

# Power Transistor FN812

## Absolute Maximum Ratings (Ta=25°C)

| Symbol           | Ratings                   | Unit |
|------------------|---------------------------|------|
| V <sub>CB0</sub> | 120                       | V    |
| V <sub>CEO</sub> | 100                       | V    |
| V <sub>EB0</sub> | 6                         | V    |
| I <sub>c</sub>   | 8 (pulse 12)              | A    |
| I <sub>B</sub>   | 3                         | A    |
| P <sub>C</sub>   | 35 (T <sub>c</sub> =25°C) | W    |
| T <sub>J</sub>   | 150                       | °C   |
| T <sub>stg</sub> | -55 to +150               | °C   |

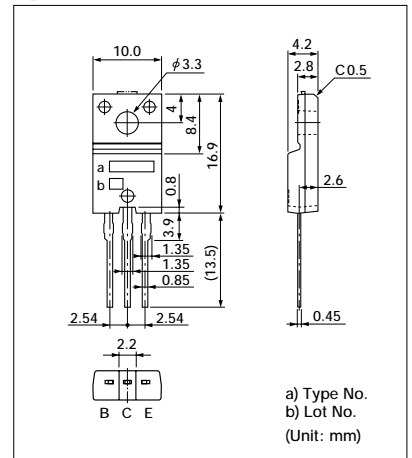
## Electrical Characteristics (Ta=25°C)

| Symbol               | Test Conditions                            | Ratings | Unit |
|----------------------|--|---------|------|
| I <sub>CB0</sub>     | V <sub>CB</sub> = 120V                     | 10max   | μA   |
| I <sub>EB0</sub>     | V <sub>EB</sub> = 6V                       | 10max   | μA   |
| V <sub>CEO</sub>     | I <sub>c</sub> = 50mA                      | 100min  | V    |
| h <sub>FE</sub>      | V <sub>CE</sub> = 4V, I <sub>c</sub> = 3A  | 70min   |      |
| V <sub>CE(sat)</sub> | I <sub>c</sub> = 4A, I <sub>B</sub> = 0.4A | 0.3max  | V    |

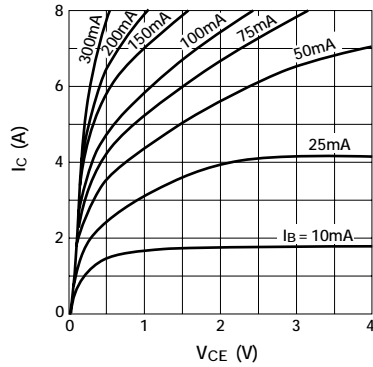
## Typical Switching Characteristics

| 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> (mA) | I <sub>B2</sub> (mA) | t <sub>on</sub> (μs) | t <sub>stg</sub> (μs) | t <sub>f</sub> (μs) |
|---------------------|--------------------|--------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-----------------------|---------------------|
| 12                  | 4                  | 3                  | 10                   | -5                   | 30                   | -30                  | 1.0                  | 2.0                   | 0.5                 |

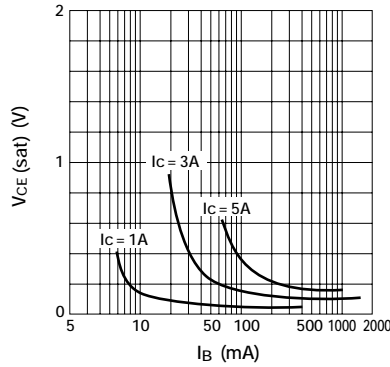
## External Dimensions FM20 (full-mold)



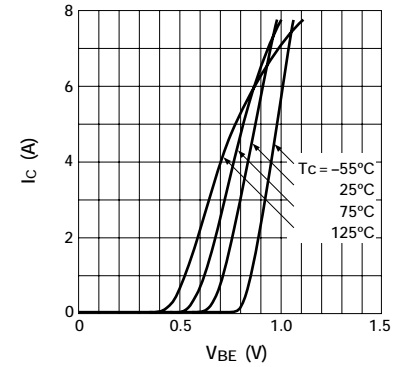
■ I<sub>c</sub> — V<sub>CE</sub> Characteristics (typ.)



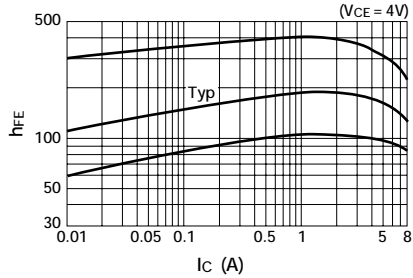
■ V<sub>CE(sat)</sub> — I<sub>B</sub> Characteristics (typ.)



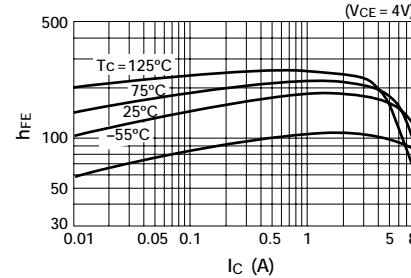
■ I<sub>c</sub> — V<sub>BE</sub> Temperature Characteristics (typ.)



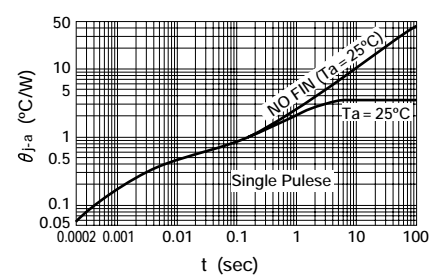
■ h<sub>FE</sub> — I<sub>c</sub> Characteristics (typ.)



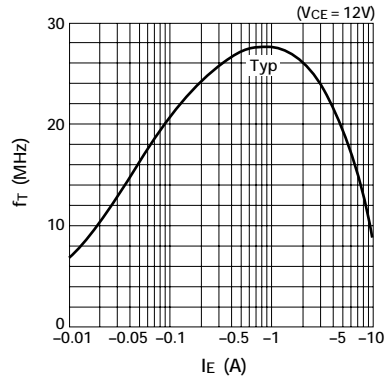
■ h<sub>FE</sub> — I<sub>c</sub> Temperature Characteristics (typ.)



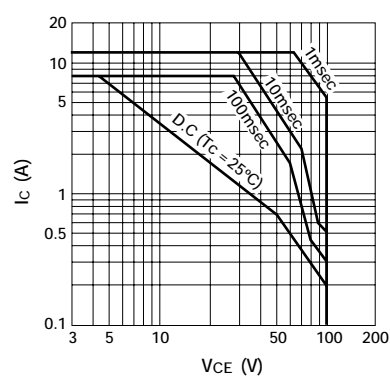
■ θ<sub>j-a</sub> — t Characteristics



■ f<sub>T</sub> — I<sub>E</sub> Characteristics (typ.)



■ Safe Operating Area (single pulse)



■ P<sub>C</sub> — T<sub>a</sub> Derating

