

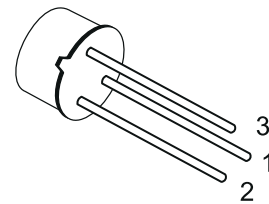
GENERAL PURPOSE TRANSISTOR

PRELIMINARY DATA

DESCRIPTION

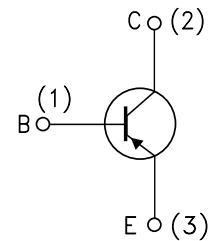
The BC161-16 is a silicon Planar Epitaxial PNP transistor in Jedec TO-39 metal case. It is particularly designed for audio amplifiers and switching application up to 1A.

The complementary NPN type is the BC141-16.



TO-39

INTERNAL SCHEMATIC DIAGRAM



SC08810

ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|-----------|--|-------------|------------------|
| V_{CBO} | Collector-Base Voltage ($I_E = 0$) | -60 | V |
| V_{CEO} | Collector-Emitter Voltage ($I_B = 0$) | -60 | V |
| V_{EBO} | Emitter-Base Voltage ($I_C = 0$) | -5 | V |
| I_C | Collector Current | -1 | A |
| I_B | Base Current | -0.1 | A |
| P_{tot} | Total Dissipation at $T_{amb} \leq 25^\circ\text{C}$ at $T_C \leq 25^\circ\text{C}$ | 0.65 3.7 | W W |
| T_{stg} | Storage Temperature | -55 to 175 | $^\circ\text{C}$ |
| T_j | Max. Operating Junction Temperature | 175 | $^\circ\text{C}$ |

THERMAL DATA

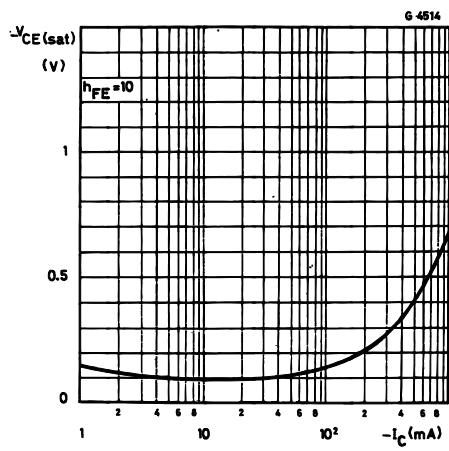
| | | | | |
|-----------------------|-------------------------------------|-----|-----|------|
| R _{thj-case} | Thermal Resistance Junction-Case | Max | 35 | °C/W |
| R _{thj-amb} | Thermal Resistance Junction-Ambient | Max | 200 | °C/W |

ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

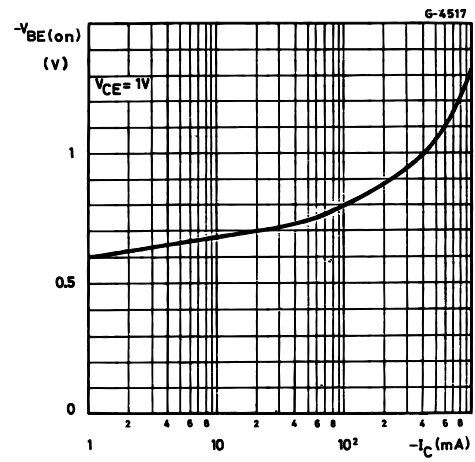
| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|------------------------|--|--|------|-----------------------|--------------|-------------|
| I _{CES} | Collector Cut-off Current (V _{BE} = 0) | V _{CE} = -60 V V _{CE} = -60 V T _{amb} = 150 °C | | | -100 -100 | nA μA |
| V _{(BR)CBO} * | Collector-Base Breakdown Voltage (I _E = 0) | I _C = -100 μA | -60 | | | V |
| V _{(BR)CEO} * | Collector-Emitter Breakdown Voltage (I _B = 0) | I _C = -10 mA | -60 | | | V |
| V _{(BR)EBO} * | Emitter-Base Breakdown Voltage (I _C = 0) | I _E = -100 μA | -5 | | | V |
| V _{CE(sat)} * | Collector-Emitter Saturation Voltage | I _C = -100 mA I _B = -10 mA I _C = -500 mA I _B = -50 mA I _C = -1 A I _B = -100 mA | | -0.1 -0.35 -0.6 | -1 | V V V |
| V _{BE(on)} * | Base-Emitter On Voltage | I _C = -1 A V _{CE} = -1 V | | -1 | -1.7 | V |
| h _{FE} * | DC Current Gain | I _C = -100 μA V _{CE} = -1 V I _C = -100 mA V _{CE} = -1 V I _C = -1 A V _{CE} = -1 V | 100 | 120 160 30 | 250 | |
| f _T | Transition Frequency | I _C = -50 mA V _{CE} = -10 V | 50 | | | MHz |
| C _{CBO} | Collector-Base Capacitance | I _E = 0 V _{CB} = -20 V f = 1MHz | | 15 | 30 | pF |
| C _{EBO} | Emitter-Base Capacitance | I _C = 0 V _{CB} = -0.5 V f = 1MHz | | | 180 | pF |
| t _{on} | Turn-on Time | I _C = -100 mA I _{B1} = -5 mA | | | 500 | ns |
| t _{off} | Turn-off Time | I _C = -100 mA I _{B1} = I _{B2} = -5 mA | | | 650 | ns |

* Pulsed: Pulse duration = 300 μs, duty cycle ≤ 1 %

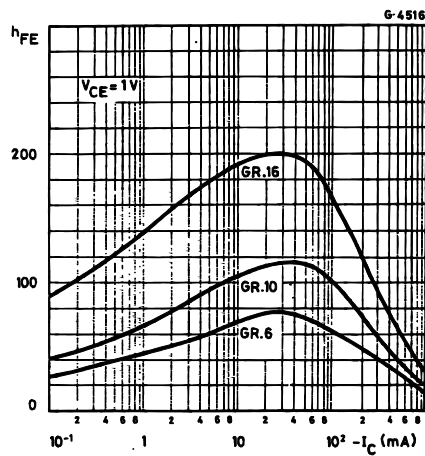
Collector-emitter Saturation Voltage.



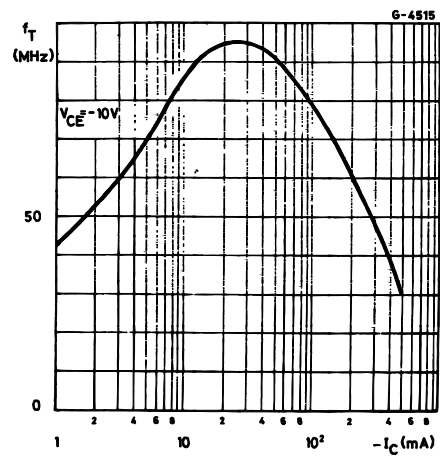
Base-emitter Voltage.



DC Current Gain.

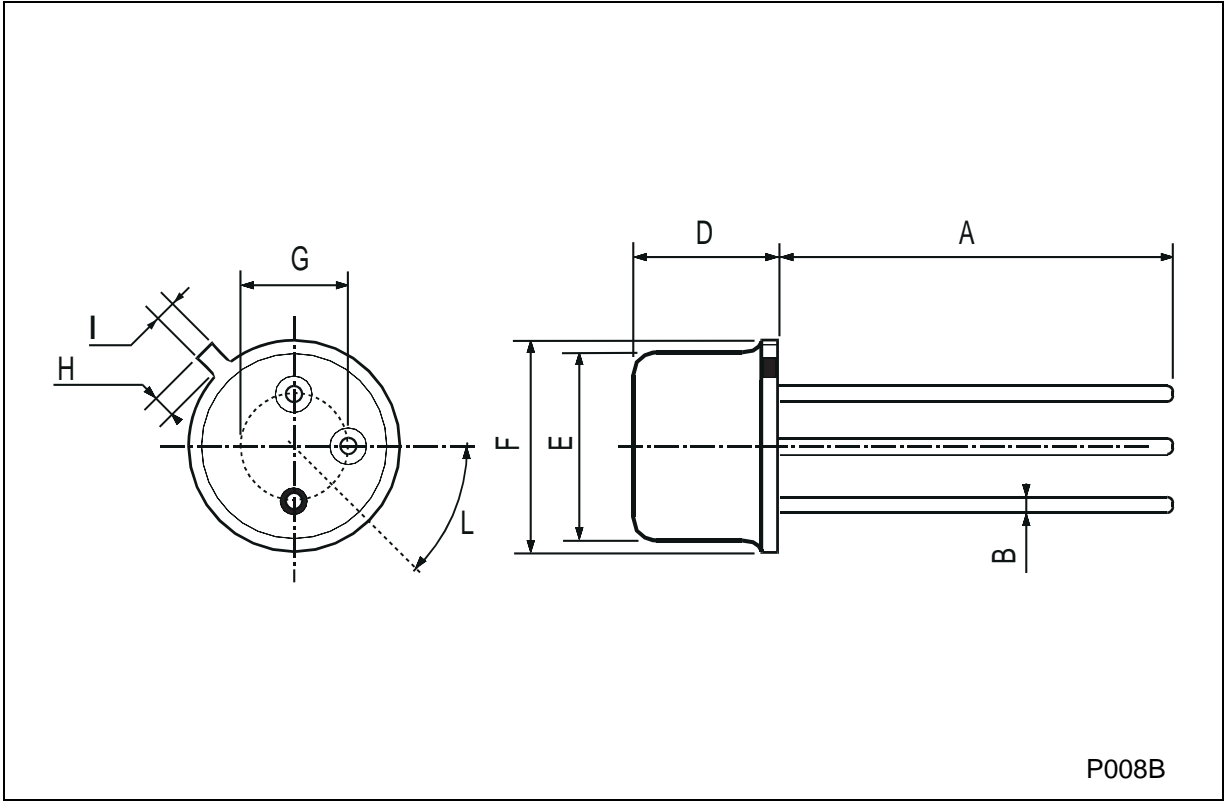


Transition Frequency.



TO-39 MECHANICAL DATA

| DIM. | mm | | | inch | | |
|------|------------|------|------|-------|------|-------|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | 12.7 | | | 0.500 | | |
| B | | | 0.49 | | | 0.019 |
| D | | | 6.6 | | | 0.260 |
| E | | | 8.5 | | | 0.334 |
| F | | | 9.4 | | | 0.370 |
| G | 5.08 | | | 0.200 | | |
| H | | | 1.2 | | | 0.047 |
| I | | | 0.9 | | | 0.035 |
| L | 45° (typ.) | | | | | |



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