

# 2SC3835

Silicon NPN Triple Diffused Planar Transistor (Switching Transistor)

Application : Humidifier, DC-DC Converter, and General Purpose

**Absolute maximum ratings** (Ta=25°C)

| Symbol           | Ratings     | Unit |
|------------------|-------------|------|
| V <sub>CB0</sub> | 200         | V    |
| V <sub>CE0</sub> | 120         | V    |
| V <sub>EB0</sub> | 8           | V    |
| I <sub>C</sub>   | 7(Pulse14)  | A    |
| I <sub>B</sub>   | 3           | A    |
| P <sub>C</sub>   | 70(Tc=25°C) | W    |
| T <sub>J</sub>   | 150         | °C   |
| T <sub>stg</sub> | -55 to +150 | °C   |

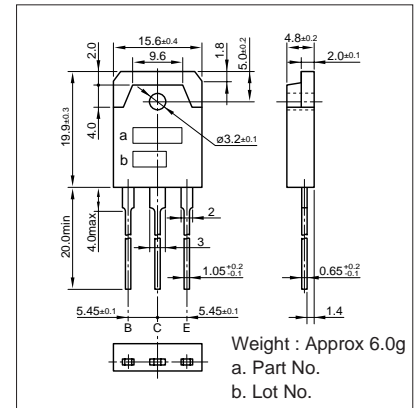
**Electrical Characteristics** (Ta=25°C)

| Symbol               | Conditions                                  | Ratings | Unit |
|----------------------|---|---------|------|
| I <sub>CB0</sub>     | V <sub>CB</sub> =200V                       | 100max  | μA   |
| I <sub>EB0</sub>     | V <sub>EB</sub> =8V                         | 100max  | μA   |
| V <sub>(BR)CEO</sub> | I <sub>C</sub> =50mA                        | 120min  | V    |
| h <sub>FE</sub>      | V <sub>CE</sub> =4V, I <sub>C</sub> =3A     | 70to220 |      |
| V <sub>CE(sat)</sub> | I <sub>C</sub> =3A, I <sub>B</sub> =0.3A    | 0.5max  | V    |
| V <sub>BE(sat)</sub> | I <sub>C</sub> =3A, I <sub>B</sub> =0.3A    | 1.2max  | V    |
| f <sub>r</sub>       | V <sub>CE</sub> =12V, I <sub>E</sub> =-0.5A | 30typ   | MHz  |
| COB                  | V <sub>CB</sub> =10V, f=1MHz                | 110typ  | pF   |

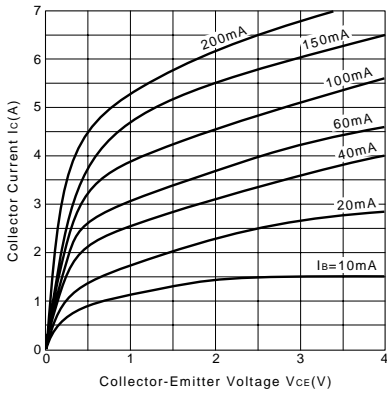
**Typical Switching Characteristics (Common Emitter)**

| V <sub>CC</sub> (V) | R <sub>L</sub> (Ω) | I <sub>C</sub> (A) | V <sub>BB1</sub> (V) | V <sub>BB2</sub> (V) | I <sub>B1</sub> (A) | I <sub>B2</sub> (A) | t <sub>on</sub> (μs) | t <sub>stg</sub> (μs) | t <sub>f</sub> (μs) |
|---------------------|--------------------|--------------------|----------------------|----------------------|---------------------|---------------------|----------------------|-----------------------|---------------------|
| 50                  | 16.7               | 3                  | 10                   | -5                   | 0.3                 | -0.6                | 0.5max               | 3.0max                | 0.5max              |

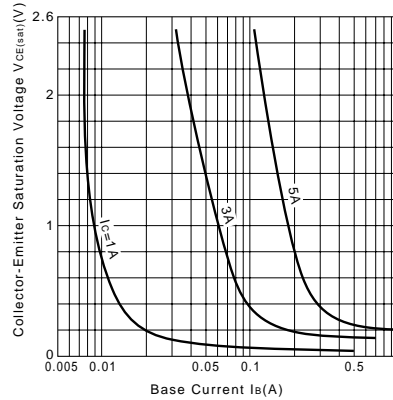
**External Dimensions MT-100(TO3P)**



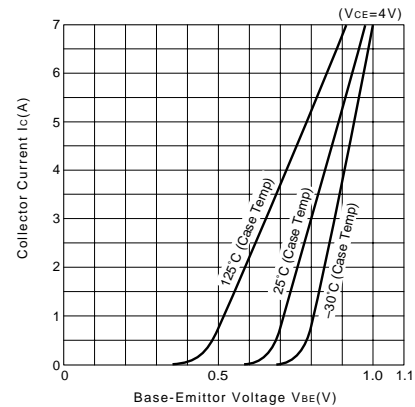
**I<sub>C</sub>-V<sub>CE</sub> Characteristics (Typical)**



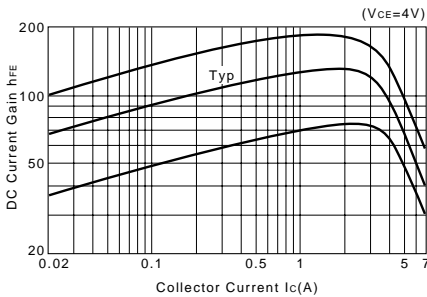
**V<sub>CE(sat)</sub>-I<sub>B</sub> Characteristics (Typical)**



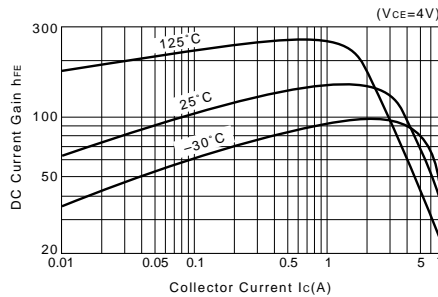
**I<sub>C</sub>-V<sub>BE</sub> Temperature Characteristics (Typical)**



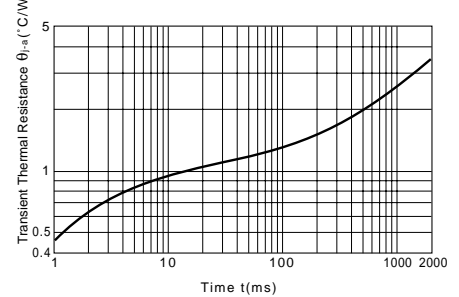
**h<sub>FE</sub>-I<sub>C</sub> Characteristics (Typical)**



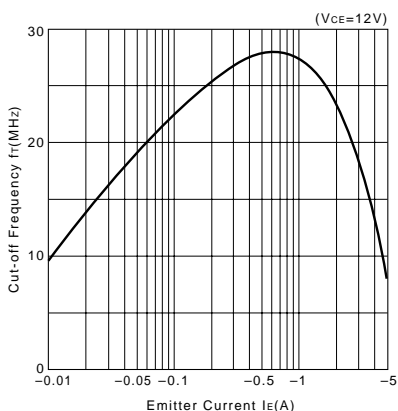
**h<sub>FE</sub>-I<sub>C</sub> Temperature Characteristics (Typical)**



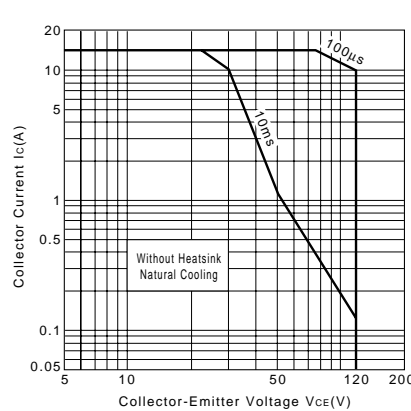
**θ<sub>j-a</sub>-t Characteristics**



**f<sub>T</sub>-I<sub>E</sub> Characteristics (Typical)**



**Safe Operating Area (Single Pulse)**



**P<sub>C</sub>-T<sub>a</sub> Derating**

