

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

**2SC3671**

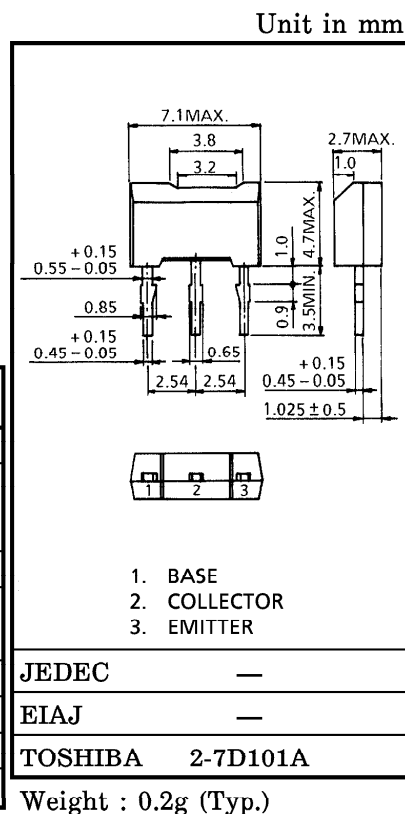
STORBE FLASH APPLICATIONS

MEDIUM POWER AMPLIFIER APPLICATIONS

- High DC Current Gain and Excellent  $h_{FE}$  Linearity
  - $h_{FE}(1) = 140 \sim 450$
  - $h_{FE}(2) = 70$  (Min.)
- Low Saturation Voltage :  $V_{CE(sat)} = 1.0V$  (Max.)

MAXIMUM RATINGS ( $T_a = 25^\circ C$ )

| CHARACTERISTIC              |                | SYMBOL    | RATING         | UNIT       |
|-----------------------------|----------------|-----------|----------------|------------|
| Collector-Base Voltage      |                | $V_{CBO}$ | 50             | V          |
| Collector-Emitter Voltage   |                | $V_{CES}$ | 40             | V          |
|                             |                | $V_{CEO}$ | 20             |            |
| Emitter-Base Voltage        |                | $V_{EBO}$ | 8              | V          |
| Collector Current           | DC             | $I_C$     | 5              | A          |
|                             | Pulse (Note 1) | $I_{CP}$  | 8              |            |
| Base Current                |                | $I_B$     | 0.5            | A          |
| Collector Power Dissipation |                | $P_C$     | 1000           | mW         |
| Junction Temperature        |                | $T_j$     | 150            | $^\circ C$ |
| Storage Temperature Range   |                | $T_{stg}$ | $-55 \sim 150$ | $^\circ C$ |

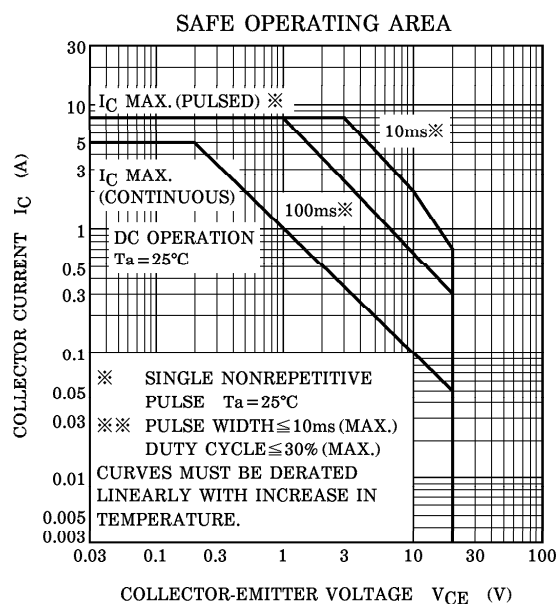
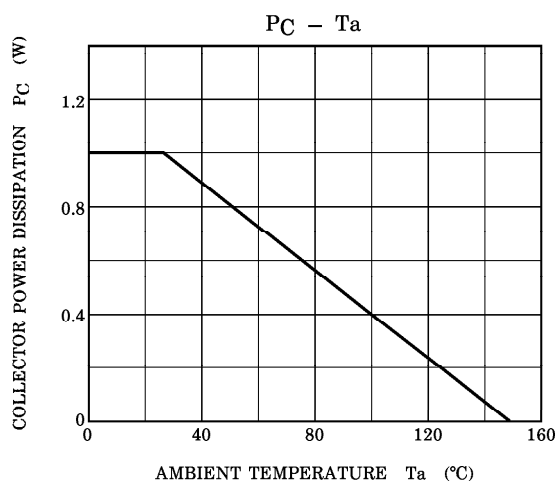
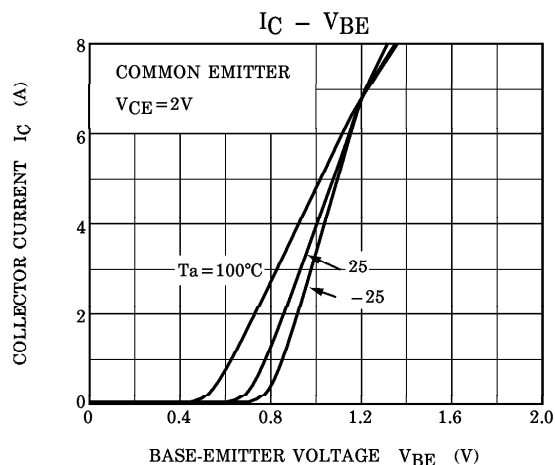
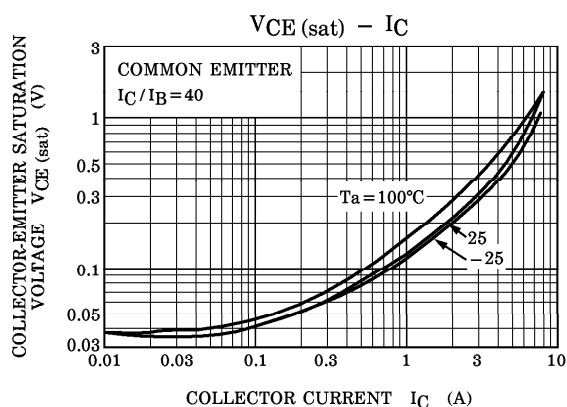
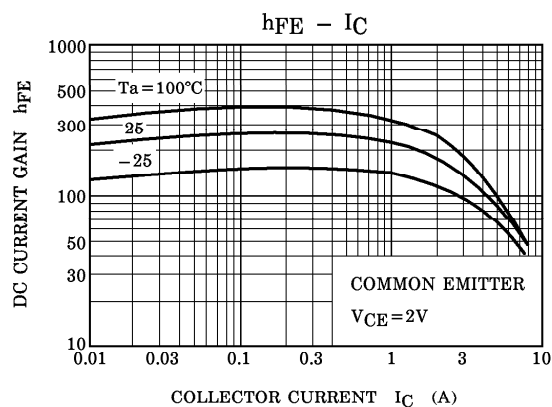
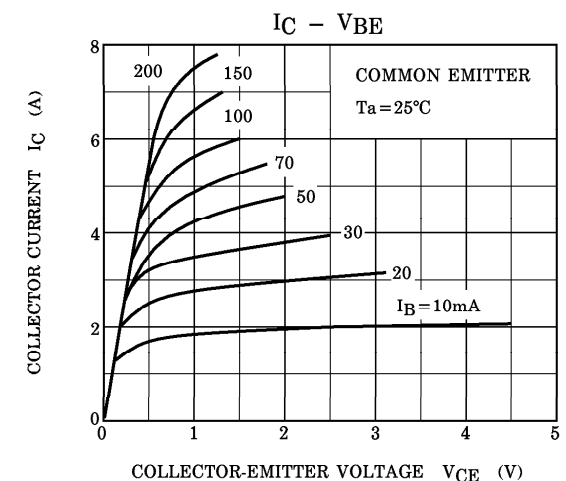
Note 1 : Pulse Width  $\leq 10ms$ , Duty Cycle  $\leq 30\%$ ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ C$ )

| CHARACTERISTIC                       | SYMBOL                  | TEST CONDITION                    | MIN. | TYP. | MAX. | UNIT |
|--------------------------------------|-------------------------|-----------------------------------|------|------|------|------|
| Collector Cut-off Current            | $I_{CBO}$               | $V_{CB} = 40V, I_E = 0$           | —    | —    | 100  | nA   |
| Emitter Cut-off Current              | $I_{EBO}$               | $V_{EB} = 8V, I_C = 0$            | —    | —    | 100  | nA   |
| Collector-Emitter Breakdown Voltage  | $V_{CEO}$               | $I_C = 10mA, I_B = 0$             | 20   | —    | —    | V    |
| Emitter-Base Breakdown Voltage       | $V_{EBO}$               | $I_E = 1mA, I_C = 0$              | 8    | —    | —    | V    |
| DC Current Gain                      | $h_{FE}(1)$<br>(Note 2) | $V_{CE} = 2V, I_C = 0.5A$         | 140  | —    | 450  |      |
|                                      | $h_{FE}(2)$             | $V_{CE} = 2V, I_C = 4A$           | 70   | —    | —    |      |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$           | $I_C = 4A, I_B = 0.1A$            | —    | —    | 1.0  | V    |
| Base-Emitter Voltage                 | $V_{BE}$                | $V_{CE} = 2V, I_C = 4A$           | —    | —    | 1.5  | V    |
| Transition Frequency                 | $f_T$                   | $V_{CE} = 2V, I_C = 0.5A$         | —    | 100  | —    | MHz  |
| Collector Output Capacitance         | $C_{ob}$                | $V_{CB} = 10V, I_E = 0, f = 1MHz$ | —    | 40   | —    | pF   |

Note 2 :  $h_{FE}(1)$  Classification    A : 140~240,    B : 200~330,    C : 300~450

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