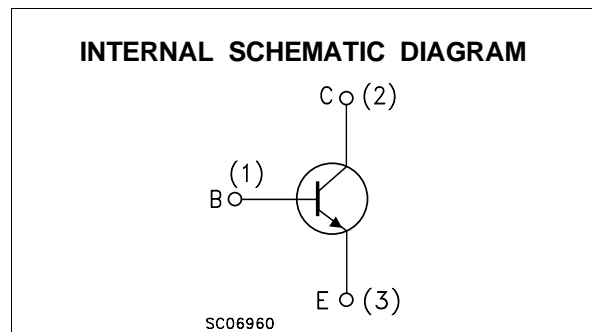
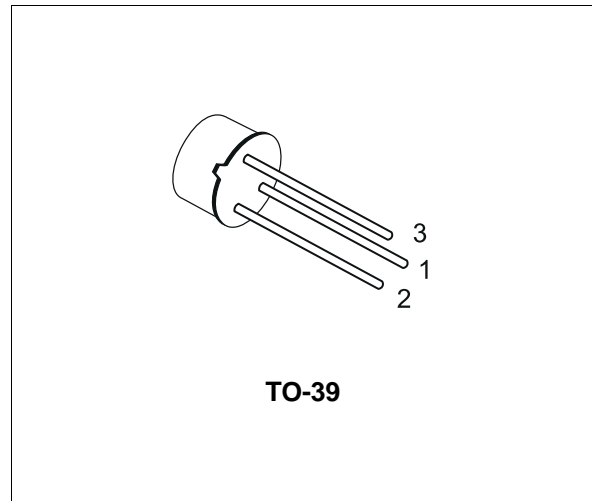


GENERAL PURPOSE TRANSISTOR

DESCRIPTION

The BC141-16 is a silicon Planar Epitaxial NPN transistor in Jedec TO-39 metal case. It is particularly designed for audio amplifiers and switching application up to 1A.

The complementary PNP type is the BC161-16.



ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|-----------|--|------------|------------------|
| V_{CBO} | Collector-Base Voltage ($I_E = 0$) | 100 | V |
| V_{CEO} | Collector-Emitter Voltage ($I_B = 0$) | 60 | V |
| V_{EBO} | Emitter-Base Voltage ($I_C = 0$) | 7 | V |
| I_C | Collector Current | 1 | A |
| I_B | Base Current | 0.1 | A |
| P_{tot} | Total Dissipation at $T_{amb} \leq 25\text{ }^\circ\text{C}$ at $T_C \leq 25\text{ }^\circ\text{C}$ | 0.65 | W |
| | | 3.7 | W |
| T_{stg} | Storage Temperature | -55 to 175 | $^\circ\text{C}$ |
| T_j | Max. Operating Junction Temperature | 175 | $^\circ\text{C}$ |

THERMAL DATA

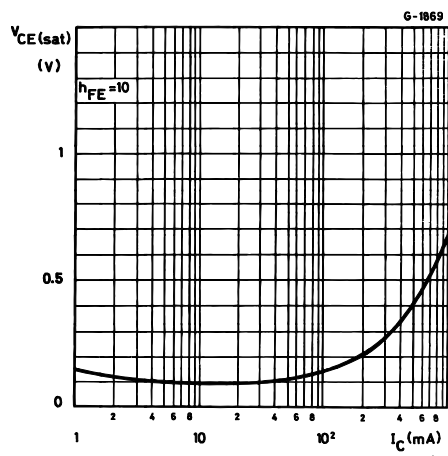
| | | | |
|-----------------------|--|-----|------|
| R _{thj-case} | Thermal Resistance Junction-Case | 35 | °C/W |
| R _{thj-amb} | Max Thermal Resistance Junction-Ambient | 200 | °C/W |
| | Max | | |

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

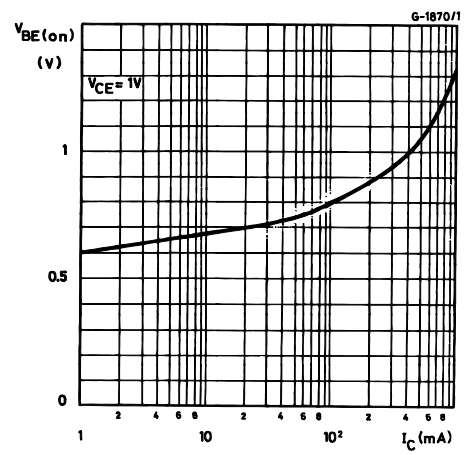
| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|------------------------|--|--|------|--------------------|------------|-------------|
| I _{CES} | Collector Cut-off Current (V _{BE} = 0) | V _{CE} = 60 V V _{CE} = 60 V T _C = 150 °C | | | 100 100 | nA μA |
| V _{(BR)CBO} * | Collector-Base Breakdown Voltage (I _E = 0) | I _C = 100 μA | 100 | | | V |
| V _{(BR)CEO} * | Collector-Emitter Breakdown Voltage (I _B = 0) | I _C = 30 mA | 60 | | | V |
| V _{(BR)EBO} * | Emitter-Base Breakdown Voltage (I _C = 0) | I _E = 100 μA | 7 | | | 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 | | 1.25 | 1.8 | 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 | 90 160 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} = 5 V f = 1 MHz | | 12 | 25 | pF |
| t _{on} | Turn-on Time | I _C = 100 mA I _{B1} = 5 mA | | | 250 | ns |
| t _{off} | Turn-off Time | I _C = 100 mA I _{B1} = I _{B2} = 5 mA | | | 850 | ns |

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

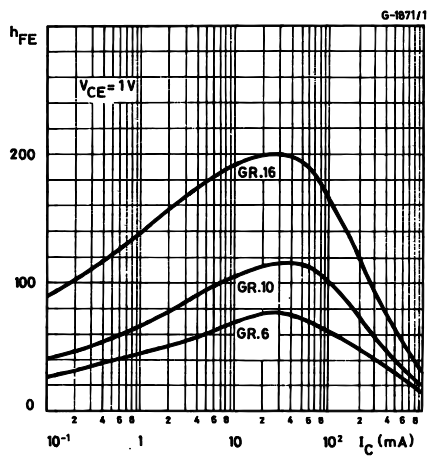
Collector-emitter Saturation Voltage.



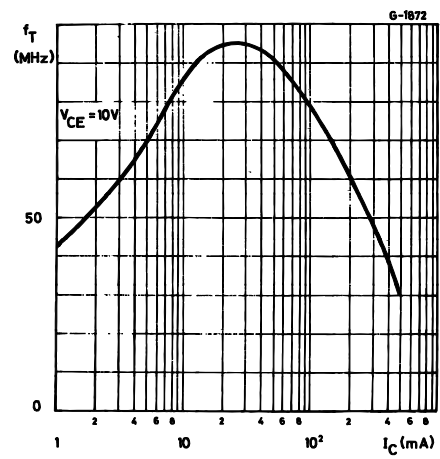
Base-emitter Voltage.



DC Current Gain.

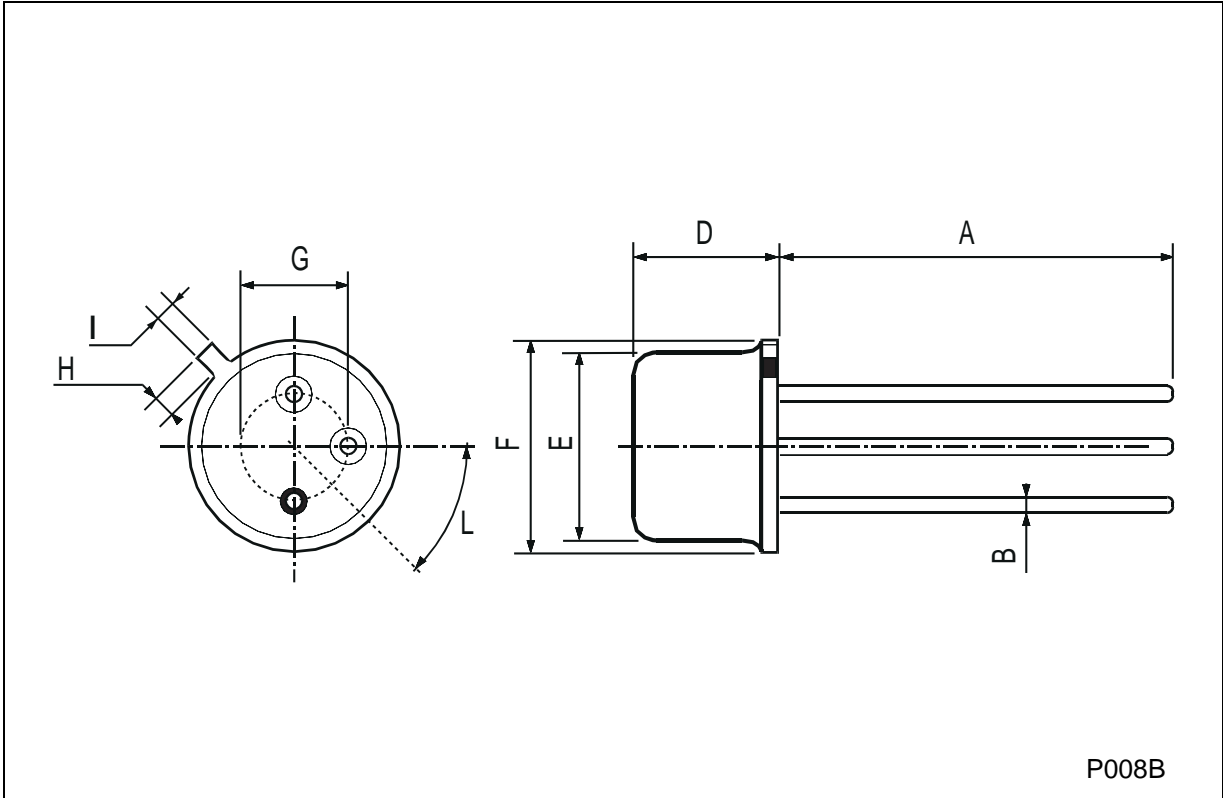


Transition Frequency.



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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