

TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT process)

# 2SA950

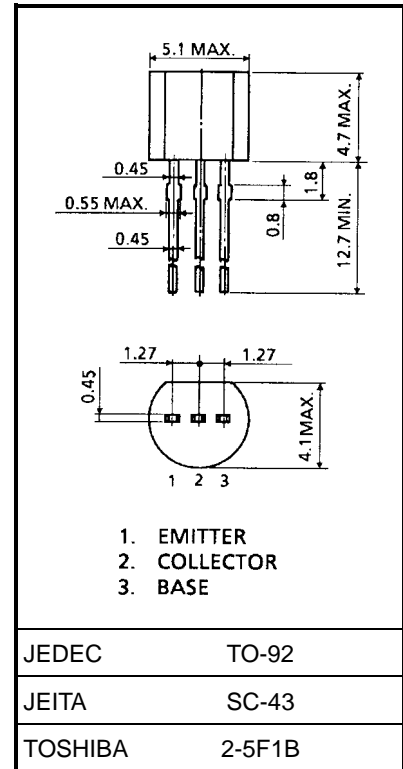
## Audio Power Amplifier Applications

- High  $h_{FE}$ :  $h_{FE} = 100\sim 320$
- 1 W output applications
- Complementary to 2SC2120

### Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

| Characteristics             | Symbol    | Rating  | Unit             |
|-----------------------------|-----------|---------|------------------|
| Collector-base voltage      | $V_{CB0}$ | -35     | V                |
| Collector-emitter voltage   | $V_{CEO}$ | -30     | V                |
| Emitter-base voltage        | $V_{EBO}$ | -5      | V                |
| Collector current           | $I_C$     | -800    | mA               |
| Base current                | $I_B$     | -160    | mA               |
| Collector power dissipation | $P_C$     | 600     | mW               |
| Junction temperature        | $T_j$     | 150     | $^\circ\text{C}$ |
| Storage temperature range   | $T_{stg}$ | -55~150 | $^\circ\text{C}$ |

Unit: mm

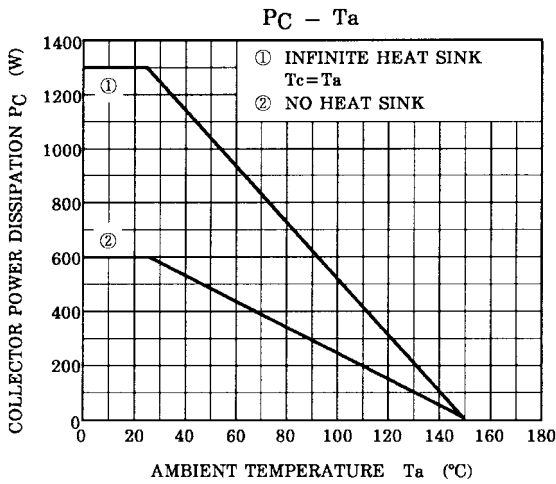
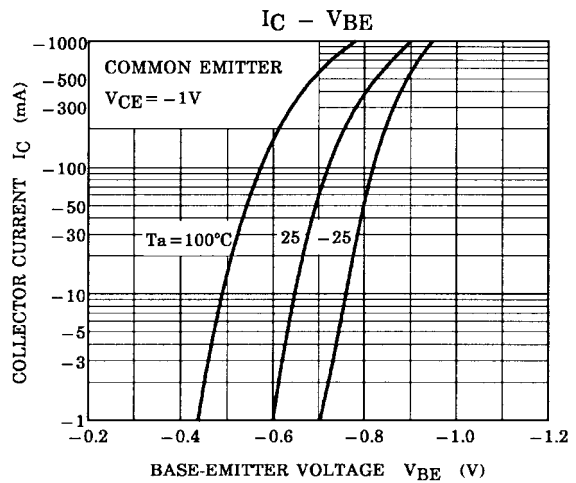
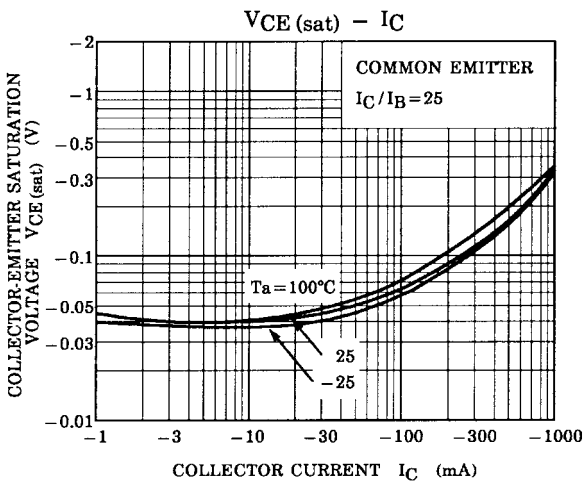
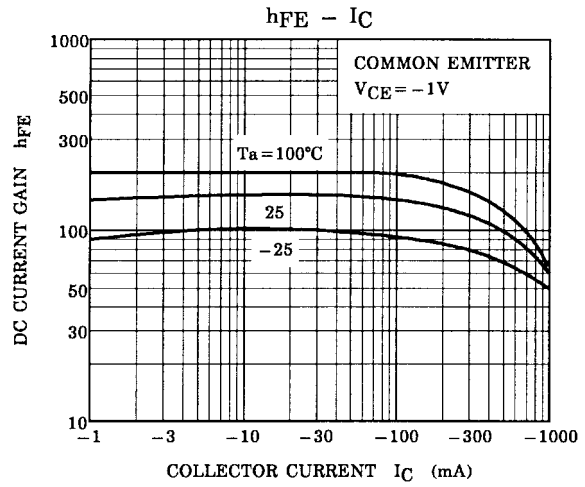
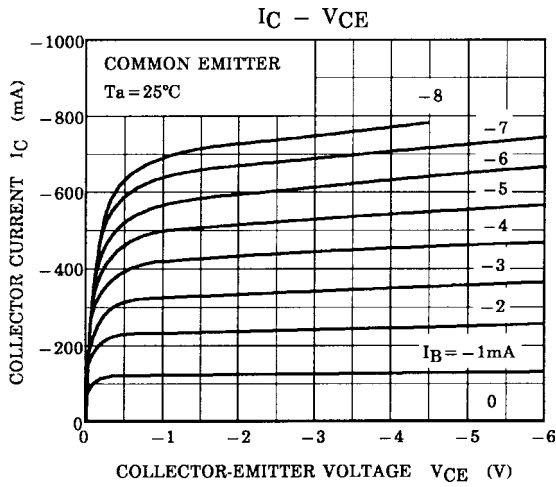


Weight: 0.21 g (typ.)

### Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

| Characteristics                      | Symbol                | Test Condition                                     | Min  | Typ. | Max  | Unit          |
|--------------------------------------|-----------------------|--|------|------|------|---------------|
| Collector cut-off current            | $I_{CBO}$             | $V_{CB} = -35\text{ V}, I_E = 0$                   | —    | —    | -0.1 | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$             | $V_{EB} = -5\text{ V}, I_C = 0$                    | —    | —    | -0.1 | $\mu\text{A}$ |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$         | $I_C = -10\text{ mA}, I_B = 0$                     | -30  | —    | —    | V             |
| DC current gain                      | $h_{FE(1)}$<br>(Note) | $V_{CE} = -1\text{ V}, I_C = -100\text{ mA}$       | 100  | —    | 320  |               |
|                                      | $h_{FE(2)}$           | $V_{CE} = -1\text{ V}, I_C = -700\text{ mA}$       | 35   | —    | —    |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$         | $I_C = -500\text{ mA}, I_B = -20\text{ mA}$        | —    | —    | -0.7 | V             |
| Base-emitter voltage                 | $V_{BE}$              | $V_{CE} = -1\text{ V}, I_C = -10\text{ mA}$        | -0.5 | —    | -0.8 | V             |
| Transition frequency                 | $f_T$                 | $V_{CE} = -5\text{ V}, I_C = -10\text{ mA}$        | —    | 120  | —    | MHz           |
| Collector output capacitance         | $C_{ob}$              | $V_{CB} = -10\text{ V}, I_E = 0, f = 1\text{ MHz}$ | —    | 19   | —    | pF            |

Note:  $h_{FE}$  (1) classification O: 100~200, Y: 160~320



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