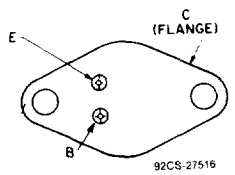
# Silicon Transistors for Quasi-Complementary-Symmetry Audio Amplifiers

**TERMINAL DESIGNATIONS**




**JEDEC TO-204AA**

The RCA-BD550 and BD550B are silicon n-p-n transistors especially suitable for applications in audio-amplifier circuits, in which they may be used as either driver or output unit.

The devices, together with a variety of other transistors that serve as input devices, $V_{BE}$ amplifiers for biasing, current sources, load-line limiters (for overload protection), and pre-drivers, may be used to develop several hundred watts of audio output power in quasi-complementary-symmetry audio amplifier configurations that employ parallel output transistors.

The BD-550-series is supplied in the JEDEC TO-204AA hermetic steel case.

**MAXIMUM RATINGS,** *Absolute-Maximum Values:*

| | BD550 | BD550B | |
|---|---|---|---|
| $V_{CBO}$ | 130 | 275 | V |
| $V_{CEO}$ | 110 | 250 | V |
| $V_{CER}(R_{BE} = 100\ \Omega)$ | 130 | 275 | V |
| $V_{EBO}$ | 5 | | V |
| $I_C$ | 7 | | A |
| $I_B$ | 2 | | A |
| $P_T$ | | | |
| At $T_C \leq 25°C$ | 150 | | W |
| At $T_C > 25°C$ | See Fig. 1 | | W/°C |
| $T_{stg}$, $T_J$ | -65 to 200 | | °C |
| $T_L$ | | | |
| At distances ≥ 1/32 in. (0.8 mm) from seating plane for 10 s max. | 230 | | °C |

**ELECTRICAL CHARACTERISTICS,** *At Case Temperature ($T_C$) =25° C*

| CHARACTERISTIC | TEST CONDITIONS | LIMITS | | | | UNITS |
|---|---|---|---|---|---|---|
| | | BD550 | | BD550B• | | |
| | | Min. | Max. | Min. | Max. | |
| $I_{CER}$<br>$R_{BE}$ = 100 Ω | $V_{CE}$ = 110 V<br>$V_{CE}$ = 250 V | —<br>— | 1<br>— | —<br>— | —<br>1 | mA |
| $I_{CEO}$ | $V_{CE}$ = 95 V<br>$V_{CE}$ = 200 V | —<br>— | 5<br>— | —<br>— | —<br>5 | mA |
| $I_{EBO}$ | $V_{EB}$ = 5 V | — | 1 | — | 1 | mA |
| $V_{CEO}$ | $I_C$ = 0.2 A | 110 | — | 250 | — | V |
| $V_{CER}$ | $I_C$ = 0.2 A; $R_{BE}$ = 100 Ω | 130 | — | 275 | — | V |
| $f_T$ | $I_C$ = 0.2 A; $V_{CE}$ = 10 V | 5 typ. | | 5 typ. | | MHz |
| $h_{FE}$ | $I_C$ = 4 A; $V_{CE}$ = 4 V<br>$I_C$ = 2A; $V_{CE}$ = 4 V | 15<br>— | 75<br>— | –<br>10 | —<br>50 | |
| $V_{CE}$(sat) | $I_C$ = 4 A; $I_B$ = 0.5 A<br>$I_C$ = 2A; $I_B$ = 0.25 A | —<br>— | 2<br>— | —<br>— | —<br>2 | V |
| $V_{BE}$ | $I_C$ = 4 A; $V_{CE}$ = 4 V<br>$I_C$ = 2 A; $V_{CE}$ = 4 V | 0.75<br>— | 1.75<br>— | —<br>1 | —<br>2 | V |
| $I_{S/b}$ | $V_{CE}$ = 80 V; t = 1 S<br>$V_{CE}$ = 140 V; t = 1 S | 1.87<br>— | —<br>— | —<br>1.07 | —<br>— | A |

▲For characteristics curves and test conditions, refer to published data for prototype RCA8638D (File 1060).
•For characteristics curves and test conditions, refer to published data for prototype 2N5240 (File 321).



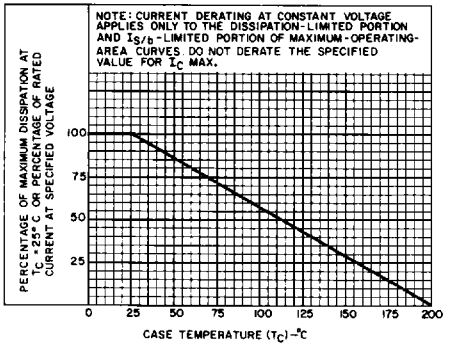



*Fig. 1 — Derating curve for all types.*

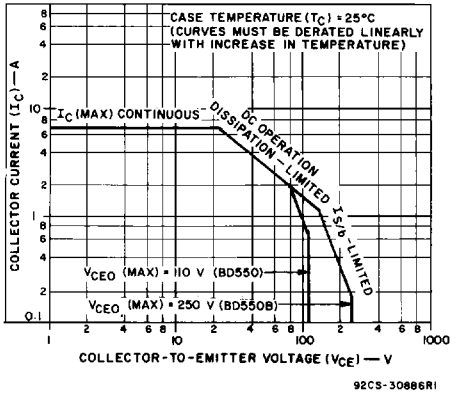



*Fig. 2 — Maximum operating areas for all types.*