

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT process)

## 2SC2982

Storobo Flash Applications

Medium Power Amplifier Applications

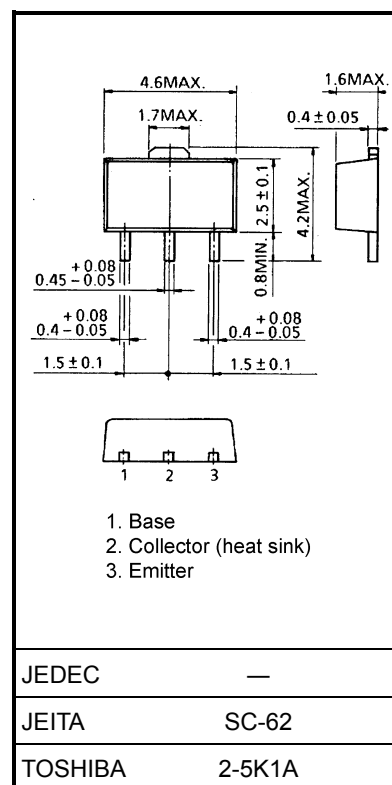
Unit: mm

- High DC current gain and excellent linearity
  - :  $h_{FE}(1) = 140$  to  $600$  ( $V_{CE} = 1\text{ V}$ ,  $I_C = 0.5\text{ A}$ )
  - :  $h_{FE}(2) = 70$  (min),  $140$  (typ.), ( $V_{CE} = 1\text{ V}$ ,  $I_C = 2\text{ A}$ )
- Low saturation voltage
  - :  $V_{CE}(\text{sat}) = 0.5\text{ V}$  (max) ( $I_C = 2\text{ A}$ ,  $I_B = 50\text{ mA}$ )
- Small flat package
- $P_C = 1.0$  to  $2.0\text{ W}$  (mounted on ceramic substrate)
- Complementary to 2SA1314

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

| Characteristics             |                | Symbol            | Rating     | Unit             |
|-----------------------------|----------------|-------------------|------------|------------------|
| Collector-base voltage      |                | $V_{CBO}$         | 30         | V                |
| Collector-emitter voltage   |                | $V_{CES}$         | 30         | V                |
|                             |                | $V_{CEO}$         | 10         |                  |
| Emitter-base voltage        |                | $V_{EBO}$         | 6          | V                |
| Collector current           | DC             | $I_C$             | 2          | A                |
|                             | Pulse (Note 1) | $I_{CP}$          | 4          |                  |
| Base current                | DC             | $I_B$             | 0.4        | A                |
|                             | Pulse (Note 1) | $I_{BP}$          | 0.8        |                  |
| Collector power dissipation |                | $P_C$             | 500        | mW               |
|                             |                | $P_C$<br>(Note 2) | 1000       |                  |
| Junction temperature        |                | $T_j$             | 150        | $^\circ\text{C}$ |
| Storage temperature range   |                | $T_{stg}$         | -55 to 150 | $^\circ\text{C}$ |

Note 1: Pulse test: Pulse width = 10 ms (max), duty cycle = 30% (max)

Note 2: 2SC2982 mounted on ceramic substrate ( $250\text{ mm}^2 \times 0.8\text{ t}$ )

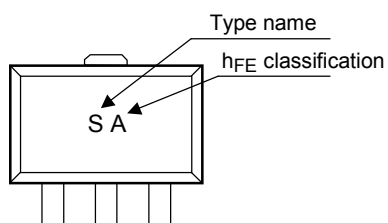
Weight: 0.05 g (typ.)

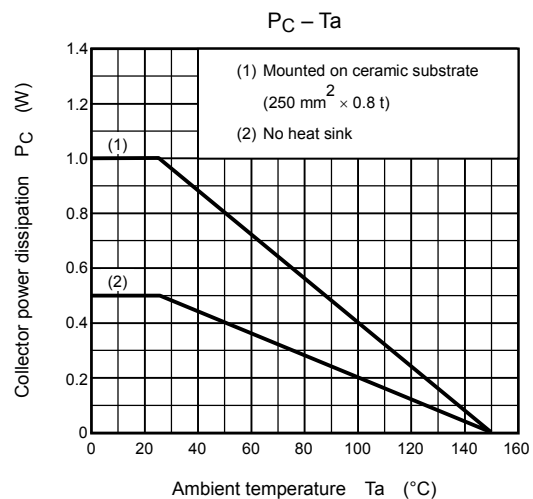
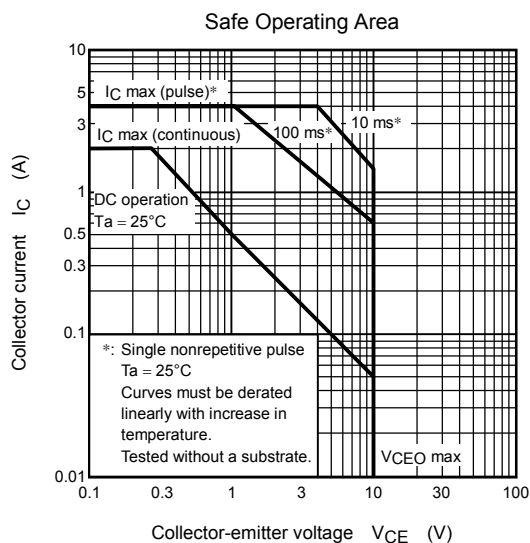
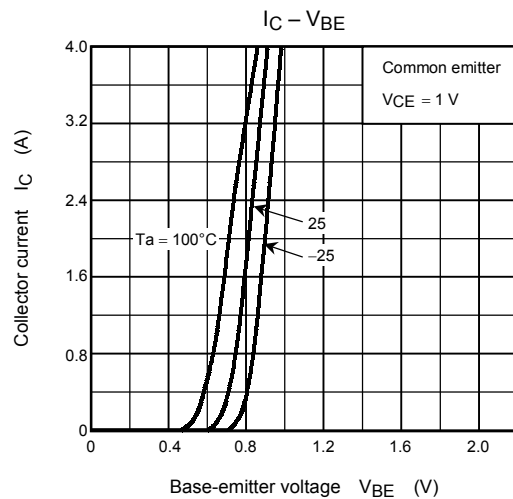
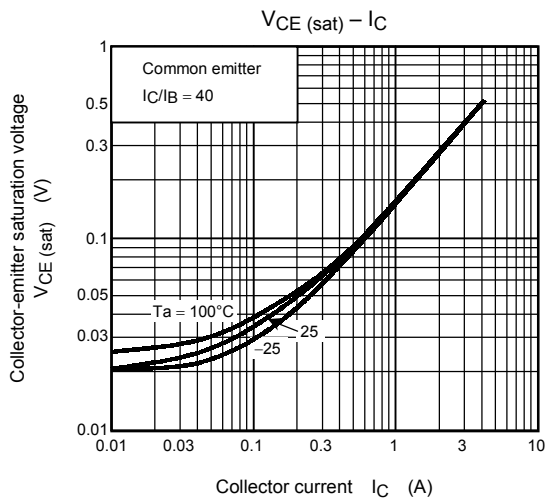
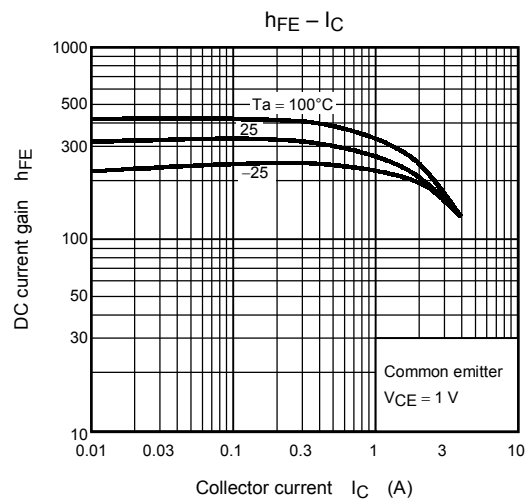
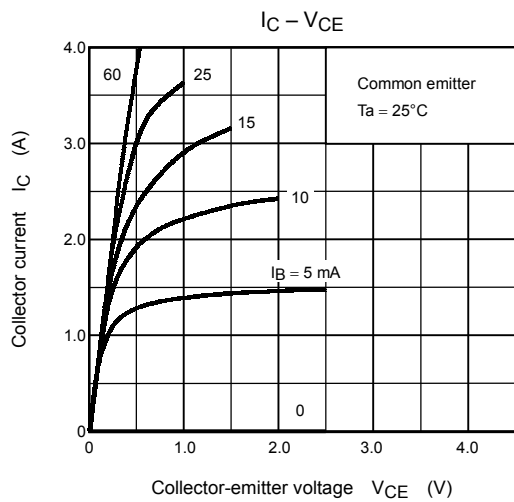
## Electrical Characteristics (Ta = 25°C)

| Characteristics                      | Symbol                  | Test Condition                                    | Min | Typ. | Max | Unit          |
|--------------------------------------|-------------------------|---|-----|------|-----|---------------|
| Collector cut-off current            | $I_{CBO}$               | $V_{CB} = 30\text{ V}, I_E = 0$                   | —   | —    | 0.1 | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$               | $V_{EB} = 6\text{ V}, I_C = 0$                    | —   | —    | 0.1 | $\mu\text{A}$ |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$           | $I_C = 10\text{ mA}, I_B = 0$                     | 10  | —    | —   | V             |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$           | $I_E = 1\text{ mA}, I_C = 0$                      | 6   | —    | —   | V             |
| DC current gain                      | $h_{FE(1)}$<br>(Note 3) | $V_{CE} = 1\text{ V}, I_C = 0.5\text{ A}$         | 140 | —    | 600 | —             |
|                                      | $h_{FE(2)}$             | $V_{CE} = 1\text{ V}, I_C = 2\text{ A}$           | 70  | 140  | —   |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$           | $I_C = 2\text{ A}, I_B = 50\text{ mA}$            | —   | 0.2  | 0.5 | V             |
| Base-emitter voltage                 | $V_{BE}$                | $V_{CE} = 1\text{ V}, I_C = 2\text{ A}$           | —   | 0.86 | 1.5 | V             |
| Transition frequency                 | $f_T$                   | $V_{CE} = 1\text{ V}, I_C = 0.5\text{ A}$         | —   | 150  | —   | MHz           |
| Collector output capacitance         | $C_{ob}$                | $V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$ | —   | 27   | —   | pF            |

Note 3:  $h_{FE(1)}$  classification A: 140 to 240, B: 200 to 330, C: 300 to 450, D: 420 to 600

## Marking





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