

# Power Transistor Array STA415A

## Absolute Maximum Ratings (Ta=25°C)

| Symbol           | Ratings                         | Unit |
|------------------|---------------------------------|------|
| V <sub>CB0</sub> | 35±5                            | V    |
| V <sub>CEO</sub> | 36±5                            | V    |
| V <sub>EBO</sub> | 6                               | V    |
| I <sub>C</sub>   | 2 (pulse 3*)                    | A    |
| I <sub>B</sub>   | 30                              | mA   |
| P <sub>T</sub>   | 4 (Ta = 25°C)<br>18 (Tc = 25°C) | W    |
| T <sub>J</sub>   | 150                             | °C   |
| T <sub>stg</sub> | -55 to +150                     | °C   |

\* P<sub>W</sub> ≤ 1ms, Duty ≤ 25%

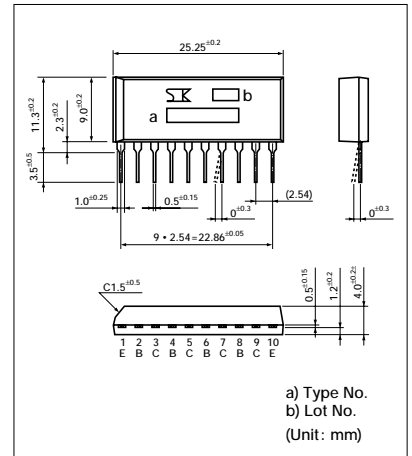
## Electrical Characteristics (Ta=25°C)

| Symbol               | Test Conditions                             | Ratings  | Unit |
|----------------------|---|----------|------|
| I <sub>CB0</sub>     | V <sub>CB</sub> = 30V                       | 10max    | μA   |
| I <sub>EBO</sub>     | V <sub>EB</sub> = 6V                        | 2.7max   | mA   |
| V <sub>CEO</sub>     | I <sub>C</sub> = 25mA                       | 31 to 41 | V    |
| h <sub>FE</sub>      | V <sub>CE</sub> = 4V, I <sub>C</sub> = 0.7A | 400min   |      |
| V <sub>CE(sat)</sub> | I <sub>C</sub> = 0.5A, I <sub>B</sub> = 5mA | 0.2max   | V    |
|                      | I <sub>C</sub> = 1A, I <sub>B</sub> = 5mA   | 0.5max   | V    |
| V <sub>FEC</sub>     | I <sub>FEC</sub> = 2A                       | 2.5max   | V    |
| R <sub>B</sub>       |   | 800±120  | Ω    |
| R <sub>BE</sub>      |   | 2.0±0.4  | kΩ   |
| Es/b                 | L = 10mH, single pulse                      | 50min    | mJ   |

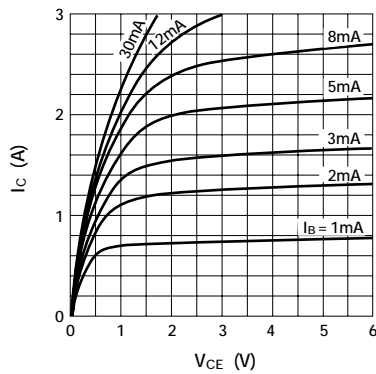
## Typical Switching Characteristics

| 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                  | 12                 | 1                  | 10                   | -5                   | 5                    | 0                    | 1.0                  | 8.5                   | 2.5                 |

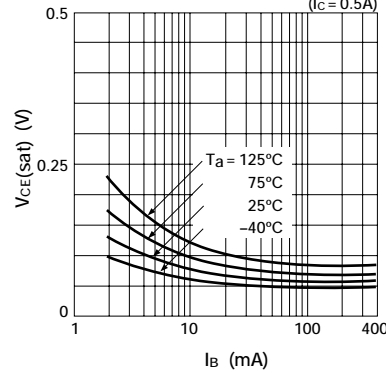
## External Dimensions STA4 (LF412)



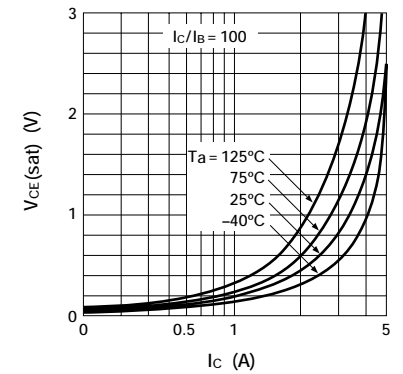
■ I<sub>C</sub> — V<sub>CE</sub> Characteristics (typ.)



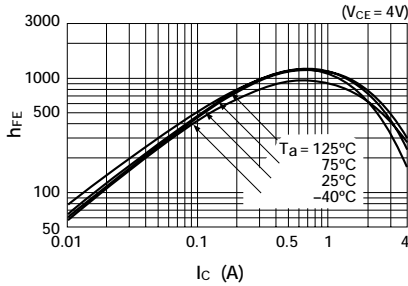
■ V<sub>CE(sat)</sub> — I<sub>B</sub> Temperature Characteristics



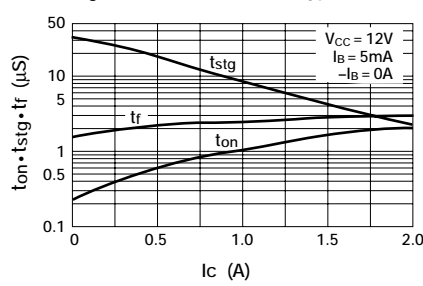
■ V<sub>CE(sat)</sub> — I<sub>C</sub> Temperature Characteristics



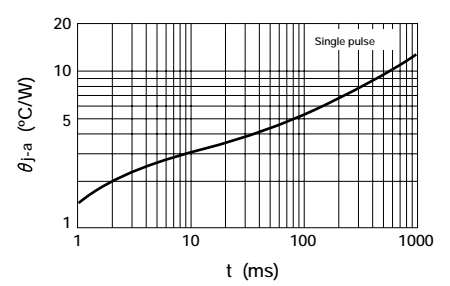
■ h<sub>FE</sub> — I<sub>C</sub> Temperature Characteristics



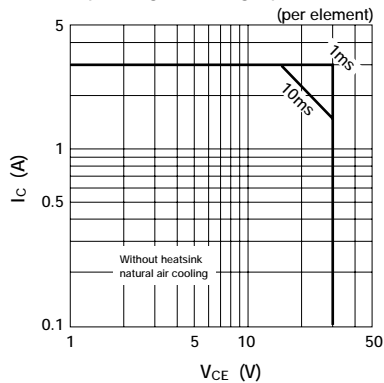
■ t<sub>on</sub> · t<sub>stg</sub> · t<sub>f</sub> — I<sub>C</sub> Characteristics (typ.)



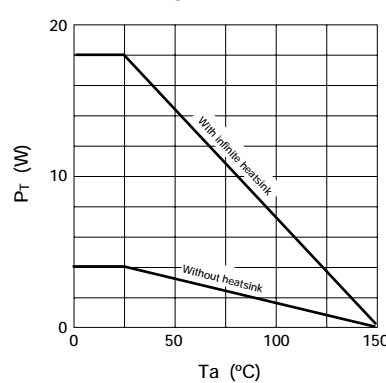
■ θ<sub>J-a</sub> — t Characteristics



■ Safe Operating Area (single pulse)



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



## Equivalent Circuit Diagram

