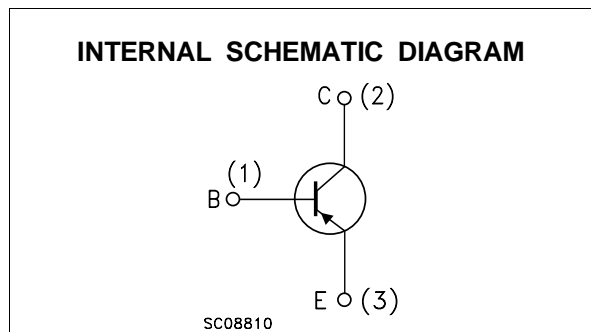
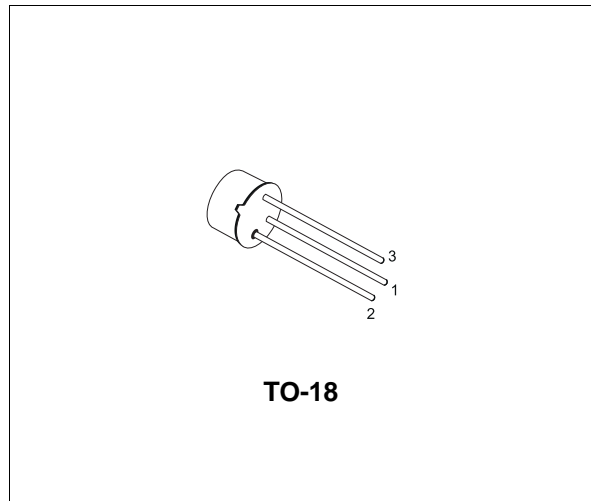


LOW NOISE GENERAL PURPOSE AUDIO AMPLIFIERS

DESCRIPTION

The BC177 and BC177B are silicon Planar Epitaxial PNP transistors in TO-18 metal case. They are suitable for use in driver stages, low noise input stages and signal processing circuits of television receivers. The NPN complementary types are BC107 and BC107B respectively.



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 | $^\circ\text{C}$ |

BC177 - BC177B

THERMAL DATA

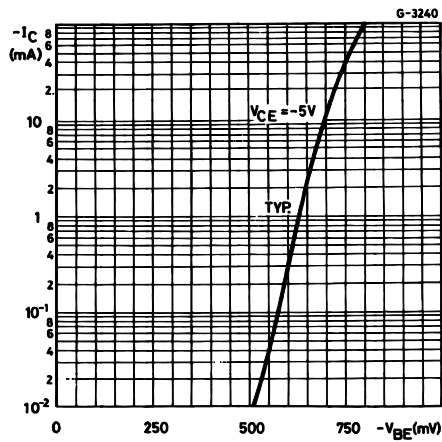
| | | | | |
|-----------------------|-------------------------------------|-----|-----|------|
| R _{thj-case} | Thermal Resistance Junction-Case | Max | 200 | °C/W |
| R _{thj-amb} | Thermal Resistance Junction-Ambient | Max | 500 | °C/W |

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

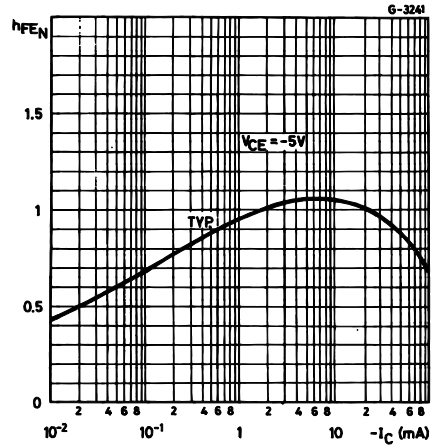
| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|-----------------------|---|---|------------|--------------|-------------|------------------|
| I _{CES} | Collector Cut-off Current (V _{BE} = 0) | V _{CE} = -20 V V _{CE} = -20 V T _C = 150 °C | | -1 | -100 -10 | nA μA |
| V _{(BR)CES} | 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 for BC177 for BC177B | 125 240 | | 500 500 | |
| f _T | Transition Frequency | I _C = -10 mA V _{CE} = -5 V f = 100 MHz | | 200 | | MHz |
| C _{CBO} | Collector-Base Capacitance | I _E = 0 V _{CB} = -10 V f = 100 KHz | | 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 | | 5 | | KΩ |
| h _{re} | Reverse Voltage Ratio | I _C = -2 mA V _{CE} = -5 V f = 1KHz | | 4 | | 10 ⁻⁴ |
| h _{oe} | Output Admittance | I _C = -2 mA V _{CE} = -5 V f = 1KHz | | 30 | | μS |

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

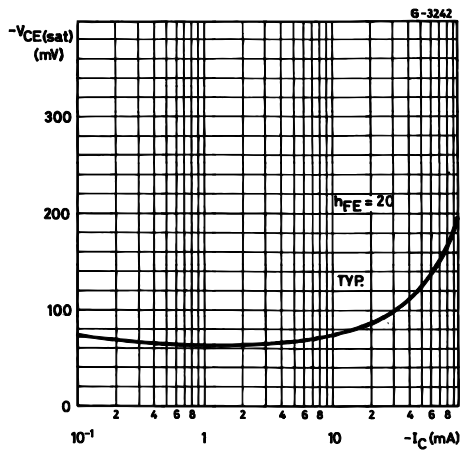
DC Transconductance.



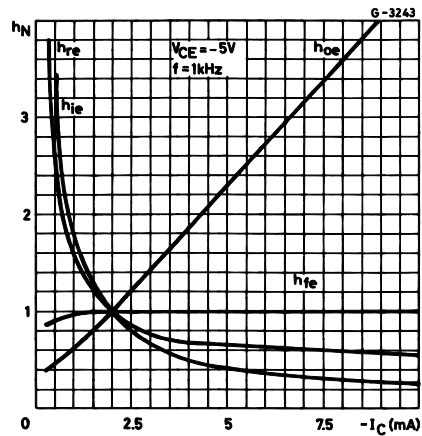
DC Normalized Current Gain.



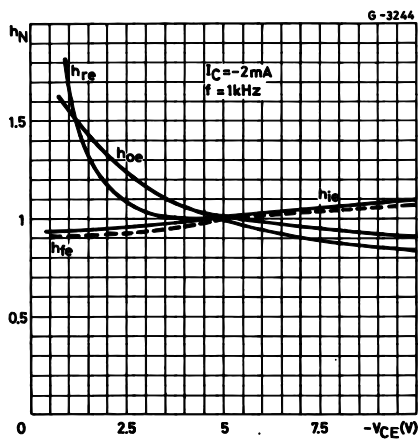
Collector-emitter Saturation Voltage.



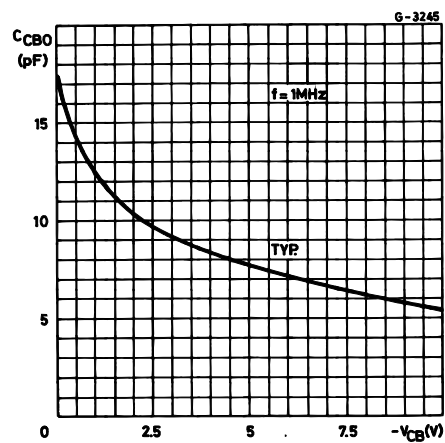
Normalized h Parameters.



Normalized h Parameters.

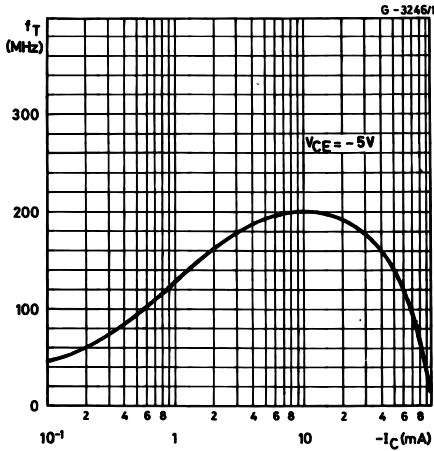


Collector-base Capacitance.

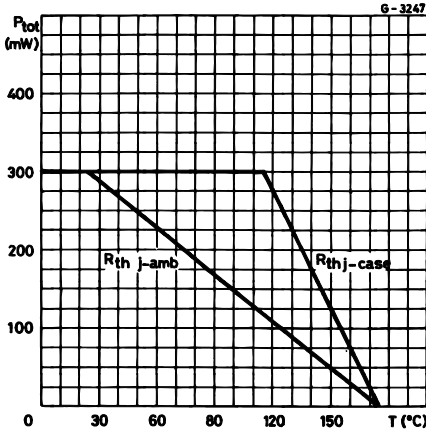


BC177 - BC177B

Transition Frequency.

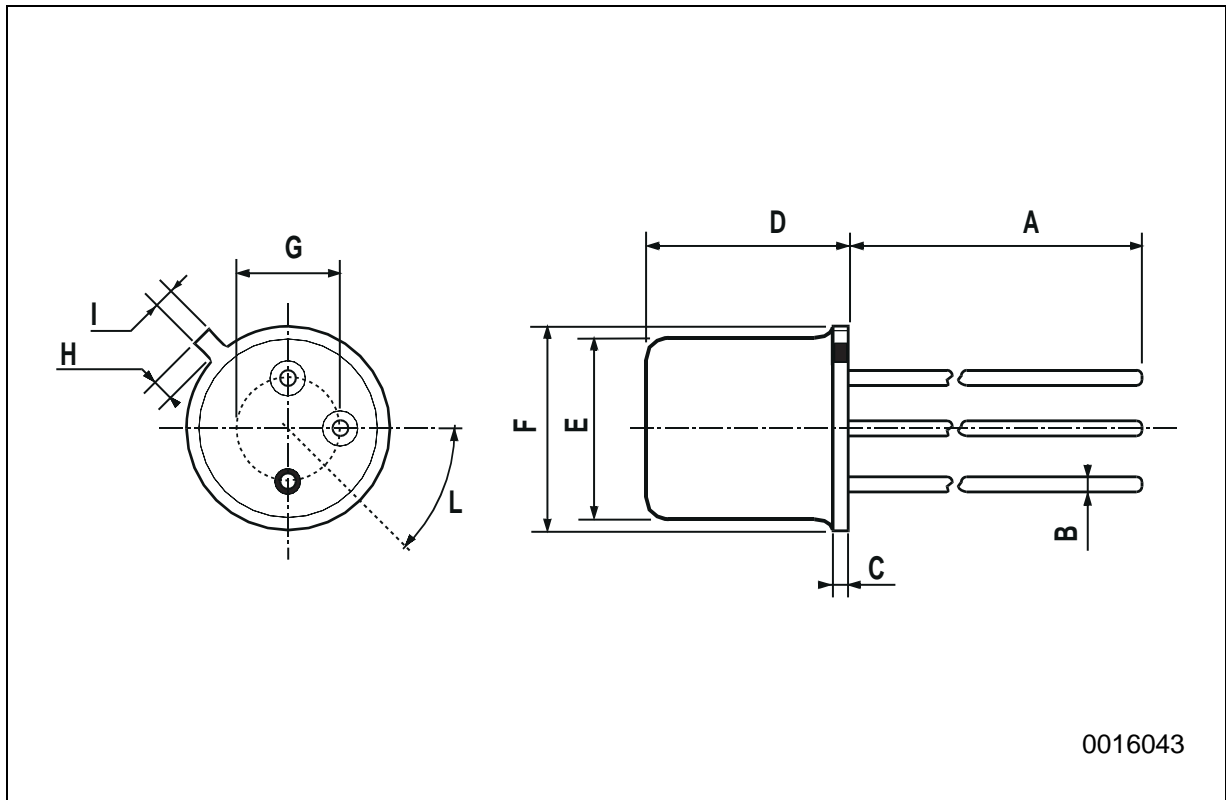


Power Rating Chart.



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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