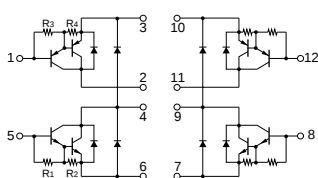


## Absolute maximum ratings

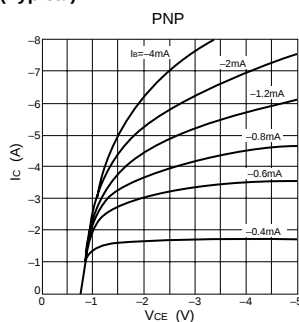
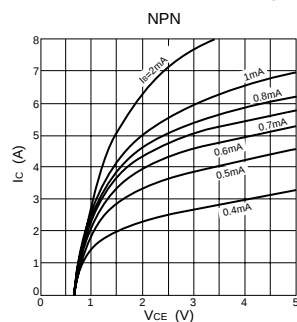
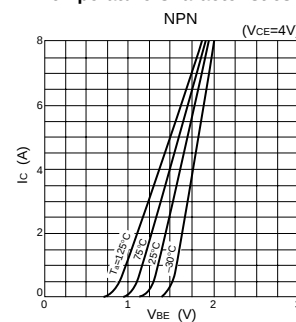
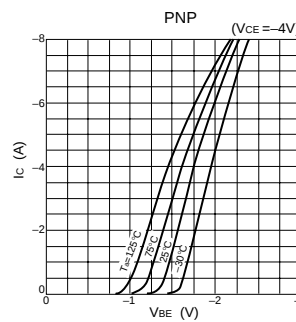
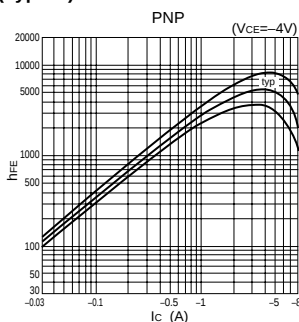
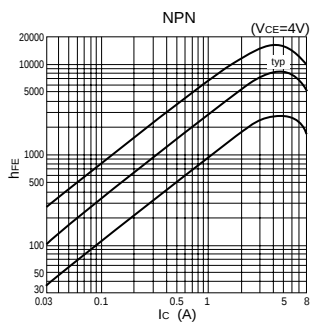
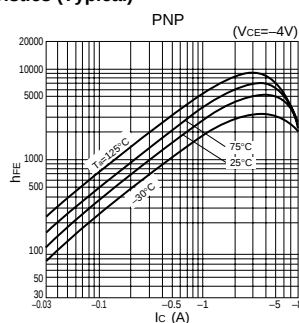
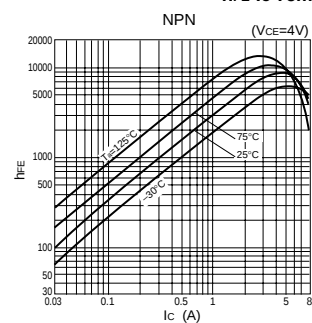
(T<sub>a</sub>=25°C)

| Symbol           | Ratings                             |                                  | Unit             |
|------------------|-------------------------------------|----------------------------------|------------------|
|                  | NPN                                 | PNP                              |                  |
| V <sub>CB0</sub> | 100                                 | −100                             | V                |
| V <sub>CEO</sub> | 100                                 | −100                             | V                |
| V <sub>EBO</sub> | 6                                   | −6                               | V                |
| I <sub>C</sub>   | 5                                   | −5                               | A                |
| I <sub>CP</sub>  | 8 (PW≤1ms, D <sub>u</sub> ≤50%)     | −8 (PW≤1ms, D <sub>u</sub> ≤50%) | A                |
| I <sub>B</sub>   | 0.5                                 | −0.5                             | A                |
| I <sub>F</sub>   | 5 (PW≤0.5ms, D <sub>u</sub> ≤25%)   |                                  | A                |
| I <sub>FSM</sub> | 8 (PW≤10ms, single)                 |                                  | A                |
| V <sub>R</sub>   | 120                                 |                                  | V                |
| P <sub>T</sub>   | 5 (T <sub>a</sub> =25°C)            |                                  | W                |
|                  | 25 (T <sub>c</sub> =25°C)           |                                  |                  |
| V <sub>ISO</sub> | 1000 (Between fin and lead pin, AC) |                                  | V <sub>rms</sub> |
| T <sub>j</sub>   | 150                                 |                                  | °C               |
| T <sub>stg</sub> | −40 to +150                         |                                  | °C               |
| θ <sub>j-c</sub> | 5                                   |                                  | °C/W             |

## Equivalent circuit diagram

R<sub>1</sub>: 2.5kΩ typ R<sub>2</sub>: 200Ω typ R<sub>3</sub>: 3kΩ typ R<sub>4</sub>: 100Ω typ

## Characteristic curves

I<sub>C</sub>-V<sub>CE</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)

## Electrical characteristics

(T<sub>a</sub>=25°C)

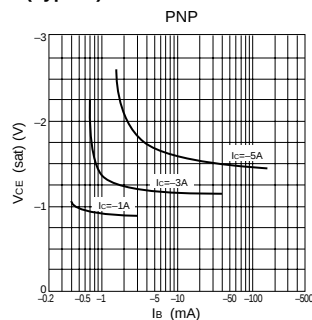
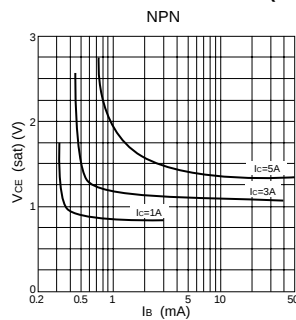
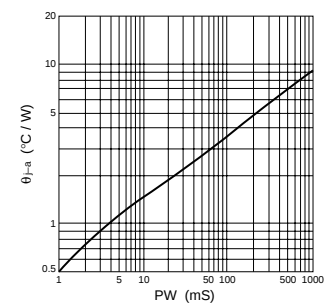
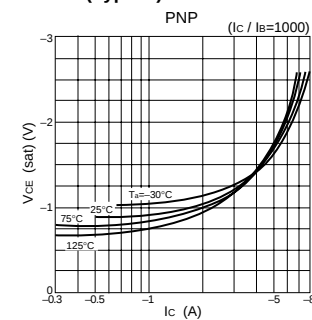
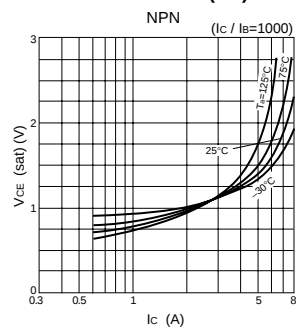
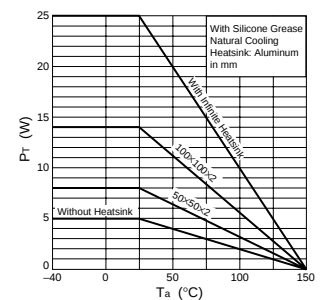
| Symbol               | NPN           |     |     |      |                                         | PNP           |     |      |      |                                           |
|----------------------|---------------|-----|-----|------|-----------------------------------------|---------------|-----|------|------|-------------------------------------------|
|                      | Specification |     |     | Unit | Conditions                              | Specification |     |      | Unit | Conditions                                |
|                      | min           | typ | max |      |                                         | min           | typ | max  |      |                                           |
| I <sub>CBO</sub>     |               |     | 10  | μA   | V <sub>CB</sub> =100V                   |               |     | -10  | μA   | V <sub>CB</sub> =-100V                    |
| I <sub>EBO</sub>     |               |     | 10  | mA   | V <sub>EB</sub> =6V                     |               |     | -10  | mA   | V <sub>EB</sub> =-6V                      |
| V <sub>CEO</sub>     | 100           |     |     | V    | I <sub>C</sub> =10mA                    | -100          |     |      | V    | I <sub>C</sub> =-10mA                     |
| h <sub>FE</sub>      | 1000          |     |     |      | V <sub>CE</sub> =4V, I <sub>C</sub> =3A | 1000          |     |      |      | V <sub>CE</sub> =-4V, I <sub>C</sub> =-3A |
| V <sub>CE(sat)</sub> |               |     | 1.5 | V    | I <sub>C</sub> =3A, I <sub>B</sub> =6mA |               |     | -1.5 | V    | I <sub>C</sub> =-3A, I <sub>B</sub> =-6mA |

## ●Diode for flyback voltage absorption

(T<sub>a</sub>=25°C)

| Symbol         | Specification |     |     | Unit | Conditions           |
|----------------|---------------|-----|-----|------|----------------------|
|                | min           | typ | max |      |                      |
| V <sub>R</sub> | 120           |     |     | V    | I <sub>R</sub> =10μA |
| V <sub>F</sub> |               |     | 1.2 | V    | I <sub>F</sub> =1A   |
| I <sub>R</sub> |               |     | 10  | μA   | V <sub>R</sub> =100V |

## Characteristic curves

V<sub>CE(sat)</sub>-I<sub>B</sub> Characteristics (Typical)θ<sub>JA</sub>-PW CharacteristicsV<sub>CE(sat)</sub>-I<sub>C</sub> Temperature Characteristics (Typical)P<sub>T</sub>-T<sub>a</sub> Characteristics

Safe Operating Area (SOA)

