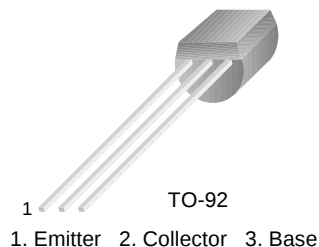


# BC184L

## Silicon NPN Small Signal Transistor (Note 1)

- $BV_{CEO} = 30V$  (Min.)
- $h_{FE} = 130$  (Min.) @  $V_{CE} = 5.0V$ ,  $I_C = 100mA$



## Absolute Maximum Ratings $T_C=25^{\circ}C$ unless otherwise noted

| Symbol    | Parameter                                               | Value      | Units       |
|-----------|---------------------------------------------------------|------------|-------------|
| $V_{CBO}$ | Collector-Base Voltage                                  | 45         | V           |
| $V_{CEO}$ | Collector-Emitter Voltage                               | 30         | V           |
| $V_{EBO}$ | Emitter-Base Voltage                                    | 5          | V           |
| $I_C$     | Collector Current (DC)                                  | 500        | mA          |
| $P_C$     | Collector Dissipation ( $T_a=25^{\circ}C$ ) (Note 2, 3) | 350        | mW          |
| $T_J$     | Junction Temperature                                    | 150        | $^{\circ}C$ |
| $T_{STG}$ | Storage Temperature                                     | - 55 ~ 150 | $^{\circ}C$ |

## Electrical Characteristics $T_C=25^{\circ}C$ unless otherwise noted

| Symbol        | Parameter                            | Test Condition                                                   | Min.       | Typ. | Max.        | Units |
|---------------|--------------------------------------|------------------------------------------------------------------|------------|------|-------------|-------|
| $BV_{CBO}$    | Collector-Base Voltage               | $I_C = 10\mu A$                                                  | 45         |      |             | V     |
| $BV_{CEO}$    | Collector-Emitter Voltage            | $I_C = 2mA$                                                      | 30         |      |             | V     |
| $BV_{EBO}$    | Emitter-Base Voltage                 | $I_E = 10\mu A$                                                  | 5          |      |             | V     |
| $I_{CBO}$     | Collector Cut-off Current            | $V_{CB} = 30V$                                                   |            |      | 15          | nA    |
| $I_{EBO}$     | Emitter Cut-off Current              | $V_{EB} = 3V$                                                    |            |      | 15          | nA    |
| $h_{FE}$      | DC Current Gain                      | $V_{CE} = 5V$ , $I_C = 10\mu A$<br>$V_{CE} = 5V$ , $I_C = 100mA$ | 100<br>130 |      |             |       |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = 10mA$ , $I_B = 0.5mA$<br>$I_C = 100mA$ , $I_B = 5mA$      |            |      | 0.6<br>0.25 | V     |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage      | $I_C = 100mA$ , $I_B = 5mA$                                      |            |      | 1.2         | V     |
| $V_{BE(on)}$  | Base-Emitter On Voltage              | $V_{CE} = 5V$ , $I_C = 2mA$                                      | 0.55       |      | 0.7         | V     |
| $C_{OB}$      | Output Capacitance                   | $V_{CE} = 10V$ , $f = 1MHz$                                      |            |      | 5           | pF    |
| $f_T$         | Current gain Bandwidth Product       | $V_{CE} = 5V$ , $I_C = 10mA$<br>$f = 100MHz$                     | 150        |      |             | MHz   |
| $h_{FE}$      | Small Signal Current Gain            | $V_{CE} = 5V$ , $I_C = 2mA$<br>$f = 1KHz$                        | 450        |      | 900         |       |
| NF            | Noise Figure                         | $V_{CE} = 5V$ , $I_C = 200mA$<br>$R_G = 2K\Omega$ , $f = 1KHz$   |            |      | 4           | dB    |

### 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 150degrees C.

# Package Dimensions

## TO-92



Dimensions in Millimeters

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