

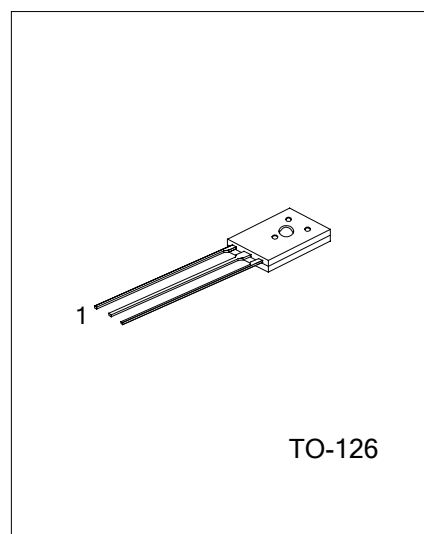
## HIGH FREQUENCY SWITCHING TRANSISTORS FOR BALLASTERS

### DESCRIPTION

UTC 4128 is designed for specially used for electronic ballasters in 110VAC environment.

### FEATURES

- \* Triple diffused technology.
- \* High switching speed



TO-126

1: BASE 2: COLLECTOR 3: EMITTER

\*Pb-free plating product number: 4128L

### ABSOLUTE MAXIMUM RATINGS

(T<sub>c</sub> = 25°C)

| PARAMETER                          | SYMBOL           | RATINGS    | UNIT |
|------------------------------------|------------------|------------|------|
| Collector-Base Voltage             | V <sub>CBO</sub> | 400        | V    |
| Collector-Emitter Voltage          | V <sub>CEO</sub> | 200        | V    |
| Collector-Emitter Voltage          | V <sub>EBO</sub> | 7          | V    |
| Peak Collector Current             | I <sub>C</sub>   | 5          | A    |
| Peak Collector Consume Dissipation | P <sub>C</sub>   | 40         | W    |
| Peak Junction Temperature          | T <sub>J</sub>   | 150        | °C   |
| Storage Temperature                | T <sub>STG</sub> | -40 ~ +150 | °C   |

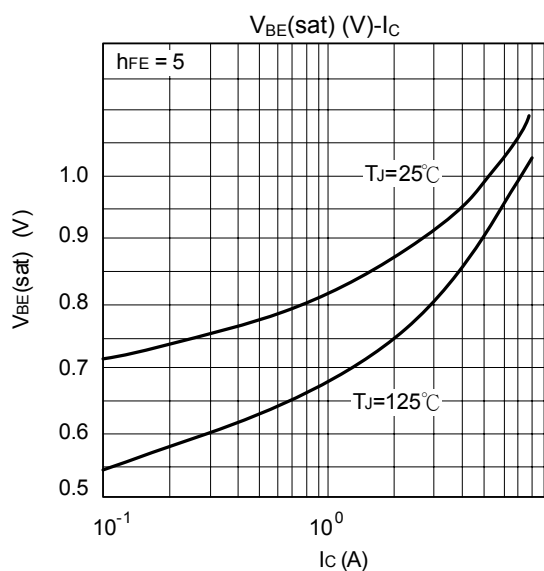
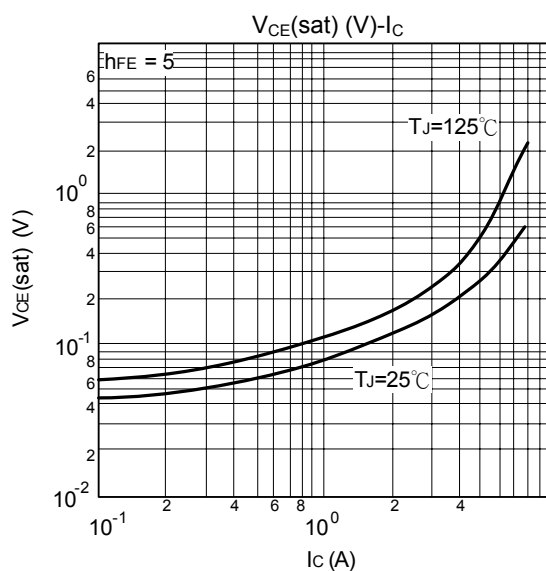
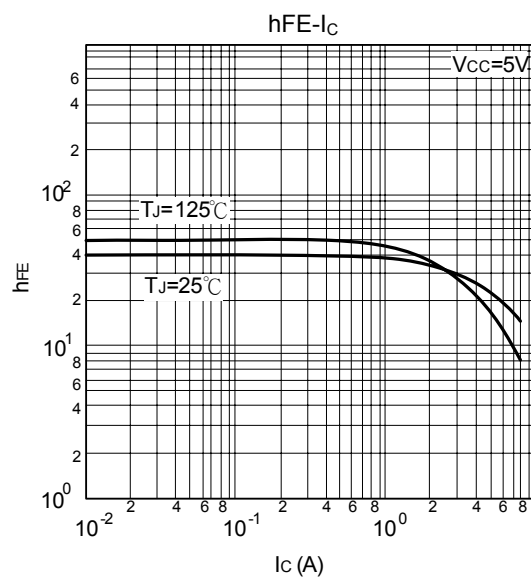
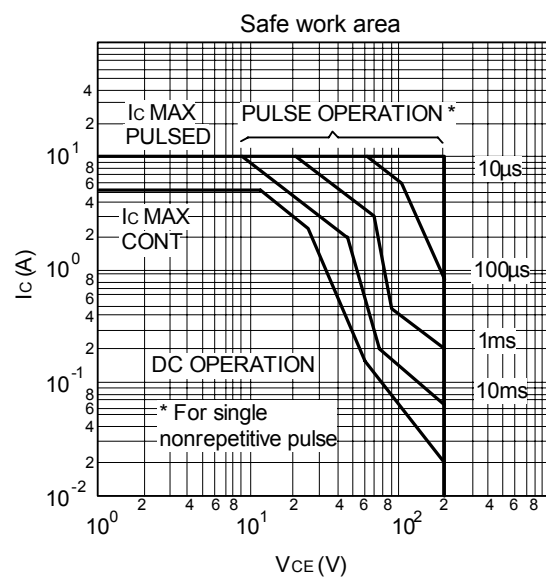
### ELECTRICAL CHARACTERISTICS

(T<sub>a</sub> = 25°C)

| PARAMETER                             | SYMBOL                 | TEST CONDITIONS                                               | MIN | TYP | MAX | UNIT |
|---------------------------------------|------------------------|---------------------------------------------------------------|-----|-----|-----|------|
| Collector-Emitter Maintenance Voltage | V <sub>CEO (SUS)</sub> | I <sub>C</sub> =10mA, I <sub>B</sub> =0                       | 200 |     |     | V    |
| Collector-Base Breakdown Voltage      | V <sub>(BR) CBO</sub>  | I <sub>C</sub> =1mA, I <sub>B</sub> =0                        | 400 |     |     | V    |
| Emitter-Base Breakdown Voltage        | V <sub>(BR) EBO</sub>  | I <sub>E</sub> =1mA, I <sub>C</sub> =0                        | 7   |     |     | V    |
| Collector-Base Cutoff Current         | I <sub>CBO</sub>       | V <sub>CB</sub> =400V, I <sub>E</sub> =0                      |     |     | 100 | μA   |
| Collector-Emitter Cutoff Current      | I <sub>CEO</sub>       | V <sub>CE</sub> =200V, I <sub>B</sub> =0                      |     |     | 100 | μA   |
| Emitter-Base Cutoff Current           | I <sub>EBO</sub>       | V <sub>EB</sub> =7V, I <sub>C</sub> =0                        |     |     | 100 | μA   |
| DC Current Gain                       | h <sub>FE (1)</sub>    | V <sub>CE</sub> =10V, I <sub>C</sub> =0.5A                    | 10  |     | 60  |      |
|                                       | h <sub>FE (2)</sub>    | V <sub>CE</sub> =5V, I <sub>C</sub> =2A                       | 10  |     | 40  |      |
| Collector-Emitter Saturation Voltage  | V <sub>CE (sat)</sub>  | I <sub>C</sub> =1A, I <sub>B</sub> =0.2A                      |     |     | 0.8 | V    |
|                                       |                        | I <sub>C</sub> =4A, I <sub>B</sub> =1A                        |     |     | 2   | V    |
| Base-Emitter Saturation Voltage       | V <sub>BE (sat)</sub>  | I <sub>C</sub> =2A, I <sub>B</sub> =0.5A                      |     |     | 1.6 | V    |
| Fall Time                             | t <sub>f</sub>         | I <sub>C</sub> =2A, I <sub>B1</sub> = -I <sub>B2</sub> = 0.4A |     |     | 0.9 | μs   |
| Storage Time                          | t <sub>s</sub>         | I <sub>C</sub> =2A, I <sub>B1</sub> = -I <sub>B2</sub> = 0.4A |     |     | 4   | μs   |
| Feature Frequency                     | f <sub>T</sub>         | V <sub>CE</sub> =10V, I <sub>C</sub> =0.5A                    | 4   |     |     | MHz  |

**UTC** UNISONIC TECHNOLOGIES CO., LTD.

## CHARACTERISTICS CURVES



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