FAIRCHILD SEMICONDUCTOR™

**DISCRETE POWER & SIGNAL TECHNOLOGIES**

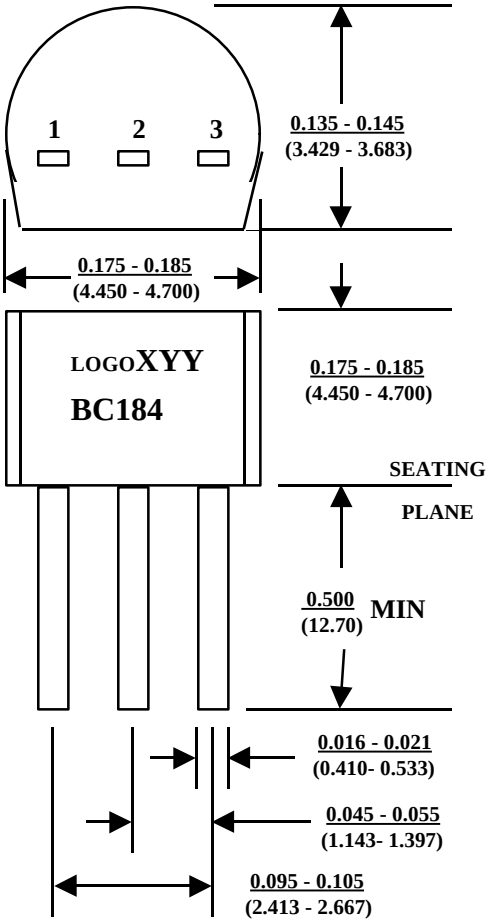
# BC184

## SILICON NPN SMALL SIGNAL TRANSISTOR

**$BV_{CEO}$ . . . . 30 V (Min)**

**$h_{FE}$ . . . . 130 (Min) @ $V_{CE}$ = 5.0 V, $I_C$ = 100 mA**

| 1 | 2 | 3 |
|---|---|---|
| E | B | C |




**ABSOLUTE MAXIMUM RATINGS** (NOTE 1)

**TEMPERATURES**

| | | |
|---|---|---|
| Storage Temperature | -55 Degrees C to | 150 Degrees C |
| Operating Junction Temperature | | 150 Degrees C |

**POWER DISSIPATION** (NOTES 2 & 3)

| | |
|---|---|
| Total Device Dissipation at TA = 25 Deg C | 625 mW |

**VOLTAGES & CURRENT**

| | | |
|---|---|---|
| $V_{CEO}$ | Collector to Emitter | 30 V |
| $V_{CBO}$ | Collector to Base | 45 V |
| $V_{EBO}$ | Emitter to Base | 5 V |
| $I_C$ | Collector Current | 500 mA |

**ELECTRICAL CHARACTERISTICS** (25 Degrees C Ambient Temperature unless otherwise stated)

| SYM | CHARACTERISTICS | MIN | MAX | UNITS | TEST CONDITIONS |
|---|---|---|---|---|---|
| $BV_{CBO}$ | Collector to Base Voltage | 45 | | V | $I_C$ = 10 uA |
| $BV_{CEO}$ | Collector to Emitter Voltage | 30 | | V | $I_C$ = 2.0 mA |
| $BV_{EBO}$ | Emitter to Base Voltage | 5 | | V | $I_E$ = 10 uA |
| $I_{CBO}$ | Collector Cutoff Current | | 15 | nA | $V_{CB}$ = 30 V |
| $I_{EBO}$ | Collector Cutoff Current | | 15 | nA | $V_{EB}$ = 4 V |
| $h_{FE}$ | DC Current Gain | 100<br>130 | | | $V_{CE}$ = 5.0 V $I_C$ = 10 uA<br>$V_{CE}$ = 5.0 V $I_C$ = 100 mA |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | | 0.25<br>0.6 | V<br>V | $I_C$ = 10mA $I_B$ = 0.5mA<br>$I_C$ = 100mA $I_B$ = 5.0mA |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | | 1.2 | V | $I_C$ = 100mA $I_B$ = 5.0mA |
| $V_{BE(on)}$ | Base -Emitter On Voltage | 0.55 | 0.7 | V | $V_{CE}$ = 5.0 V $I_C$ = 2mA |

# BC184

## SILICON NPN SMALL SIGNAL TRANSISTOR

**ELECTRICAL CHARACTERISTICS Con't** (25 Degrees C Ambient Temperature unless otherwise stated)

| SYM | CHARACTERISTICS | MIN | MAX | UNITS | TEST CONDITIONS |
|---|---|---|---|---|---|
| $C_{OB}$ | Output Capacitance | | 5.0 | pF | $V_{CB}$ = 10 V, f = 1 MHz |
| fT | Current Gain - Bandwidth Product | 150 | | MHz | $V_{CE}$ = 5 V $I_C$ = 10 mA f = 100 Mhz |
| hfe | Small Signal Current Gain | 125 | 500 | - | $V_{CE}$ = 5 V, $I_C$=2.0 mA, f =1KHz |
| NF | Noise Figure | | 4 | dB | $V_{CE}$ = 5 V, $I_C$ = 200 uA, Rg = 2 Kohms, f = 30Hz to 15KHz |

NOTES:

1. These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.
3. These ratings are based on a maximum junction temperature of 150 degrees C.

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|---|---|---|
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