

6367254 MOTOROLA SC (XSTRS/R F)

96D 80567 D T-33-13

MOTOROLA
SEMICONDUCTOR
TECHNICAL DATA

BD205
BD207

PLASTIC HIGH POWER
SILICON NPN TRANSISTOR

... designed for use in high power audio amplifiers utilizing complementary or quasi complementary circuits.

- DC Current Gain— $h_{FE} = 30$ (Min) @ $I_C = 2.0$ Adc
- BD 205, 207 are complementary with BD 206, 208

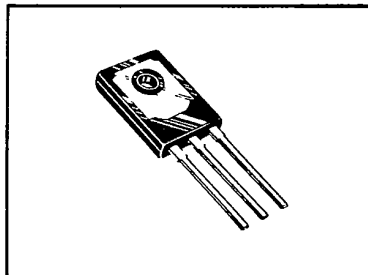
10 AMPERE
POWER TRANSISTOR

NPN SILICON

45, 60 VOLTS
90 WATTS

MAXIMUM RATINGS

| Rating | Symbol | Type | Value | Unit |
|---|----------------|------------------|-------------|----------------|
| Collector-Emitter Voltage | V_{CEO} | BD 205 BD 207 | 45 60 | Vdc |
| Collector-Base Voltage | V_{CBO} | BD 205 BD 207 | 55 70 | Vdc |
| Emitter-Base Voltage | V_{EBO} | | 5 | Vdc |
| Collector Current | I_C | | 10.0 | Adc |
| Base Current | I_B | | 6.0 | Adc |
| Total Device Dissipation Derate above 25°C | P_D | | 90 720 | Watts mW/°C |
| Operating and Storage Junction Temperature Range | T_J, T_{stg} | | -55 to +150 | °C |



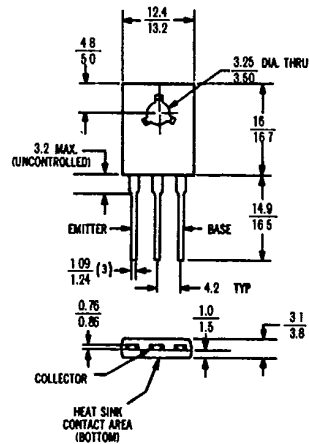
THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|--------------------------------------|---------------|------|------|
| Thermal Resistance, Junction to Case | θ_{JC} | 1.39 | °C/W |

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted)

| Characteristic | Symbol | Type | Min | Max | Unit |
|--|-----------------|------------------|----------|-----|------|
| Collector-Emitter Sustaining Voltage* ($I_C = 0.2$ Adc, $I_B = 0$) | V_{CEO}^* | BD 205 BD 207 | 45 60 | — | Vdc |
| Collector Cutoff Current ($V_{CB} = 65$ Vdc, $I_E = 0$) ($V_{CB} = 70$ Vdc, $I_E = 0$) | I_{CBO} | BD 205 BD 207 | — | 1.0 | mAdc |
| Emitter Cutoff Current ($V_{BE} = 5.0$ Vdc, $I_C = 0$) | I_{EBO} | | — | 2.0 | mAdc |
| DC current Gain ($I_C = 2$ A, $V_{CE} = 2$ V) ($I_C = 4$ A, $V_{CE} = 2$ V) | h_{FE}^* | | 30 15 | — | |
| Collector-Emitter Saturation Voltage* ($I_C = 4$ Adc, $I_B = 0.4$ Adc) | $V_{CE(sat)}^*$ | | — | 1.1 | Vdc |
| Base-Emitter On Voltage* ($I_C = 4$ Adc, $V_{CE} = 2.0$ Vdc) | $V_{BE(on)}^*$ | | — | 1.6 | Vdc |
| Current-Gain-Bandwidth Product ($I_C = 1.0$ Adc, $V_{CE} = 10$ Vdc, $f = 1.0$ MHz) | f_T | | 1.5 | — | MHz |

* Pulse Test: Pulse Width ≤ 300 μ s, Duty Cycle $\leq 2.0\%$.



When mounting the device, torque not to exceed 0.09 m.kg.
If lead bending is required, use suitable clamps or other supports between transistor case and point of bend.
All dimensions in millimeters

CASE 90



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 BD205, BD207

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FIGURE 1 — ACTIVE REGION DC SAFE OPERATING AREA

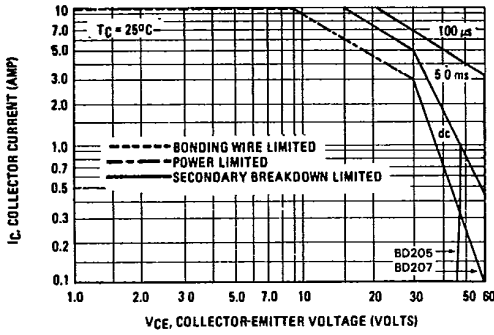


FIGURE 2 — POWER-TEMPERATURE DERATING CURVE

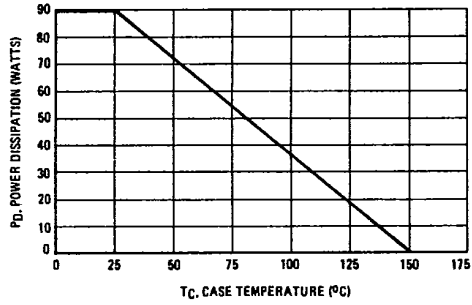


FIGURE 3 — "ON" VOLTAGES

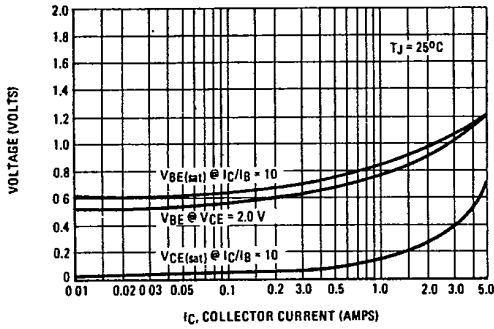


FIGURE 4 — CURRENT GAIN

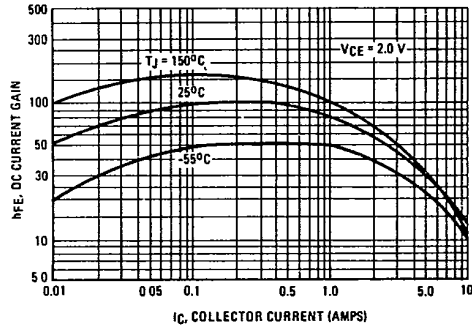


FIGURE 5 — THERMAL RESPONSE

