*New Jersey Semi-Conductor Products, Inc.*

20 STERN AVE.
SPRINGFIELD, NEW JERSEY 07081
U.S.A.

TELEPHONE: (973) 376-2922
(212) 227-6005
FAX: (973) 376-8960

# BC182L

## NPN General Purpose Amplifier

- This device is designed for general purpose amplifier application at collector currents to 100mA.
- Sourced from process 10.

## Absolute Maximum Ratings $T_C$=25°C unless otherwise noted

| Symbol | Parameter | Value | Units |
|---|---|---|---|
| $V_{CEO}$ | Collector-Emitter Voltage | 50 | V |
| $V_{CBO}$ | Collector-Base Voltage | 60 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 6 | V |
| $I_C$ | Collector Current - Continuous | 100 | mA |
| $T_J$, $T_{STG}$ | Storage Junction Temperature Range | - 55 ~ 150 | °C |

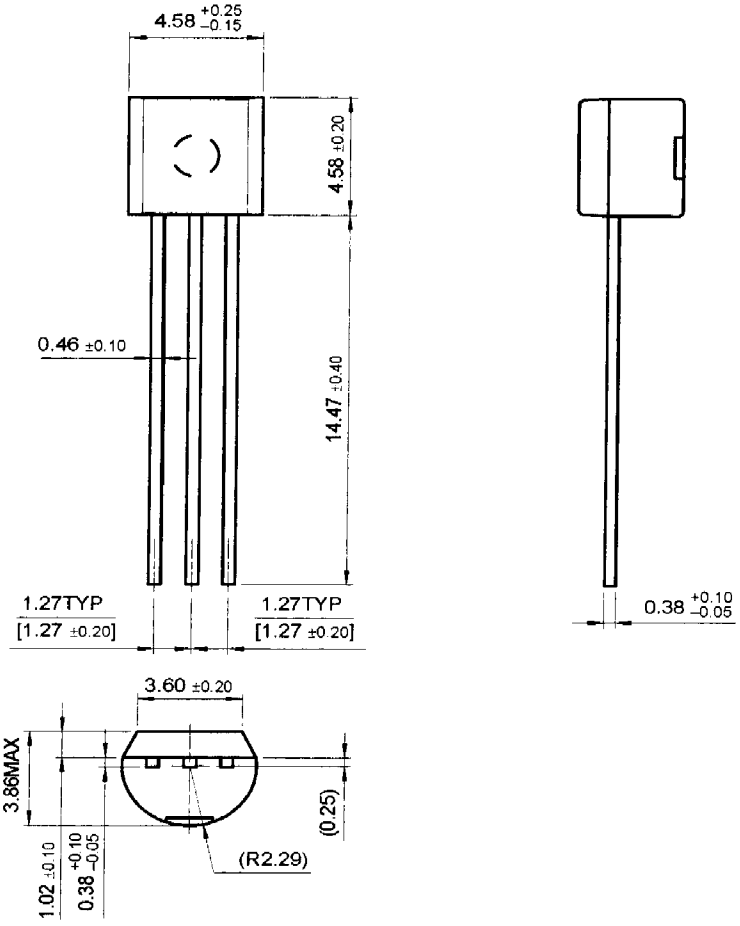
## Electrical Characteristics $T_C$=25°C unless otherwise noted

| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|
| **Off Characteristics** | | | | | | |
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | $I_C$ = 2mA, $I_B$ = 0 | 50 | | | V |
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage | $I_C$ = 10μA, $I_E$ = 0 | 60 | | | V |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage | $I_E$ = 100μA, $I_C$ = 0 | 6 | | | V |
| $I_{CBO}$ | Collector Cut-off Current | $V_{CB}$ = 50V, $V_{BE}$ = 0 | | | 15 | nA |
| $I_{EBO}$ | Emitter-Base Leakage Current | $V_{EB}$ = 4V, $I_E$ = 0 | | | 15 | nA |
| **On Characteristics** | | | | | | |
| $h_{FE}$ | DC Current Gain | $V_{CE}$ = 5V, $I_C$ = 10μA<br>$V_{CE}$ = 5V, $I_C$ = 2mA<br>$V_{CE}$ = 5V, $I_C$ = 100mA | 40<br>120<br>80 | | <br>500 | |
| $V_{CE}$(sat) | Collector-Emitter Saturation Voltage | $I_C$ = 10mA, $I_B$ = 0.5mA<br>$I_C$ = 100mA, $I_B$ = 5mA | | | 0.25<br>0.6 | 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 |
| **Dynamic Characteristics** | | | | | | |
| $f_T$ | Current Gain Bandwidth Product | $V_{CE}$ = 5V, $I_C$ = 10mA, f = 100MHz | 150 | | | MHz |
| $C_{ob}$ | Output Capacitance | $V_{CE}$ = 10V, $I_C$ = 0, f = 1MHz | | | 5 | pF |
| $h_{fe}$ | Small Signal Current Gain | $V_{CE}$ = 5V, $I_C$ = 2mA, f = 1KHz | 240 | | 500 | |
| NF | Noise Figure | $V_{CE}$ = 5V, $I_C$ = 0.2mA<br>$R_S$ = 2KΩ, f = 1KHz, BW = 200Hz | | | 10 | dB |

## Thermal Characteristics $T_A$=25°C unless otherwise noted

| Symbol | Parameter | Max. | Units |
|---|---|---|---|
| $P_D$ | Total Device Dissipation @$T_A$=25°C<br>Derate above 25°C | 350<br>2.8 | mW<br>mW/°C |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 357 | mW/°C |
| $R_{\theta JC}$ | Thermal Resistance, Junction to Case | 125 | °C/W |

# TO-92


4.58 +0.25 −0.15
4.58 ±0.20
0.46 ±0.10
14.47 ±0.40
1.27TYP
[1.27 ±0.20]
1.27TYP
[1.27 ±0.20]
0.38 +0.10 −0.05
3.60 ±0.20
3.86MAX
(0.25)
(R2.29)
1.02 ±0.10
0.38 +0.10 −0.05