

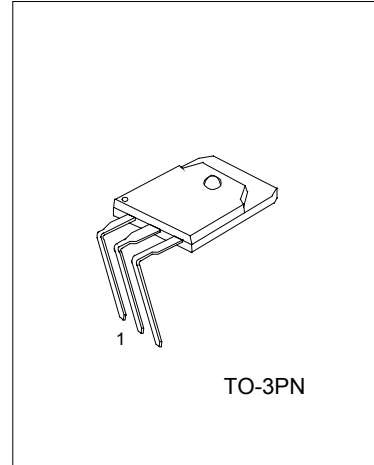
# UTC2SC3835

# NPN EPITAXIAL SILICON TRANSISTOR

## SWITCH NPN TRANSISTOR

### APPLICATION

\*Humidifier,DC-DC converter,and general purpose.



1: BASE 2:COLLECTOR 3: EMITTER

### ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

| PARAMETER                              | SYMBOL           | RATING     | UNIT |
|--|------------------|------------|------|
| Collector-Base Voltage                 | V <sub>CB0</sub> | 200        | V    |
| Collector-Emitter Voltage              | V <sub>CEO</sub> | 120        | V    |
| Emitter-Base Voltage                   | V <sub>EB0</sub> | 8          | V    |
| Base Current                           | I <sub>B</sub>   | 3          | A    |
| Collector Current                      | I <sub>c</sub>   | 7          | A    |
| Collector Current (PULSE)              |                  | 14         | A    |
| Collector Power Dissipation( Tc=25°C ) | P <sub>c</sub>   | 70         | W    |
| Junction Temperature                   | T <sub>j</sub>   | 150        | °C   |
| Storage Temperature                    | T <sub>STG</sub> | -55 ~ +150 | °C   |

### ELECTRICAL CHARACTERISTICS (Ta=25°C,unless otherwise specified)

| PARAMETER                            | SYMBOL               | TEST CONDITIONS                                     | MIN | TYP | MAX | UNIT |
|--------------------------------------|----------------------|---|-----|-----|-----|------|
| Collector Emitter Breakdown Voltage  | BV <sub>CEO</sub>    | I <sub>c</sub> = 50mA                               | 120 |     |     | V    |
| Collector Cut-Off Current            | I <sub>CB0</sub>     | V <sub>CB</sub> =200V, I <sub>E</sub> =0            |     |     | 100 | μA   |
| Emitter Cut-Off Current              | I <sub>EB0</sub>     | V <sub>EB</sub> = 8V, I <sub>c</sub> =0             |     |     | 100 | μA   |
| DC Current Transfer Ratio            | h <sub>FE</sub>      | V <sub>CE</sub> = 4V, I <sub>c</sub> = 3A           | 70  |     | 220 |      |
| Collector-Emitter Saturation Voltage | V <sub>CE(sat)</sub> | I <sub>c</sub> =3A ,I <sub>B</sub> =0.3A            |     |     | 0.5 | V    |
| Base-Emitter Saturation Voltage      | V <sub>BE(sat)</sub> | I <sub>c</sub> =3A ,I <sub>B</sub> =0.3A            |     |     | 1.2 | V    |
| Transition Frequency                 | f <sub>r</sub>       | V <sub>CE</sub> =12V, I <sub>E</sub> =-0.5mA        |     | 30  |     | MHz  |
| Output Capacitance                   | C <sub>ob</sub>      | V <sub>CB</sub> = 10V, I <sub>E</sub> = 0 A, f=1MHz |     | 110 |     | pF   |
| Turn-on Time                         | t <sub>on</sub>      | See specified Test Circuit                          |     |     | 0.5 | μs   |
| Storage Time                         | t <sub>stg</sub>     |   |     |     | 3.0 | μs   |
| Fall Time                            | t <sub>f</sub>       |   |     |     | 0.5 | μs   |

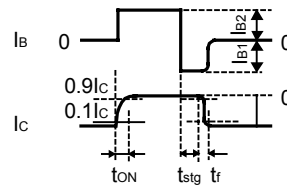
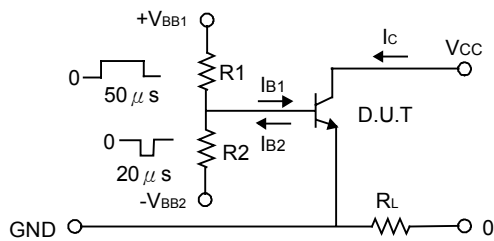
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## CLASSIFICATION of hFE

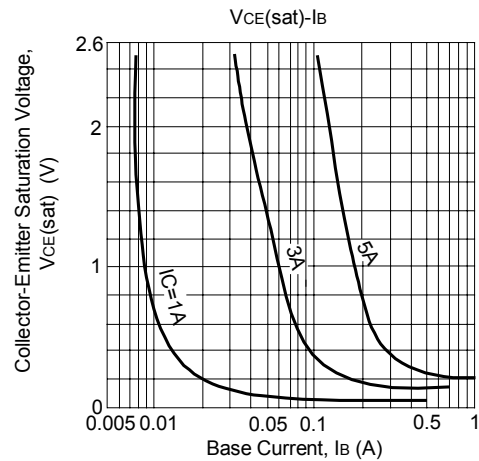
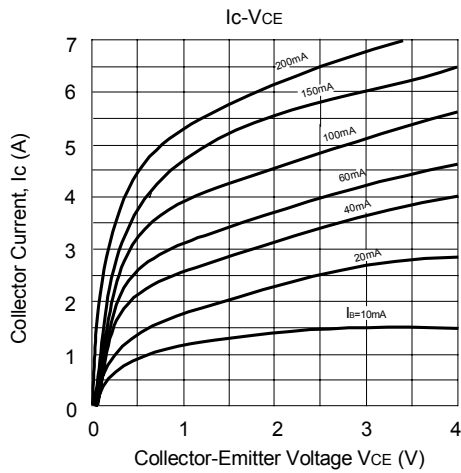
| RANK  | A      | B       | C       |
|-------|--------|---------|---------|
| RANGE | 70-130 | 120-170 | 160-220 |

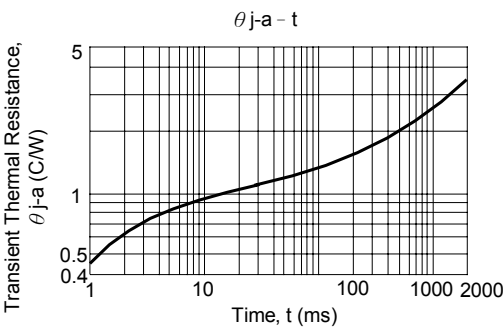
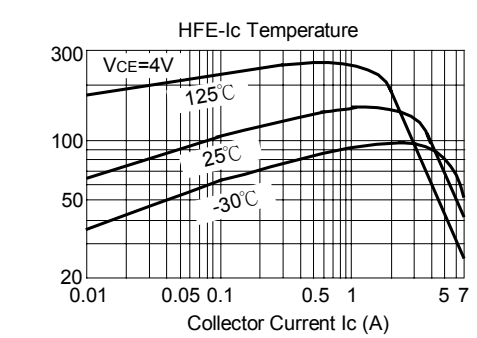
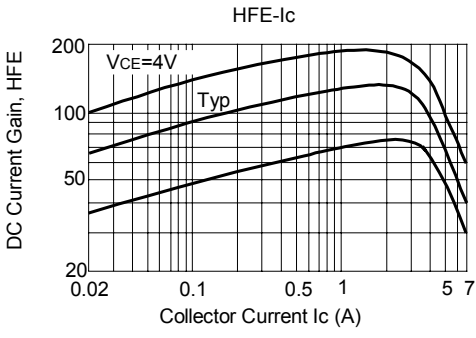
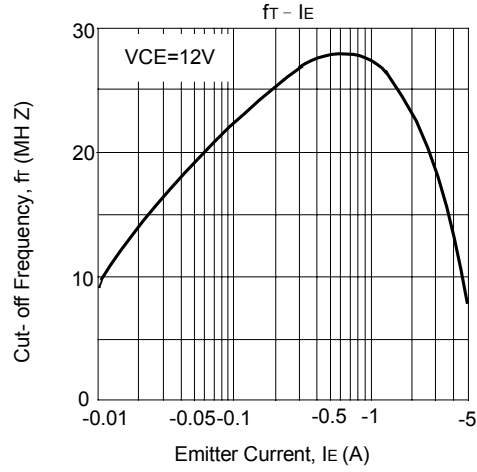
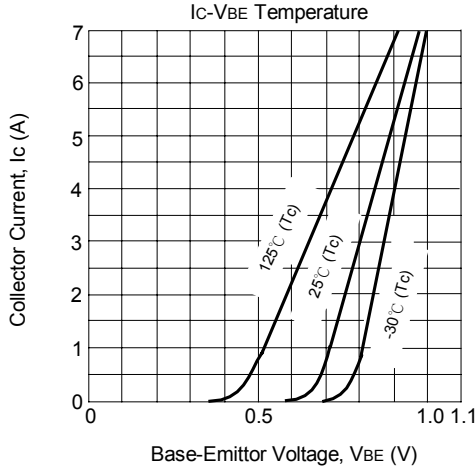
## Typical Switching Characteristics(Common Emitter)

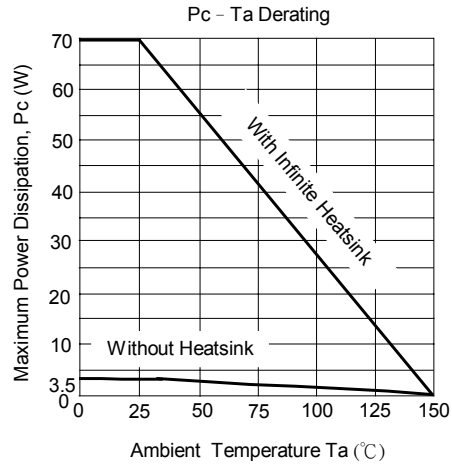
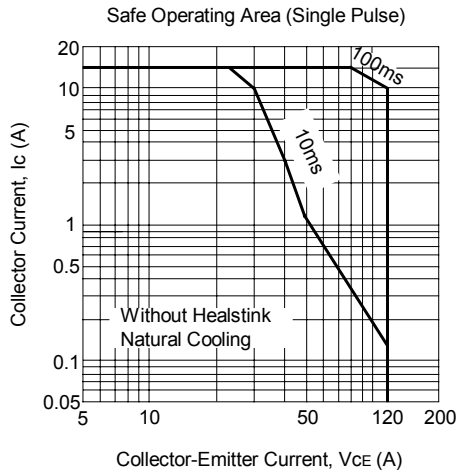
| V <sub>CC</sub> (V) | R <sub>L</sub> (Ω) | I <sub>C</sub> (A) | V <sub>BB1</sub> (V) | V <sub>BB2</sub> (V) | I <sub>B1</sub> (A) | I <sub>B2</sub> (A) |
|---------------------|--------------------|--------------------|----------------------|----------------------|---------------------|---------------------|
| 50                  | 16.7               | 3                  | 10                   | -5                   | 0.3                 | -0.6                |



## ELECTRICAL CHARACTERISTICS CURVES







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