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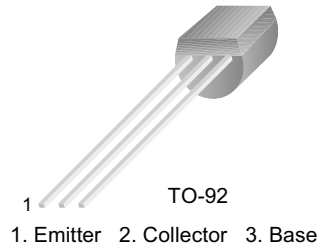


# BC214LC

BC214LC

## PNP General Purpose Amplifier

- This device is designed for use as general purpose amplifiers and switches requiring collector currents to 300mA.
- Sourced from process 68.



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

| Symbol         | Parameter  | Value      | Units            |
|----------------|--|------------|------------------|
| $V_{CEO}$      | Collector-Emitter Voltage                        | -30        | V                |
| $V_{CBO}$      | Collector-Base Voltage                           | -45        | V                |
| $V_{EBO}$      | Emitter-Base Voltage                             | -5.0       | V                |
| $I_C$          | Collector Current (DC) - Continuous              | -500       | mA               |
| $T_J, T_{STG}$ | Operating and Storage Junction Temperature Range | - 55 ~ 150 | $^\circ\text{C}$ |

\* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

### NOTES:

- 1) These ratings are based on a maximum junction temperature of 150 degrees C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations

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

| Symbol                              | Parameter                            | Test Condition  | Min. | Max.          | Units |
|-------------------------------------|--------------------------------------|---|------|---------------|-------|
| <b>Off Characteristics</b>          |                                      |   |      |               |       |
| $V_{(BR)CEO}$                       | Collector-Emitter Voltage            | $I_C = -2\text{mA}, I_B = 0$  | -30  |               | V     |
| $V_{(BR)CBO}$                       | Collector-Base Voltage               | $I_C = -10\mu\text{A}, I_E = 0$   | -45  |               | V     |
| $V_{(BR)EBO}$                       | Emitter-Base Voltage                 | $I_E = -10\mu\text{A}, I_C = 0$   | -5.0 |               | V     |
| $I_{CBO}$                           | Collector Cut-off Current            | $V_{CB} = -30\text{V}, I_E = 0$   |      | -15           | nA    |
| $I_{EBO}$                           | Emitter Cut-off Current              | $V_{EB} = -4\text{V}, I_C = 0$  |      | -15           | nA    |
| <b>On Characteristics *</b>         |                                      |   |      |               |       |
| $h_{FE}$                            | DC Current Gain                      | $V_{CE} = -5\text{V}, I_C = -2\text{mA}$  | 140  | 400           |       |
| $V_{CE(sat)}$                       | Collector-Emitter Saturation Voltage | $I_C = -10\text{mA}, I_B = -0.5\text{mA}$<br>$I_C = -100\text{mA}, I_B = -5\text{mA}$       |      | -0.25<br>-0.6 | V     |
| $V_{BE(sat)}$                       | Base-Emitter Saturation Voltage      | $I_C = -100\text{mA}, I_B = -5\text{mA}$  |      | -1.1          | V     |
| $V_{BE(on)}$                        | Base-Emitter On Voltage              | $V_{CE} = -5\text{V}, I_C = -2\text{mA}$  | -0.6 | -0.72         | V     |
| <b>Small Signal Characteristics</b> |                                      |   |      |               |       |
| $f_T$                               | Current gain Bandwidth Product       | $V_{CE} = -5\text{V}, I_C = -10\text{mA}$<br>$f = 100\text{MHz}$                            | 200  |               | MHz   |
| NF                                  | Noise Figure                         | $V_{CE} = -5\text{V}, I_C = -200\mu\text{A}$<br>$R_G = 2\text{k}\Omega, f = 15.7\text{KHz}$ |      | 2.0           | dB    |
| $h_{fe}$                            | Small Signal Current Gain            | $I_C = -2\text{mA}, V_{CE} = -5\text{V}$<br>$f = 1\text{KHz}$                               | 350  | 600           |       |
| $C_{OB}$                            | Output Capacitance                   | $V_{CB} = -10\text{V}, f = 1\text{MHz}$   |      | 10            | pF    |

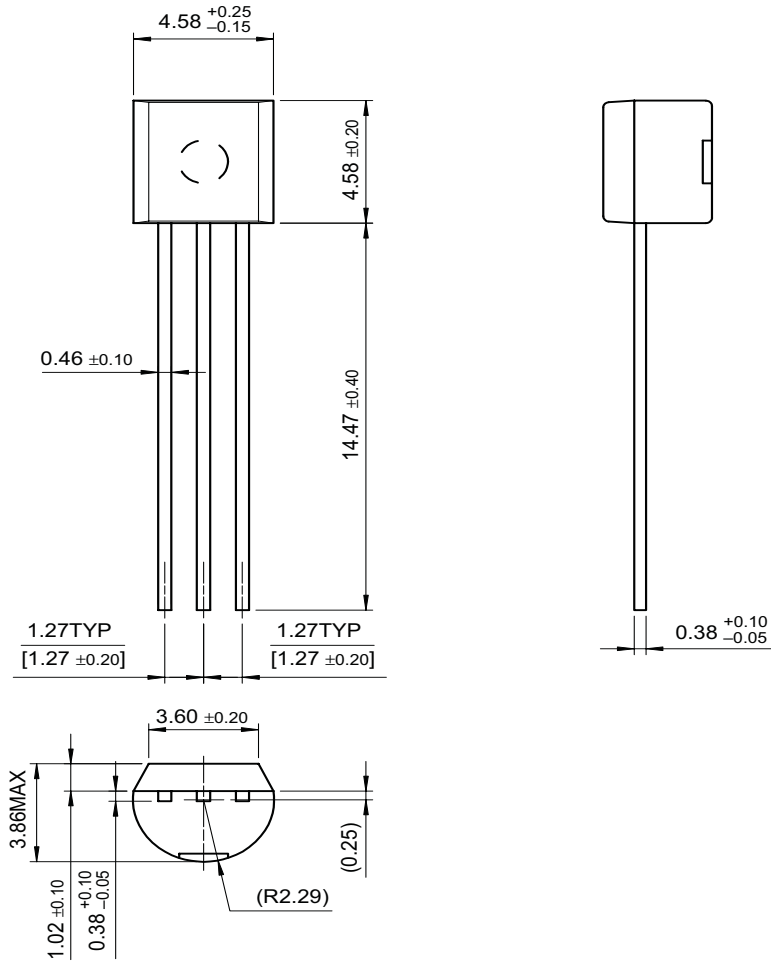
\* Pulse Test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$

**Thermal Characteristics**  $T_A=25^{\circ}\text{C}$  unless otherwise noted

| Symbol          | Parameter                               | Max. | Units                       |
|-----------------|---|------|-----------------------------|
| $P_D$           | Total Device Dissipation                | 625  | mW                          |
|                 | Derate above $25^{\circ}\text{C}$       | 5.0  | mW/ $^{\circ}\text{C}$      |
| $R_{\theta JC}$ | Thermal Resistance, Junction to Case    | 83.3 | $^{\circ}\text{C}/\text{W}$ |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 200  | $^{\circ}\text{C}/\text{W}$ |

# Package Dimensions

## TO-92



Dimensions in Millimeters

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