

# UTC2SA1020

# PNP EPITAXIAL SILICON TRANSISTOR

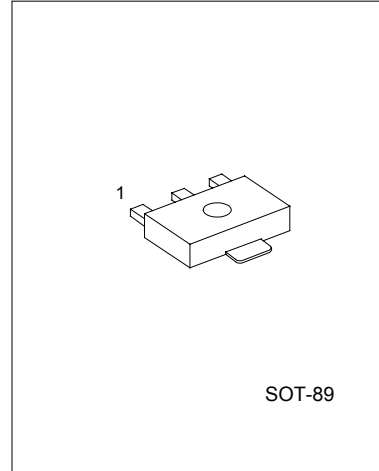
## SILICON PNP EPITAXIAL TRANSISTOR

### DESCRIPTION

The UTC 2SA1020 is designed for power amplifier and power switching applications.

### FEATURES

- \*Low collector saturation voltage:  
VCE(sat)=-0.5V(max.) (IC=-1A)
- \*High speed switching time: tstg=1.0μs(Typ.)
- \*Complement to UTC 2SC2655



SOT-89

1:EMITTER 2:COLLECTOR 3:BASE

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

| PARAMETER                   | SYMBOL           | VALUE      | UNIT |
|-----------------------------|------------------|------------|------|
| Collector-Base Voltage      | V <sub>CB0</sub> | -50        | V    |
| Collector-Emitter Voltage   | V <sub>CEO</sub> | -50        | V    |
| Emitter-Base Voltage        | V <sub>EB0</sub> | -5         | V    |
| Collector Current           | I <sub>c</sub>   | -2         | A    |
| Collector Power Dissipation | P <sub>c</sub>   | 0.5        | W    |
| Collector Power Dissipation | P <sub>c</sub> * | 1          | W    |
| Junction Temperature        | T <sub>j</sub>   | 150        | °C   |
| Storage Temperature         | T <sub>STG</sub> | -55 ~ +150 | °C   |

\* : Mounted on ceramic substrate( 250mm<sup>2</sup> × 0.8t )

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

| PARAMETER                               | SYMBOL               | TEST CONDITIONS                                  | MIN  | TYP | MAX  | UNIT |    |
|---|----------------------|--|------|-----|------|------|----|
| Collector cut-off current               | I <sub>CB0</sub>     | V <sub>CB</sub> =-50V, I <sub>E</sub> =0         |      |     | -1.0 | μA   |    |
| Emitter cut-off current                 | I <sub>EB0</sub>     | V <sub>EB</sub> =-5V, I <sub>C</sub> =0          |      |     | -1.0 | μA   |    |
| Collector to emitter breakdown voltage  | V(BR)CEO             | I <sub>c</sub> =-10mA, I <sub>B</sub> =0         | -50  |     |      | V    |    |
| DC Current Gain                         | h <sub>FE1</sub>     | V <sub>CE</sub> =-2V, I <sub>C</sub> =-0.5A      | 70   |     | 240  |      |    |
|   | h <sub>FE2</sub>     | V <sub>CE</sub> =-2V, I <sub>C</sub> =-1.5A      | 40   |     |      |      |    |
| Collector to emitter saturation voltage | V <sub>CE(sat)</sub> | I <sub>c</sub> =-1A, I <sub>B</sub> =-0.05A      |      |     | -0.5 | V    |    |
| Base to emitter saturation voltage      | V <sub>BE(sat)</sub> | I <sub>c</sub> =-1A, I <sub>B</sub> =-0.05A      |      |     | -1.2 | V    |    |
| Transition frequency                    | f <sub>T</sub>       | V <sub>CE</sub> =-2V, I <sub>C</sub> =-0.5A      |      | 100 |      | MHz  |    |
| Collector output capacitance            | C <sub>ob</sub>      | V <sub>CB</sub> =-10V, I <sub>E</sub> =0, f=1MHz |      | 40  |      | pF   |    |
| Switching time                          | Turn-on time         |  |      | 0.1 |      | μs   |    |
|   | Storage time         |  | tstg |     | 1.0  |      | μs |
|   | Fall time            |  | tf   |     | 0.1  |      | μs |

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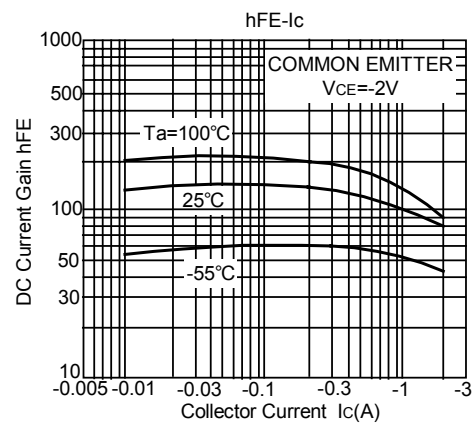
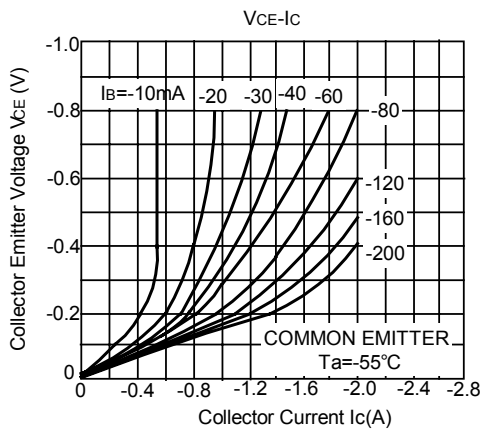
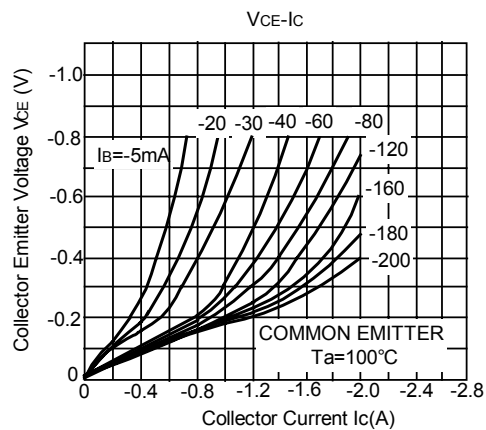
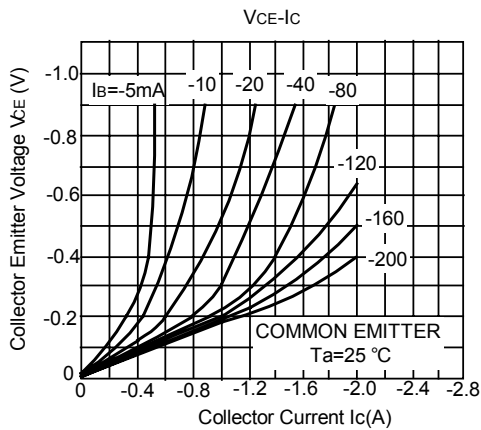
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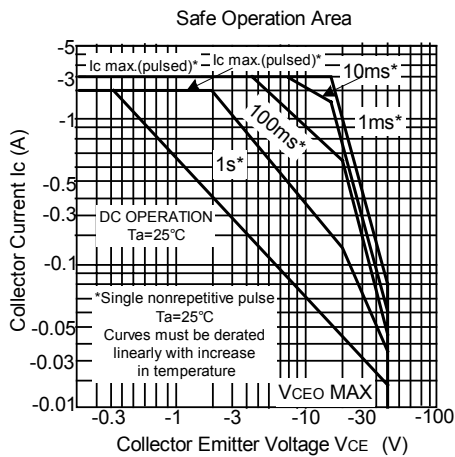
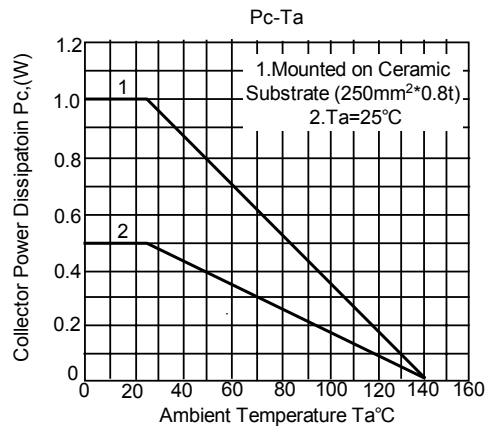
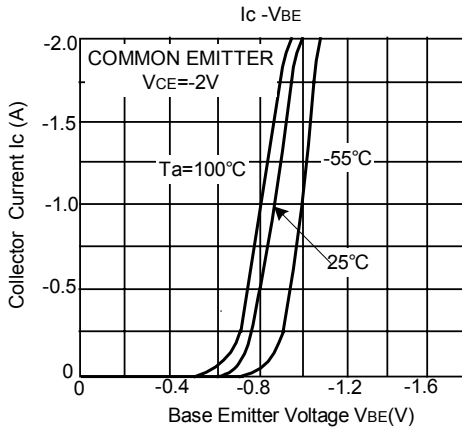
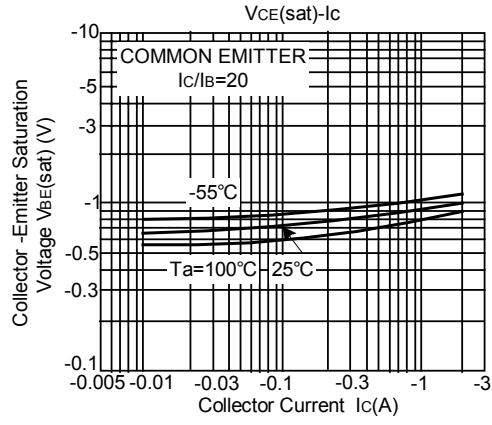
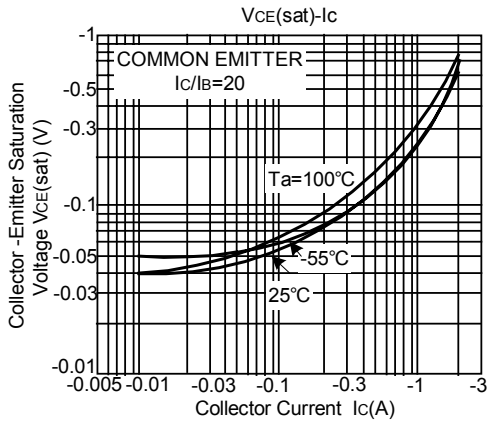
# UTC2SA1020 PNP EPITAXIAL SILICON TRANSISTOR

## CLASSIFICATION OF $h_{FE1}$

| RANK  | O        | Y         |
|-------|----------|-----------|
| RANGE | 70 - 140 | 120 - 240 |

## TYPICAL PERFORMANCE CHARACTERISTICS





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