

TOSHIBA Transistor Silicon PNP Triple Diffused Type

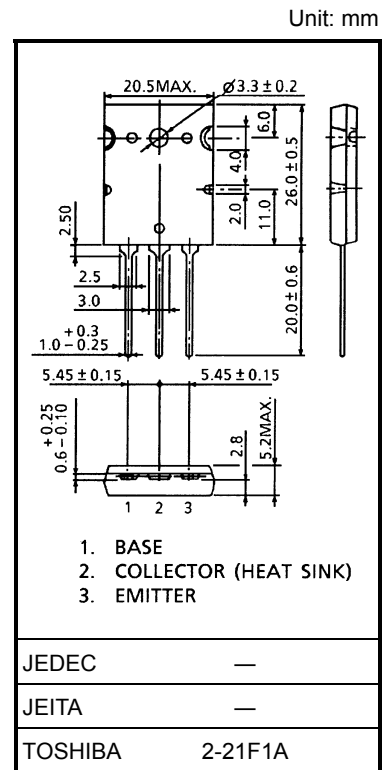
# 2SA1943

## Power Amplifier Applications

- High collector voltage:  $V_{CE0} = -230$  V (min)
- Complementary to 2SC5200
- Recommended for 100-W high-fidelity audio frequency amplifier output stage.

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

| Characteristics   | Symbol    | Rating     | Unit             |
|---|-----------|------------|------------------|
| Collector-base voltage                                      | $V_{CBO}$ | -230       | V                |
| Collector-emitter voltage                                   | $V_{CEO}$ | -230       | V                |
| Emitter-base voltage  | $V_{EBO}$ | -5         | V                |
| Collector current   | $I_C$     | -15        | A                |
| Base current  | $I_B$     | -1.5       | A                |
| Collector power dissipation<br>( $T_c = 25^\circ\text{C}$ ) | $P_C$     | 150        | W                |
| Junction temperature  | $T_j$     | 150        | $^\circ\text{C}$ |
| Storage temperature range                                   | $T_{stg}$ | -55 to 150 | $^\circ\text{C}$ |



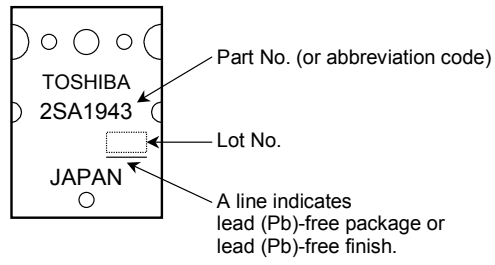
Weight: 9.75 g (typ.)

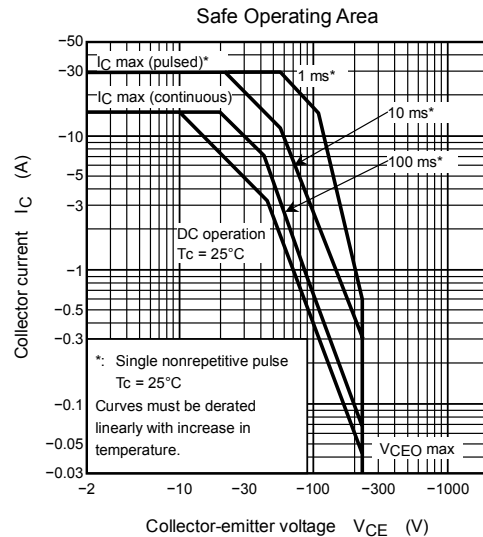
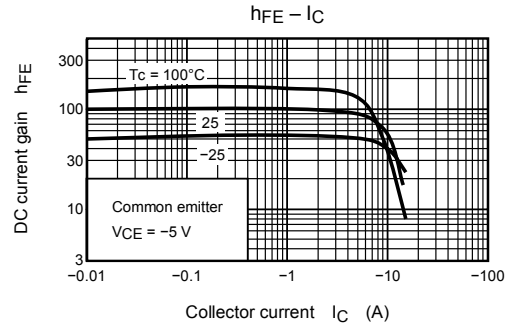
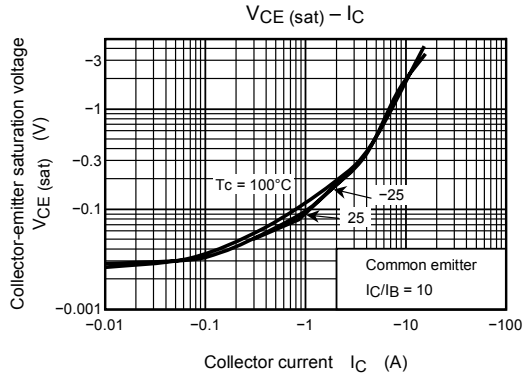
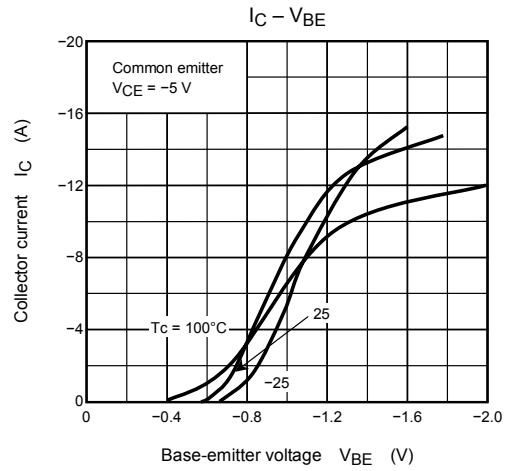
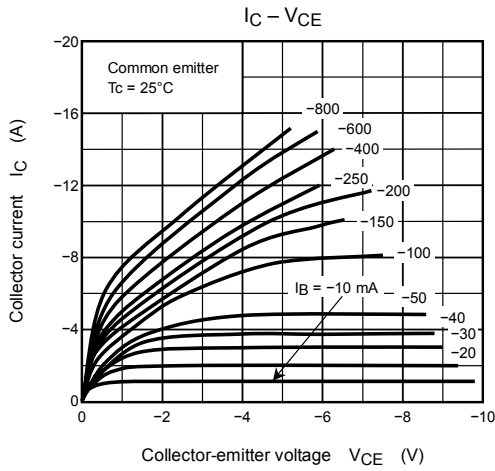
## Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

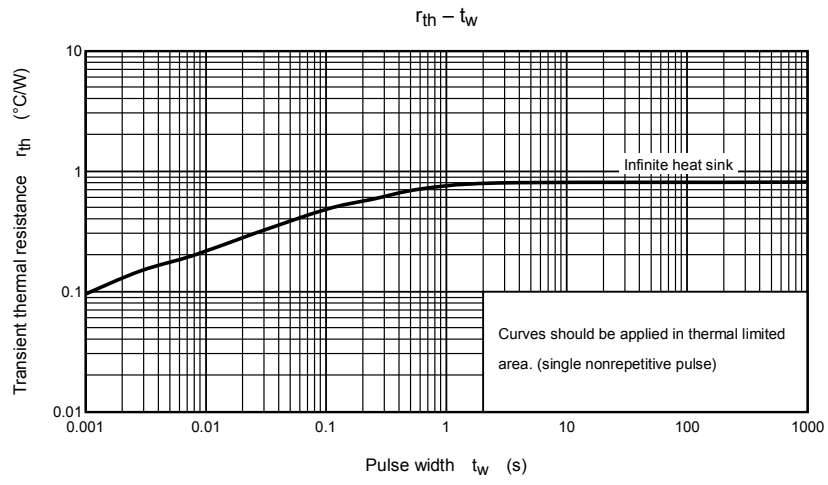
| Characteristics                      | Symbol                | Test Condition                            | Min  | Typ. | Max  | Unit          |
|--------------------------------------|-----------------------|---|------|------|------|---------------|
| Collector cut-off current            | $I_{CBO}$             | $V_{CB} = -230$ V, $I_E = 0$              | —    | —    | -5.0 | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$             | $V_{EB} = -5$ V, $I_C = 0$                | —    | —    | -5.0 | $\mu\text{A}$ |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$         | $I_C = -50$ mA, $I_B = 0$                 | -230 | —    | —    | V             |
| DC current gain                      | $h_{FE(1)}$<br>(Note) | $V_{CE} = -5$ V, $I_C = -1$ A             | 55   | —    | 160  |               |
|                                      | $h_{FE(2)}$           | $V_{CE} = -5$ V, $I_C = -7$ A             | 35   | 60   | —    |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$         | $I_C = -8$ A, $I_B = -0.8$ A              | —    | -1.5 | -3.0 | V             |
| Base-emitter voltage                 | $V_{BE}$              | $V_{CE} = -5$ V, $I_C = -7$ A             | —    | -1.0 | -1.5 | V             |
| Transition frequency                 | $f_T$                 | $V_{CE} = -5$ V, $I_C = -1$ A             | —    | 30   | —    | MHz           |
| Collector output capacitance         | $C_{ob}$              | $V_{CB} = -10$ V, $I_E = 0$ , $f = 1$ MHz | —    | 360  | —    | pF            |

Note:  $h_{FE(1)}$  classification R: 55 to 110, O: 80 to 160

## Marking







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