



DC COMPONENTS CO., LTD.

DISCRETE SEMICONDUCTORS

2N3772

TECHNICAL SPECIFICATIONS OF NPN EPITAXIAL PLANAR TRANSISTOR

Description

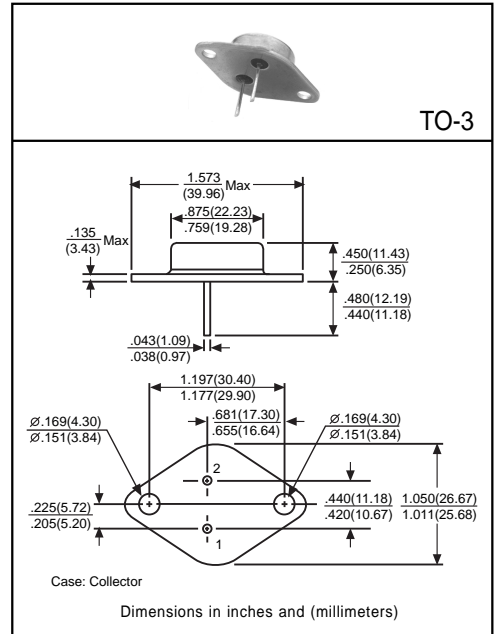
Designed for linear amplifiers, series pass regulators, and inductive switching applications.

Pinning

- 1 = Base
- 2 = Emitter
- Case = Collector

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>CEO</sub> | 60          | V    |
|  | V <sub>CEX</sub> | 80          | V    |
| Emitter-Base Voltage                           | V <sub>EBO</sub> | 7           | V    |
| Collector Current (continuous)                 | I <sub>C</sub>   | 30          | A    |
| Collector Current (peak)                       | I <sub>C</sub>   | 30          | A    |
| Total Power Dissipation (T <sub>C</sub> =25°C) | P <sub>D</sub>   | 150         | W    |
| Junction Temperature                           | T <sub>J</sub>   | +200        | °C   |
| Storage Temperature                            | T <sub>STG</sub> | -65 to +200 | °C   |



Electrical Characteristics

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

| Characteristic                                      | Symbol                | Min | Typ | Max | Unit | Test Conditions   |
|---|-----------------------|-----|-----|-----|------|---|
| Collector-Emitter Sustaining Voltage                | V <sub>CEO(sus)</sub> | 60  | -   | -   | V    | I <sub>C</sub> =0.2A, I <sub>B</sub> =0                                 |
|   | V <sub>CEX(sus)</sub> | 80  | -   | -   | V    | I <sub>C</sub> =0.2A, V <sub>BE(off)</sub> =1.5V, R <sub>BE</sub> =100Ω |
|   | V <sub>CER(sus)</sub> | 70  | -   | -   | V    | I <sub>C</sub> =0.2A, R <sub>BE</sub> =100Ω                             |
| Collector Cutoff Current                            | I <sub>CEO</sub>      | -   | -   | 10  | mA   | V <sub>CE</sub> =50V, I <sub>B</sub> =0                                 |
|   | I <sub>CEX</sub>      | -   | -   | 5   | mA   | V <sub>CE</sub> =100V, V <sub>BE(off)</sub> =1.5V                       |
|   |                       | -   | -   | 10  | mA   | V <sub>CE</sub> =30V, V <sub>BE(off)</sub> =1.5V, T <sub>C</sub> =150°C |
|   | I <sub>CB0</sub>      | -   | -   | 5   | mA   | V <sub>CB</sub> =50V, I <sub>E</sub> =0                                 |
| Emitter Cutoff Current                              | I <sub>EBO</sub>      | -   | -   | 5   | mA   | V <sub>BE</sub> =7V, I <sub>C</sub> =0                                  |
| Collector-Emitter Saturation Voltage <sup>(1)</sup> | V <sub>CE(sat)1</sub> | -   | -   | 1.4 | V    | I <sub>C</sub> =10A, I <sub>B</sub> =1.5A                               |
|   | V <sub>CE(sat)2</sub> | -   | -   | 4   | V    | I <sub>C</sub> =20A, I <sub>B</sub> =4A                                 |
| Base-Emitter On Voltage <sup>(1)</sup>              | V <sub>BE(on)</sub>   | -   | -   | 2.2 | V    | I <sub>C</sub> =10A, V <sub>CE</sub> =4V                                |
| DC Current Gain <sup>(1)</sup>                      | h <sub>FE1</sub>      | 15  | -   | 60  | -    | I <sub>C</sub> =10A, V <sub>CE</sub> =4V                                |
|   | h <sub>FE2</sub>      | 5   | -   | -   | -    | I <sub>C</sub> =20A, V <sub>CE</sub> =4V                                |
| Second Breakdown Collector with Base Forward Bias   | I <sub>S/b</sub>      | 2.5 | -   | -   | A    | V <sub>CE</sub> =60V, t=1.0s, Non-repetitive                            |
| Current Gain - Bandwidth Product                    | f <sub>T</sub>        | 0.2 | -   | -   | MHz  | I <sub>C</sub> =1A, V <sub>CE</sub> =4V, f=50KHz                        |
| Small-Signal Current Gain                           | h <sub>fe</sub>       | 40  | -   | -   | -    | I <sub>C</sub> =1A, V <sub>CE</sub> =4V, f=1KHz                         |

(1) Pulse Test: Pulse Width ≤300μs, Duty Cycle ≤2%