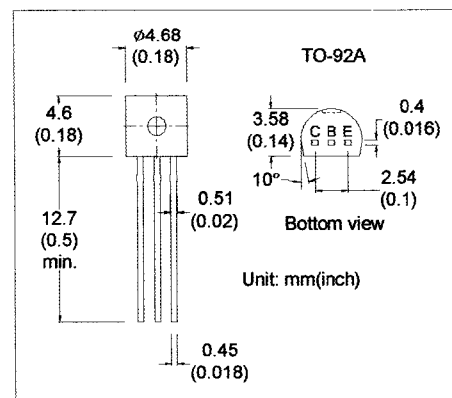


## DESCRIPTION

2N5830 and 2N5831 are NPN silicon planar transistors designed for small signal high voltage general purpose amplifiers.



## ABSOLUTE MAXIMUM RATINGS

|                                                |                                   | 2N5830        | 2N5831 |
|------------------------------------------------|-----------------------------------|---------------|--------|
| Collector-Emitter Voltage                      | V <sub>CEO</sub>                  | 100V          | 140V   |
| Collector-Base Voltage                         | V <sub>CBO</sub>                  | 120V          | 160V   |
| Emitter-Base Voltage                           | V <sub>EBO</sub>                  | 5V            | 5V     |
| Collector Current Continuous                   | I <sub>C</sub>                    | 600mA         | 600mA  |
| Total Power Dissipation @ T <sub>a</sub> =25°C | P <sub>tot</sub>                  | 625mW         | 625mW  |
| Operating & Storage Junction Temperature       | T <sub>j</sub> , T <sub>stg</sub> | -55 to +150°C |        |

## ELECTRICAL CHARACTERISTICS

(T<sub>a</sub>=25°C, unless otherwise noted)

| PARAMETER                            | SYMBOL                 | 2N5830 |     | 2N5831 |     | UNIT | CONDITIONS                                |
|--------------------------------------|------------------------|--------|-----|--------|-----|------|-------------------------------------------|
|                                      |                        | MIN    | MAX | MIN    | MAX |      |                                           |
| Collector-Emitter Breakdown Voltage  | BV <sub>CEO</sub> *    | 100    |     | 140    |     | V    | I <sub>C</sub> =1mA I <sub>B</sub> =0     |
| Collector-Base Breakdown Voltage     | BV <sub>CBO</sub>      | 120    |     | 160    |     | V    | I <sub>C</sub> =100μA I <sub>E</sub> =0   |
| Emitter-Base Breakdown Voltage       | BV <sub>EBO</sub>      | 5      |     | 5      |     | V    | I <sub>E</sub> =10μA I <sub>C</sub> =0    |
| Collector Cutoff Current             | I <sub>CBO</sub>       | 50     |     | 50     |     | nA   | V <sub>CB</sub> =100V I <sub>E</sub> =0   |
|                                      |                        |        |     |        |     | nA   | V <sub>CB</sub> =120V I <sub>E</sub> =0   |
| Emitter Cutoff Current               | I <sub>EBO</sub>       | 50     |     | 50     |     | nA   | V <sub>EB</sub> =4V I <sub>C</sub> =0     |
| D.C. Current Gain                    | h <sub>FE</sub> *      | 60     |     | 60     |     |      | V <sub>CE</sub> =5V I <sub>C</sub> =1mA   |
|                                      |                        | 80     | 500 | 80     | 250 |      | V <sub>CE</sub> =5V I <sub>C</sub> =10mA  |
|                                      |                        | 50     |     | 50     |     |      | V <sub>CE</sub> =5V I <sub>C</sub> =50mA  |
| Collector-Emitter Saturation Voltage | V <sub>CE(sat)</sub> * | 0.15   | 0.2 | 0.15   | 0.2 | V    | I <sub>C</sub> =1mA I <sub>B</sub> =0.1mA |
|                                      |                        |        |     |        |     | V    | I <sub>C</sub> =10mA I <sub>B</sub> =1mA  |
|                                      |                        |        |     |        |     | V    | I <sub>C</sub> =50mA I <sub>B</sub> =5mA  |
| Base-Emitter Saturation Voltage      | V <sub>BE(sat)</sub> * | 0.8    | 1.0 | 0.8    | 1.0 | V    | I <sub>C</sub> =1mA I <sub>B</sub> =0.1mA |
|                                      |                        |        |     |        |     | V    | I <sub>C</sub> =10mA I <sub>B</sub> =1mA  |
|                                      |                        |        |     |        |     | V    | I <sub>C</sub> =50mA I <sub>B</sub> =5mA  |
| Base-Emitter Voltage                 | V <sub>BE</sub> *      | 0.8    |     | 0.8    |     | V    | V <sub>CE</sub> =5V I <sub>C</sub> =1mA   |
| Small Signal Current Gain            | h <sub>fe</sub>        | 60     |     | 60     |     |      | V <sub>CE</sub> =10V I <sub>C</sub> =1mA  |
|                                      |                        |        |     |        |     |      | f=1kHz                                    |
| Collector-Base Capacitance           | C <sub>cb</sub>        | 4      |     | 4      |     | pF   | V <sub>CB</sub> =10V I <sub>E</sub> =0    |
|                                      |                        |        |     |        |     |      | f=1MHz                                    |

\* Pulse test : Pulse width =300μs, duty cycle <2%.

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