Voltage                        | V <sub>CB0</sub> | 100         | V    |
| Collector-Emitter Voltage                     | V <sub>CE0</sub> | 100         | V    |
| Emitter-Base Voltage                          | V <sub>EB0</sub> | 5           | V    |
| Collector Current                             | I <sub>C</sub>   | 5           | A    |
| Total Power Dissipation                       | P <sub>D</sub>   | 2           | W    |
| Total Power Dissipation(T <sub>C</sub> =25°C) | P <sub>D</sub>   | 65          | W    |
| 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>     | 100 | -   | -   | V    | I <sub>C</sub> =1mA                        |
| Collector-Emitter Breakdown Voltage                 | BV <sub>CE0</sub>     | 100 | -   | -   | V    | I <sub>C</sub> =100mA                      |
| Collector Cutoff Current                            | I <sub>CB0</sub>      | -   | -   | 0.2 | mA   | V <sub>CB</sub> =100V                      |
|   | I <sub>CE0</sub>      | -   | -   | 0.5 | mA   | V <sub>CE</sub> =50V                       |
| Emitter Cutoff Current                              | I <sub>EB0</sub>      | -   | -   | 2   | mA   | V <sub>EB</sub> =5V                        |
| Collector-Emitter Saturation Voltage <sup>(1)</sup> | V <sub>CE(sat)1</sub> | -   | -   | 2   | V    | I <sub>C</sub> =3A, I <sub>B</sub> =12mA   |
|   | V <sub>CE(sat)2</sub> | -   | -   | 4   | V    | I <sub>C</sub> =5A, I <sub>B</sub> =20mA   |
| Base-Emitter On Voltage <sup>(1)</sup>              | V <sub>BE(on)</sub>   | -   | -   | 2.5 | V    | I <sub>C</sub> =3A, V <sub>CE</sub> =3V    |
| DC Current Gain <sup>(1)</sup>                      | h <sub>FE1</sub>      | 1K  | -   | -   | -    | I <sub>C</sub> =500mA, V <sub>CE</sub> =3V |
|   | h <sub>FE2</sub>      | 1K  | -   | -   | -    | I <sub>C</sub> =3A, V <sub>CE</sub> =3V    |
| Output Capacitance                                  | C <sub>ob</sub>       | -   | -   | 300 | pF   | V <sub>CB</sub> =10V, f=0.1MHz             |

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