

UTC2SD1664 NPN EPITAXIAL SILICON TRANSISTOR

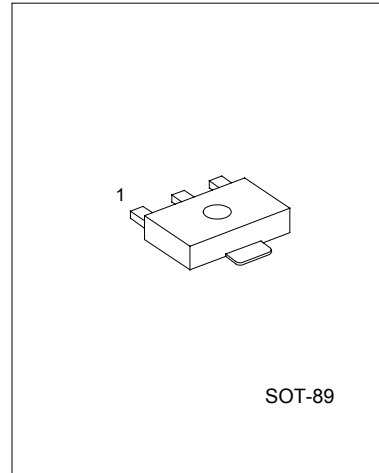
MEDIUM POWER NPN TRANSISTOR

DESCRIPTION

The UTC 2SD1664 is an epitaxial planar type NPN silicon transistor.

FEATURES

- *Low $V_{CE(sat)}$: $V_{CE(sat)} = 0.15V$ (Typ)
($I_C/I_B = 500mA/50mA$)
- *Complement the 2SB1132.



SOT-89

1:EMITTER 2:COLLECTOR 3:BASE

ABSOLUTE MAXIMUM RATINGS ($T_a=25^{\circ}C$)

| PARAMETER | SYMBOL | RATING | UNIT |
|------------------------------------|---|------------|-------------|
| Collector-Base Voltage | V_{CB0} | 40 | V |
| Collector-Emitter Voltage | V_{CEO} | 32 | V |
| Emitter-Base Voltage | V_{EB0} | 5 | V |
| Collector Current DC PULSE (Note1) | I_C <small>www.DataSheet4U.com</small> | 1 | A |
| | | 2 | A |
| Collector Power Dissipation | P_C | 0.5 | W |
| | | 2 (Note2) | W |
| Junction Temperature | T_j | 150 | $^{\circ}C$ |
| Storage Temperature | T_{STG} | -55 ~ +150 | $^{\circ}C$ |

Note1: Duty=1/2, $P_w=20ms$

Note2: When mounted on a 40*40*0.7 mm ceramic board.

ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}C$, unless otherwise specified)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--------------------------------------|---------------|--|-----|------|-----|---------|
| Collector Base Breakdown Voltage | BV_{CB0} | $I_C = 50 \mu A$ | 40 | | | V |
| Collector Emitter Breakdown Voltage | BV_{CEO} | $I_C = 1mA$ | 32 | | | V |
| Emitter Base Breakdown Voltage | BV_{EB0} | $I_E = 50 \mu A$ | 5 | | | V |
| Collector Cut-Off Current | I_{CBO} | $V_{CB} = 20V$ | | | 0.5 | μA |
| Emitter Cut-Off Current | I_{EBO} | $V_{EB} = 4V$ | | | 0.5 | μA |
| DC Current Transfer Ratio | h_{FE} | $V_{CE} = 3V, I_C = 100mA$ | 82 | | 390 | |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C/I_B = 500mA/50mA$ | | 0.15 | 0.4 | V |
| Transition Frequency | f_T | $V_{CE} = 5V, I_E = -50mA, f = 100MHz$ | | 150 | | MHz |
| Output Capacitance | C_{ob} | $V_{CB} = 10V, I_E = 0A, f = 1MHz$ | | 15 | | pF |

CLASSIFICATION OF h_{FE}

| RANK | P | Q | R |
|-------|--------|---------|---------|
| RANGE | 82-180 | 120-270 | 180-390 |

UTC UNISONIC TECHNOLOGIES CO. LTD

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QW-R208-025,A

ELECTRICAL CHARACTERISTICS CURVES

Figure 1. Grounded Emitter Propagation Characteristics

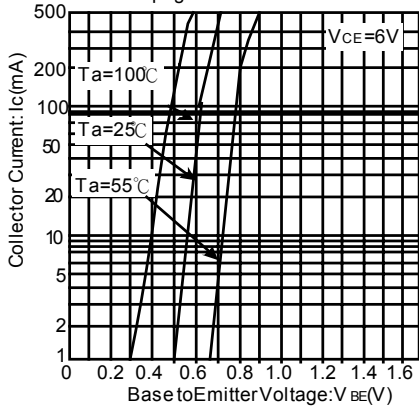


Figure 3. DC Current Gain vs. Collector Current (I)

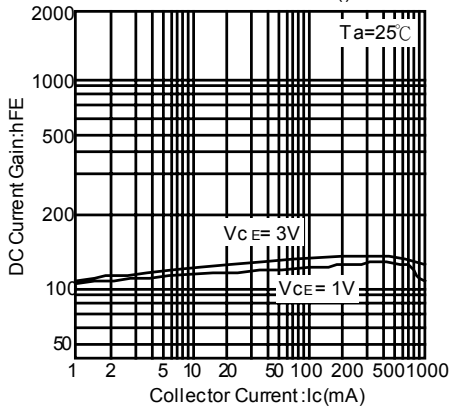


Figure 5. Collector-emitter Saturation Voltage vs. Collector Current (I)

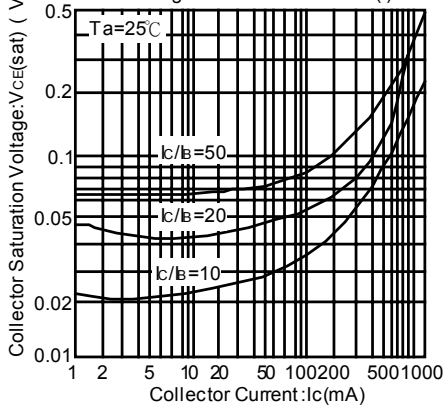


Figure 2. Grounded Emitter Output Characteristics

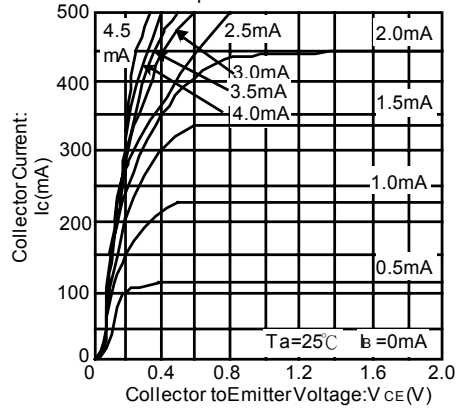


Figure 4. DC Current Gain vs. Collector Current (II)

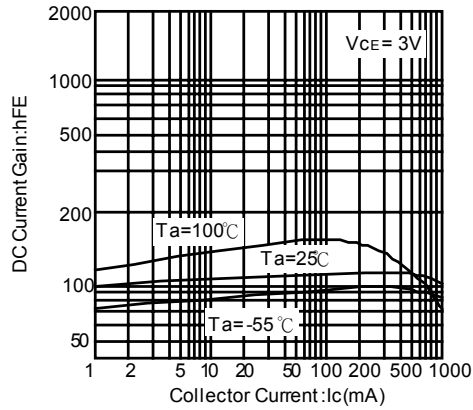


Figure 6. Collector-emitter Saturation Voltage vs. Collector Current (II)

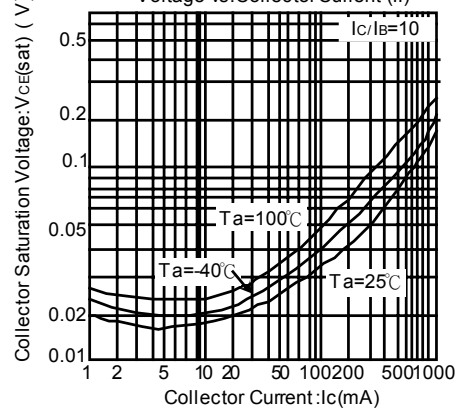


Figure 7. Gain Bandwidth Product vs. Emitter Current

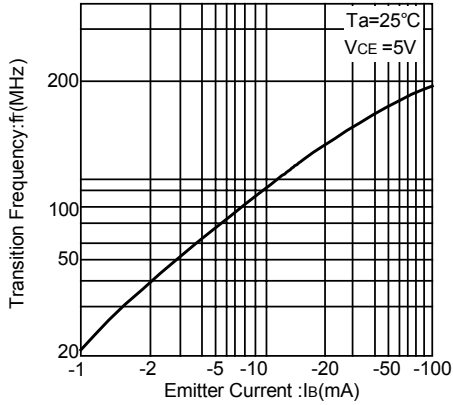


Figure 8. Collector Output Capacitance vs. Collector-base Voltage

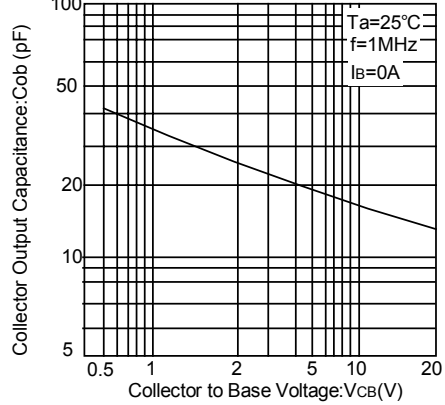


Figure 9. Safe Operation Area

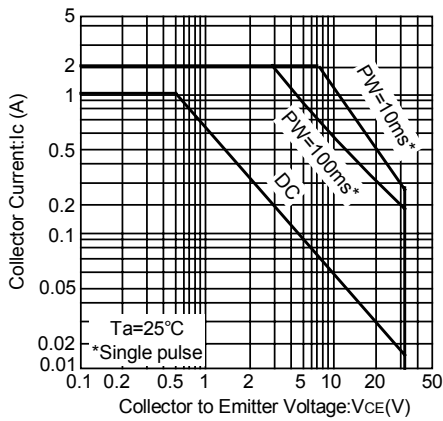
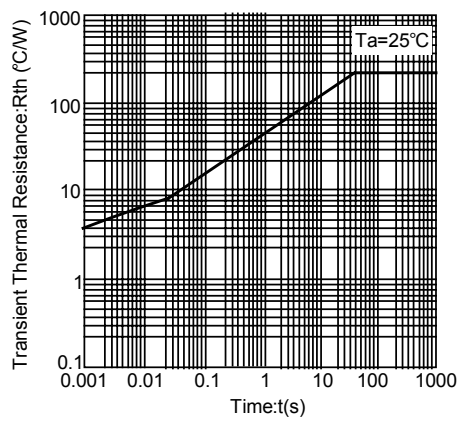


Figure 10. Transient Thermal Resistance



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