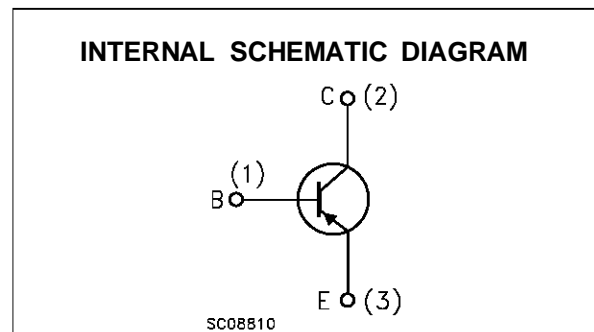
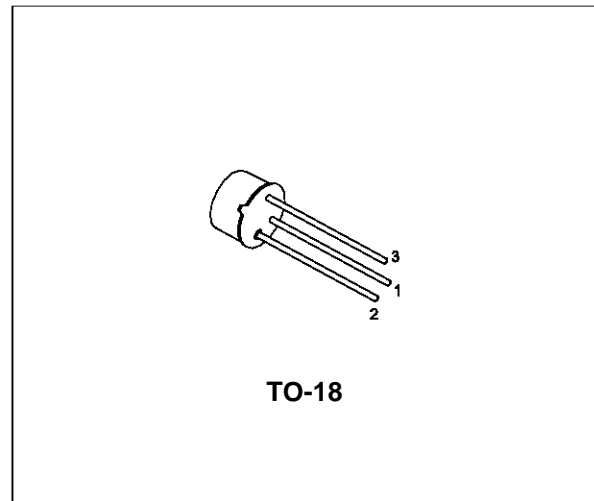


LOW NOISE GENERAL PURPOSE AUDIO AMPLIFIERS

DESCRIPTION

The BC177 is a silicon planar epitaxial PNP transistors in TO-18 metal case. It is suitable for use in driver stages, low noise input stages and signal processing circuits of television receivers. The NPN complement is BC107.


ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|-----------|--|------------|------------------|
| V_{CES} | Collector-Emitter Voltage ($V_{BE} = 0$) | -50 | V |
| V_{CEO} | Collector-Emitter Voltage ($I_B = 0$) | -45 | V |
| V_{EBO} | Emitter-Base Voltage ($I_C = 0$) | -5 | V |
| I_C | Collector Current | -100 | mA |
| I_{CM} | Collector Peak Current | -200 | mA |
| P_{tot} | Total Dissipation at $T_{amb} \leq 25\text{ }^\circ\text{C}$ | 0.3 | W |
| T_{stg} | Storage Temperature | -65 to 175 | $^\circ\text{C}$ |
| T_j | Max. Operating Junction Temperature | 175 | $^\circ\text{C}$ |

THERMAL DATA

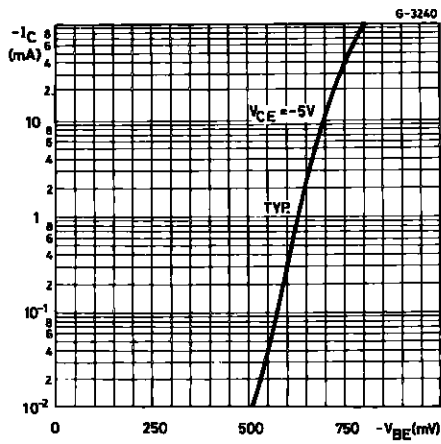
| | | | | |
|-----------------------|-------------------------------------|-----|-----|------|
| R _{thj-case} | Thermal Resistance Junction-Case | Max | 200 | °C/W |
| R _{thj-amb} | Thermal Resistance Junction-Ambient | Max | 500 | °C/W |

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

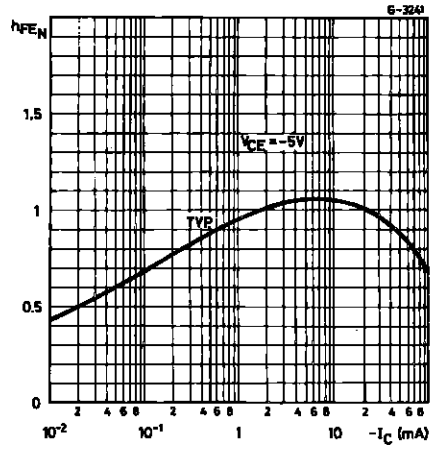
| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|-----------------------|---|---|------|--------------|-------------|--------------------------------------|
| I _{CES} | Collector Cut-off Current (V _{BE} = 0) | V _{CE} = -20 V V _{CE} = -20 V T _{amb} = 150 °C | | -1 | -100 -10 | nA μA |
| V _{(BR)CES} | Collector-Emitter Breakdown Voltage (V _{BE} = 0) | I _C = -10 μA | -50 | | | V |
| V _{(BR)CEO*} | Collector-Emitter Breakdown Voltage (I _B = 0) | I _C = -2 mA | -45 | | | V |
| V _{(BR)EBO} | Emitter-Base Breakdown Voltage (I _C = 0) | I _E = -10 μA | -5 | | | V |
| V _{CE(sat)*} | Collector-Emitter Saturation Voltage | I _C = -10 mA I _B = -0.5 mA I _C = -100 mA I _B = -5 mA | | -75 -200 | -250 | mV mV |
| V _{BE(sat)*} | Base-Emitter Saturation Voltage | I _C = -10 mA I _B = -0.5 mA I _C = -100 mA I _B = -5 mA | | -720 -860 | | mV mV |
| V _{BE(on)*} | Base-Emitter On Voltage | I _C = -2 mA V _{CE} = -5 V | -550 | -640 | -750 | mV |
| h _{fe*} | Small Signal Current Gain | I _C = -2 mA V _{CE} = -5 V f = 1KHz Gr. A Gr. B | | 125 240 | 260 500 | |
| f _T | Transition Frequency | I _C = -10 mA V _{CE} = -5 V f = 100 MHz | | 200 | | MHz |
| C _{CB0} | Collector Base Capacitance | I _E = 0 V _{CB} = -10 V | | 5 | | pF |
| NF | Noise Figure | I _C = -0.2 mA V _{CE} = -5 V f = 1KHz R _g = 2KΩ B = 200Hz | | 2 | 10 | dB |
| h _{ie} | Input Impedance | I _C = -2 mA V _{CE} = -5 V f = 1KHz Gr. A Gr. B | | 2.7 5.2 | | KΩ KΩ |
| h _{re} | Reverse Voltage Ratio | I _C = -2 mA V _{CE} = -5 V f = 1KHz Gr. A Gr. B | | 2.7 4.5 | | 10 ⁻⁴ 10 ⁻⁴ |
| h _{oe} | Output Admittance | I _C = -2 mA V _{CE} = -5 V f = 1KHz Gr. A Gr. B | | 25 35 | | μS μS |

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

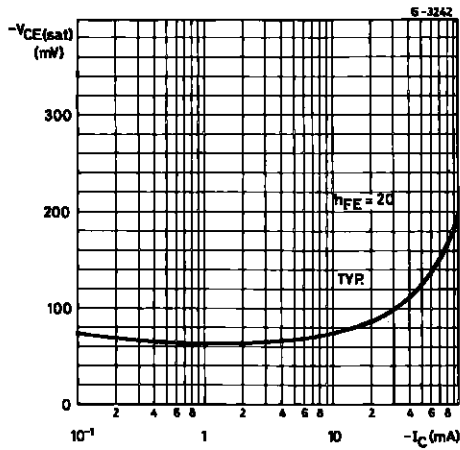
DC Transconductance.



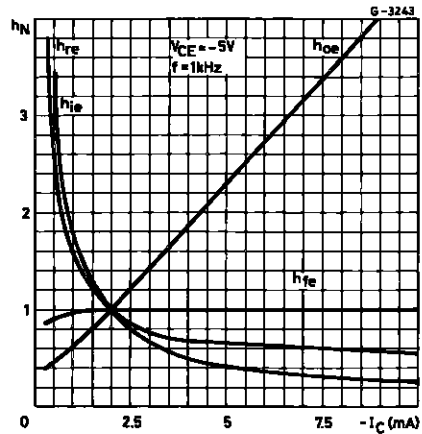
DC Normalized Current Gain.



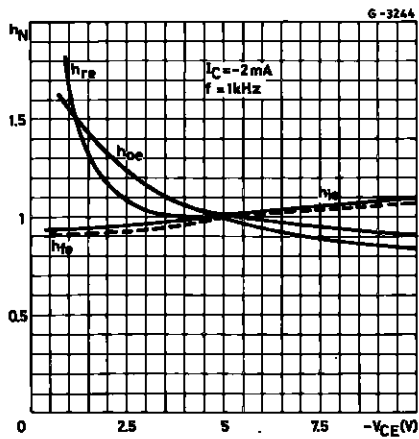
Collector-emitter Saturation Voltage.



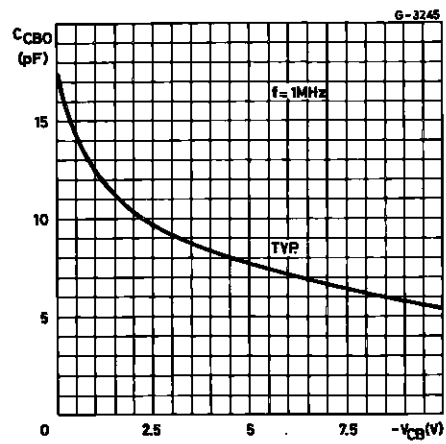
Normalized h Parameters.



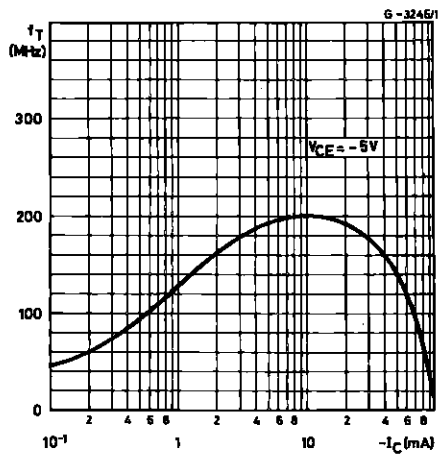
Normalized h Parameters.



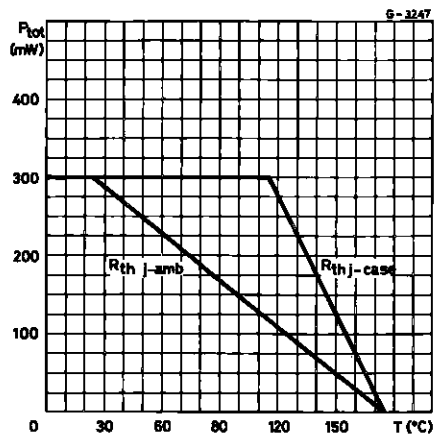
Collector-base Capacitance.



Transition Frequency.

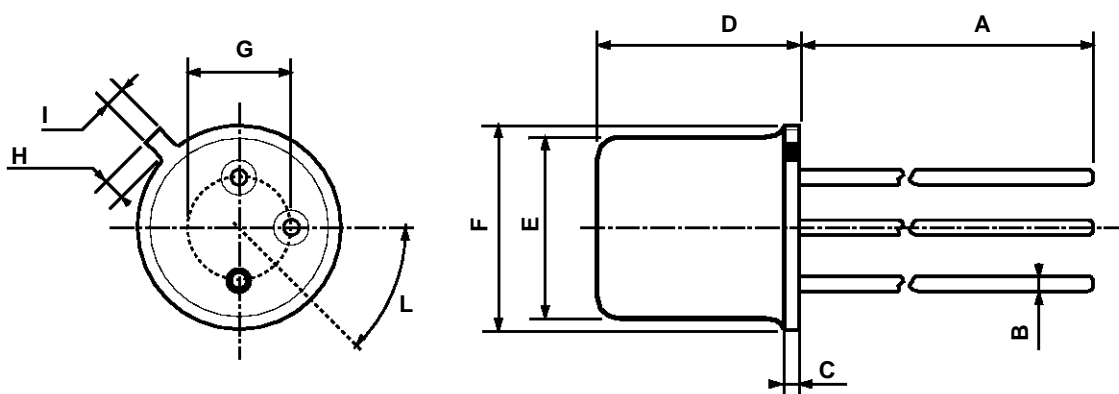


Power Rating Chart.



TO-18 MECHANICAL DATA

| DIM. | mm | | | inch | | |
|------|------|------|------|-------|-------|-------|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| A | | 12.7 | | | 0.500 | |
| B | | | 0.49 | | | 0.019 |
| D | | | 5.3 | | | 0.208 |
| E | | | 4.9 | | | 0.193 |
| F | | | 5.8 | | | 0.228 |
| G | 2.54 | | | 0.100 | | |
| H | | | 1.2 | | | 0.047 |
| I | | | 1.16 | | | 0.045 |
| L | 45° | | | 45° | | |



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