

# 2SC4298

Silicon NPN Triple Diffused Planar Transistor (High Voltage and High Speed Switching Transistor)

Application : Switching Regulator and General Purpose

## Absolute maximum ratings (Ta=25°C)

| Symbol           | 2SC4298     | Unit |
|------------------|-------------|------|
| V <sub>CB0</sub> | 500         | V    |
| V <sub>CEO</sub> | 400         | V    |
| V <sub>EB0</sub> | 10          | V    |
| I <sub>c</sub>   | 15(Pulse30) | A    |
| I <sub>B</sub>   | 5           | A    |
| P <sub>c</sub>   | 80(Tc=25°C) | W    |
| T <sub>j</sub>   | 150         | °C   |
| T <sub>stg</sub> | -55 to +150 | °C   |

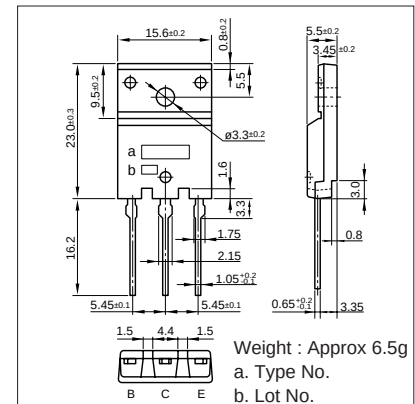
## Electrical Characteristics (Ta=25°C)

| Symbol               | Conditions                                  | 2SC4298  | Unit |
|----------------------|---------------------------------------------|----------|------|
| I <sub>CB0</sub>     | V <sub>CB</sub> =500V                       | 100max   | μA   |
| I <sub>EB0</sub>     | V <sub>EB</sub> =10V                        | 100max   | μA   |
| V <sub>(BR)CEO</sub> | I <sub>c</sub> =25mA                        | 400min   | V    |
| h <sub>FE</sub>      | V <sub>CE</sub> =4V, I <sub>c</sub> =8A     | 10 to 30 |      |
| V <sub>CE(sat)</sub> | I <sub>c</sub> =8A, I <sub>B</sub> =1.6A    | 0.5max   | V    |
| V <sub>BE(sat)</sub> | I <sub>c</sub> =8A, I <sub>B</sub> =1.6A    | 1.3max   | V    |
| f <sub>r</sub>       | V <sub>CE</sub> =12V, I <sub>E</sub> =-1.5A | 10typ    | MHz  |
| COB                  | V <sub>CB</sub> =10V, f=1MHz                | 85typ    | pF   |

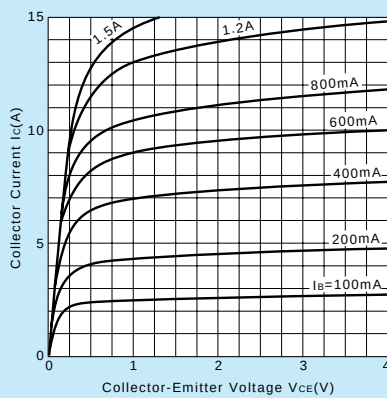
## Typical Switching Characteristics (Common Emitter)

| V <sub>CC</sub><br>(V) | R <sub>L</sub><br>(Ω) | I <sub>c</sub><br>(A) | V <sub>BB1</sub><br>(V) | V <sub>BB2</sub><br>(V) | I <sub>B1</sub><br>(A) | I <sub>B2</sub><br>(A) | t <sub>on</sub><br>(μs) | t <sub>stg</sub><br>(μs) | t <sub>f</sub><br>(μs) |
|------------------------|-----------------------|-----------------------|-------------------------|-------------------------|------------------------|------------------------|-------------------------|--------------------------|------------------------|
| 200                    | 25                    | 8                     | 10                      | -5                      | 0.8                    | -1.6                   | 1max                    | 3max                     | 0.5max                 |

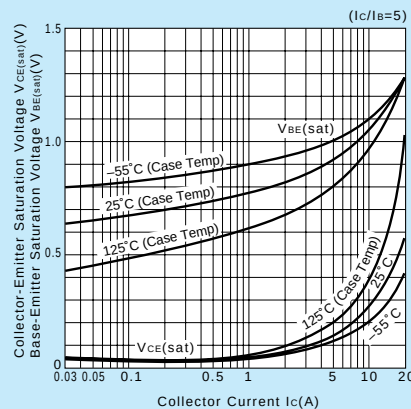
## External Dimensions FM100(TO3PF)



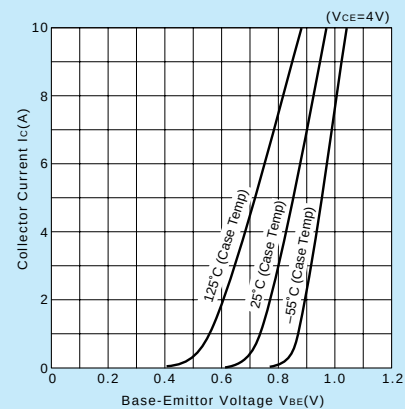
## I<sub>c</sub>-V<sub>CE</sub> Characteristics (Typical)



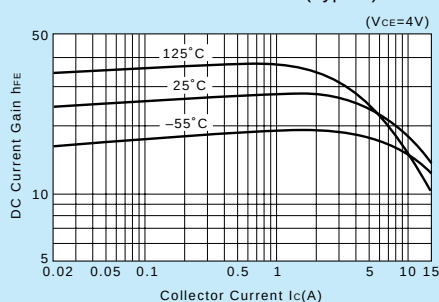
## V<sub>CE(sat)</sub>, V<sub>BE(sat)</sub>-I<sub>c</sub> Temperature Characteristics (Typical)



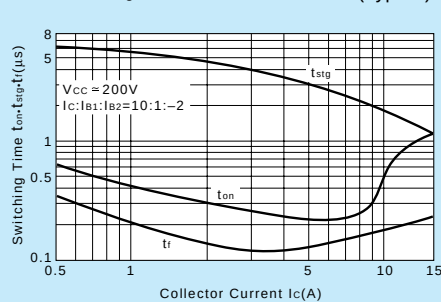
## I<sub>c</sub>-V<sub>BE</sub> Temperature Characteristics (Typical)



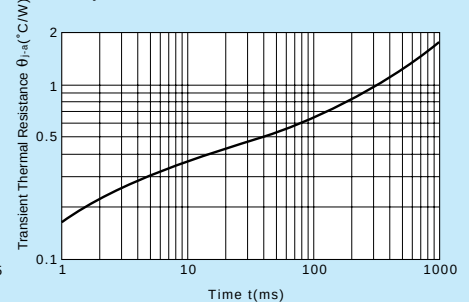
## h<sub>FE</sub>-I<sub>c</sub> Characteristics (Typical)



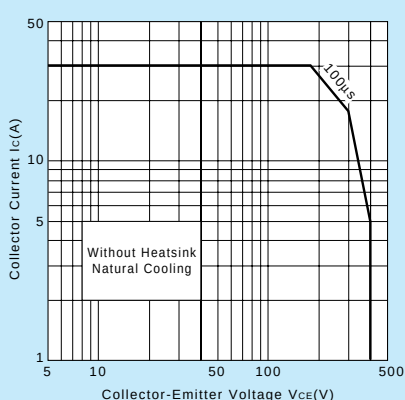
## t<sub>on</sub>, t<sub>stg</sub>, t<sub>f</sub>-I<sub>c</sub> Characteristics (Typical)



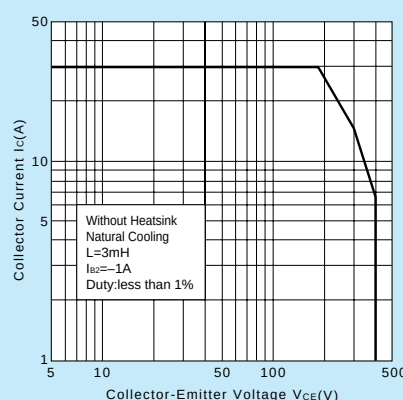
## θ<sub>j-a</sub>-t Characteristics



## Safe Operating Area (Single Pulse)



## Reverse Bias Safe Operating Area



## P<sub>c</sub>-T<sub>a</sub> Derating

