



# BC261 BC262 BC263

PNP HIGH GAIN, LOW NOISE  
SILICON PLANAR EPITAXIAL TRANSISTOR



**GENERAL DESCRIPTION :**

The BC261, BC262 and BC263 are PNP silicon planar epitaxial transistors.

The BC261 is intended for audio amplifier driver stage.

The BC262 is intended for general purpose applications.

The BC263 is intended for low noise, high gain pre-amplifier stage.

**MECHANICAL OUTLINE**

TO-18



CBE

**ABSOLUTE MAXIMUM RATINGS :**

|   | BC261                          | BC262                          | BC263                          |
|---|--------------------------------|--------------------------------|--------------------------------|
| Continuous Power Dissipation @ $T_A=25^{\circ}\text{C}$ , P max | 360mW                          | 360mW                          | 360mW                          |
| Continuous Collector Current, $I_C$ max                         | -200mA                         | -200mA                         | -200mA                         |
| Maximum Collector Junction Temperature, $T_j$                   | 200 $^{\circ}\text{C}$         | 200 $^{\circ}\text{C}$         | 200 $^{\circ}\text{C}$         |
| Storage Temperature Range, $T_{stg}$                            | -65 to +200 $^{\circ}\text{C}$ | -65 to +200 $^{\circ}\text{C}$ | -65 to +200 $^{\circ}\text{C}$ |
| Collector-Base Voltage, $V_{CBO}$                               | -45V                           | -20V                           | -20V                           |
| Collector-Emitter Voltage, $V_{CEO}$                            | -45V                           | -20V                           | -20V                           |
| Emitter-Base Voltage, $V_{EBO}$                                 | -5V                            | -5V                            | -5V                            |

**ELECTRICAL CHARACTERISTICS @  $T_A=25^{\circ}\text{C}$  (unless otherwise stated) :**

| PARAMETER                            | SYMBOL        | BC261 |      | BC262 |      | BC263 |      | UNIT | TEST CONDITIONS                         |
|--------------------------------------|---------------|-------|------|-------|------|-------|------|------|---|
|                                      |               | MIN   | MAX  | MIN   | MAX  | MIN   | MAX  |      |   |
| Collector Cutoff Current             | $I_{CBO}$     | -     | -50  | -     | -    | -     | -    | nA   | $V_{CB}=-45V$                           |
| Collector Cutoff Current             | $I_{CBO}$     | -     | -50  | -     | -    | -     | -    | uA   | $V_{CB}=-45V$ $T_A=150^{\circ}\text{C}$ |
| Collector Cutoff Current             | $I_{CBO}$     | -     | -    | -50   | -50  | -     | -    | nA   | $V_{CB}=-20V$                           |
| Collector Cutoff Current             | $I_{CBO}$     | -     | -    | -50   | -50  | -     | -    | uA   | $V_{CB}=-20V$ $T_A=150^{\circ}\text{C}$ |
| Emitter Cutoff Current               | $I_{EBO}$     | -100  | -    | -100  | -    | -100  | -    | nA   | $V_{EB}=-4V$                            |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | -250  | -    | -250  | -    | -250  | -    | mV   | $I_C=-10mA$ $I_B=-0.5mA$                |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | -600  | -    | -600  | -    | -600  | -    | mV   | $I_C=-100mA$ $I_B=-5mA$                 |
| Base-Emitter Saturation Voltage      | $V_{BE(sat)}$ | -900  | -    | -900  | -    | -900  | -    | mV   | $I_C=-10mA$ $I_B=-0.5mA$                |
| D.C. Current Gain                    | $h_{FE}$      | -     | -    | -     | -    | 40    | -    | -    | $V_{CE}=-5V$ $I_C=-10mA$                |
| Small Signal Current Gain            | $h_{fe}$      | 125   | 500* | 125   | 500* | 125   | 500* | -    | $V_{CE}=-5V$ $I_C=-2mA$                 |
| Transition Frequency                 | $f_T$         | 150   | -    | 150   | -    | 150   | -    | MHz  | $V_{CE}=-5V$ $I_C=-10mA$                |
| Collector-Base Capacitance           | $C_{ob}$      | 6     | -    | 6     | -    | 6     | -    | pF   | $V_{CB}=-10V$ $f=1MHz$                  |
| Noise Figure                         | N.F.          | 6     | -    | 6     | -    | 6     | -    | dB   | $V_{CE}=-2V$ $I_C=-0.2mA$               |
| Noise Figure                         | N.F..         | -     | -    | -     | -    | 2.5   | -    | dB   | $R_S=2Kohm$ $BW=200Hz$ $I_C=-0.2mA$     |
|                                      |               |       |      |       |      |       |      |      | $f=30Hz$ to 15KHz                       |

\* When Group C is required, this gain limit becomes 900.

FAX: 3-410321

----- CONTINUE -----

\* CURRENT GAIN GROUPINGS :

| PARAMETER | GROUP | BC261A |     | BC261B |     | BC261C |     | TEST CONDITIONS                           |
|-----------|-------|--------|-----|--------|-----|--------|-----|---|
|           |       | MIN    | MAX | MIN    | MAX | MIN    | MAX |   |
| $h_{fe}$  |       | 125    | 260 | 240    | 500 | 450    | 900 | $V_{CE} = -5V$ $I_C = -2mA$<br>$f = 1KHz$ |