

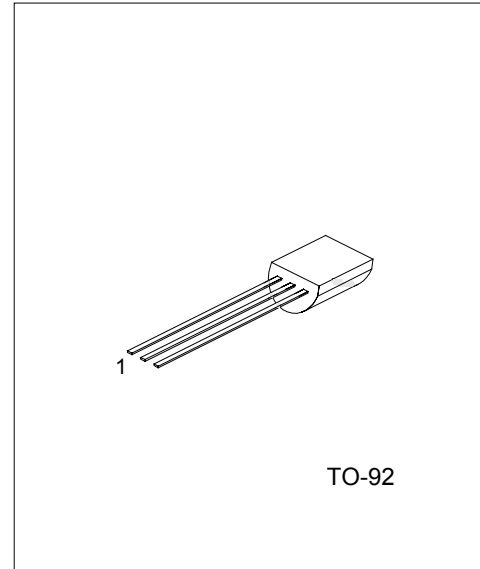
LOW VOLTAGE HIGH CURRENT  
NPN TRANSISTOR

**FEATURES**

- \* Collector current up to 5A
- \* 2SD965B : Collector-Emitter voltage up to 30 V

**APPLICATIONS**

- \* Audio amplifier
- \* Flash unit of camera
- \* Switching circuit



1: EMITTER 2: COLLECTOR 3: BASE

\*Pb-free plating product number: 2SD965BL

**ABSOLUTE MAXIMUM RATINGS**

( Ta=25°C )

| PARAMETER                      | SYMBOL           | RATINGS    | UNIT |
|--------------------------------|------------------|------------|------|
| Collector-base voltage         | V <sub>CB0</sub> | 40         | V    |
| Collector-emitter voltage      | V <sub>CEO</sub> | 30         | V    |
| Emitter-base voltage           | V <sub>EB0</sub> | 7          | V    |
| Collector dissipation(Ta=25°C) | P <sub>c</sub>   | 750        | mW   |
| Collector current              | I <sub>c</sub>   | 5          | A    |
| Junction Temperature           | T <sub>j</sub>   | 150        | °C   |
| Storage Temperature            | T <sub>STG</sub> | -65 ~ +150 | °C   |

**ELECTRICAL CHARACTERISTICS**

(Ta=25°C, unless otherwise specified)

| PARAMETER                            | SYMBOL  | TEST CONDITIONS  | MIN        | TYP | MAX | UNIT |
|--------------------------------------|---|--|------------|-----|-----|------|
| Collector-base breakdown voltage     | BV <sub>CB0</sub>   | I <sub>c</sub> =100μA, I <sub>E</sub> =0   | 40         |     |     | V    |
| Collector-emitter breakdown voltage  | BV <sub>CEO</sub>   | I <sub>c</sub> =1mA, I <sub>B</sub> =0   | 30         |     |     | V    |
| Emitter-base breakdown voltage       | BV <sub>EB0</sub>   | I <sub>E</sub> =10μA, I <sub>c</sub> =0  | 7          |     |     | V    |
| Collector cut-off current            | I <sub>CB0</sub>  | V <sub>CB</sub> =30V, I <sub>E</sub> =0  |            |     | 200 | nA   |
| Emitter cut-off current              | I <sub>EB0</sub>  | V <sub>EB</sub> =7V, I <sub>c</sub> =0   |            |     | 200 | nA   |
| DC current gain(note)                | h <sub>FE</sub> 1<br>h <sub>FE</sub> 2<br>h <sub>FE</sub> 3 | V <sub>CE</sub> =2V, I <sub>c</sub> =1mA<br>V <sub>CE</sub> =2V, I <sub>c</sub> =0.5A<br>V <sub>CE</sub> =2V, I <sub>c</sub> =2A | 230<br>150 | 200 | 800 |      |
| Collector-emitter saturation voltage | V <sub>CE(sat)</sub>  | I <sub>c</sub> =3A, I <sub>B</sub> =0.1A   |            |     | 1   | V    |
| Current gain bandwidth product       | f <sub>T</sub>  | V <sub>CE</sub> =6V, I <sub>c</sub> =50mA  |            | 150 |     | MHz  |
| Output capacitance                   | C <sub>ob</sub>   | V <sub>CB</sub> =20V, I <sub>E</sub> =0, f=1MHz  |            |     | 50  | pF   |

**CLASSIFICATION OF h<sub>FE</sub>2**

| RANK  | Q       | R       | S       |
|-------|---------|---------|---------|
| RANGE | 230-380 | 340-600 | 560-800 |

TYPICAL CHARACTERISTIC CURVES

Fig.1 Static characteristics

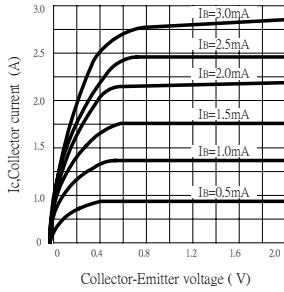


Fig.2 DC current Gain

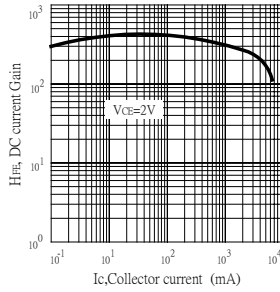


Fig.3 Base-Emitter on Voltage

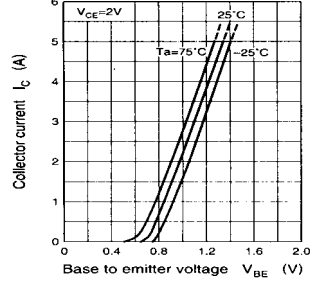


Fig.4 Saturation voltage

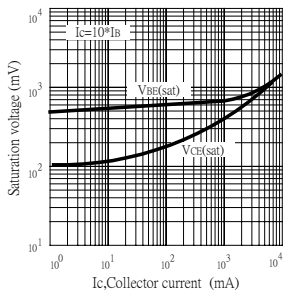


Fig.5 Current gain-bandwidth product

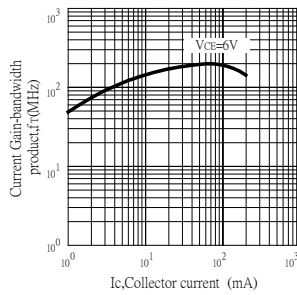
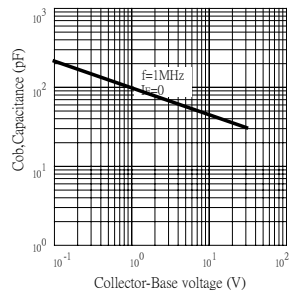


Fig.6 Collector output Capacitance



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.