

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

# 2SC3670

STOROBO FLASH APPLICATIONS

MEDIUM POWER AMPLIFIER APPLICATIONS

- High DC Current Gain and Excellent  $h_{FE}$  Linearity  
 :  $h_{FE}(1) = 140 \sim 600$   
 :  $h_{FE}(2) = 70$  (Min.), 200 (Typ.)
- Low Saturation Voltage :  $V_{CE(sat)} = 0.5V$  (Max.)

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

| CHARACTERISTIC              | SYMBOL          | RATING   | UNIT       |
|-----------------------------|-----------------|----------|------------|
| Collector-Base Voltage      | $V_{CB0}$       | 30       | V          |
| Collector-Emitter Voltage   | $V_{CES}$       | 30       | V          |
|                             | $V_{CEO}$       | 10       |            |
| Emitter-Base Voltage        | $V_{EBO}$       | 6        | V          |
| Collector Current           | DC              | $I_C$    | A          |
|                             | Pulsed (Note 1) | $I_{CP}$ |            |
| Base Current                | $I_B$           | 0.5      | A          |
| Collector Power Dissipation | $P_C$           | 1000     | mW         |
| Junction Temperature        | $T_j$           | 150      | $^\circ C$ |
| Storage Temperature Range   | $T_{stg}$       | -55~150  | $^\circ C$ |

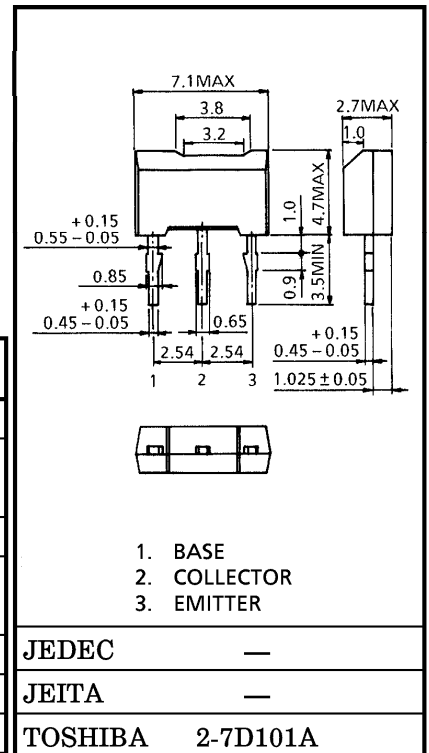
(Note 1) : Pulse Width  $\leq 10ms$ , Duty Cycle  $\leq 30\%$

ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ C$ )

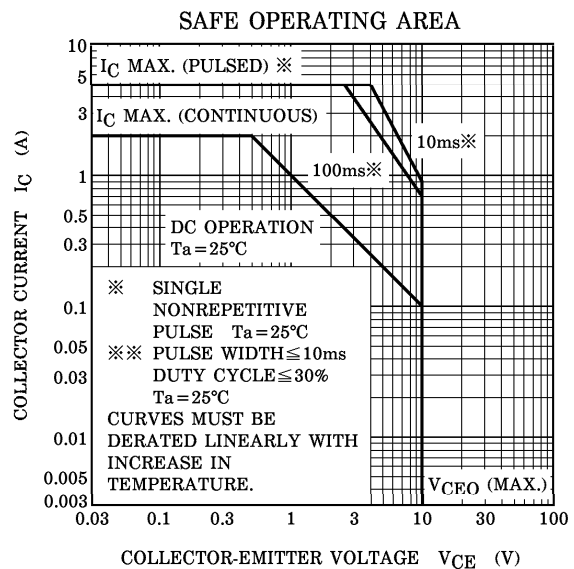
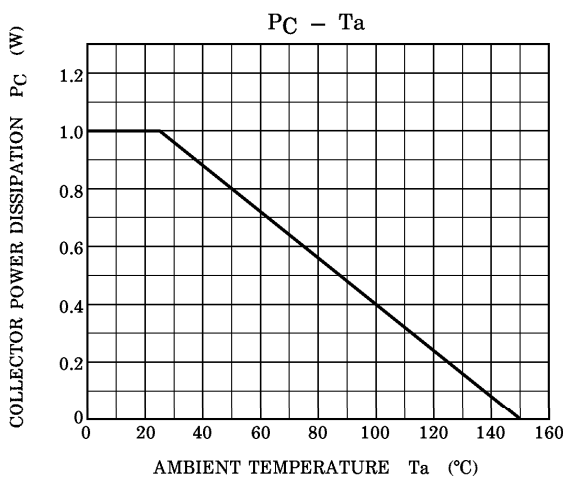
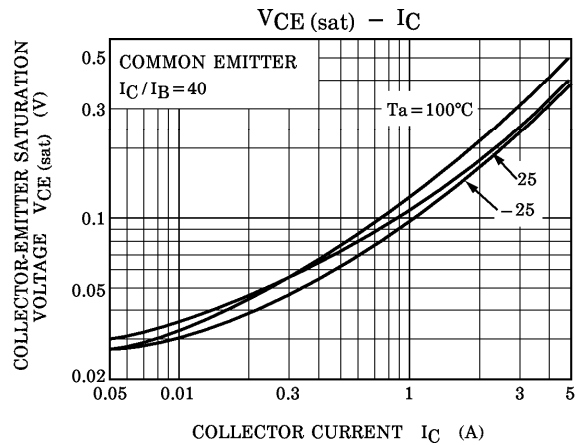
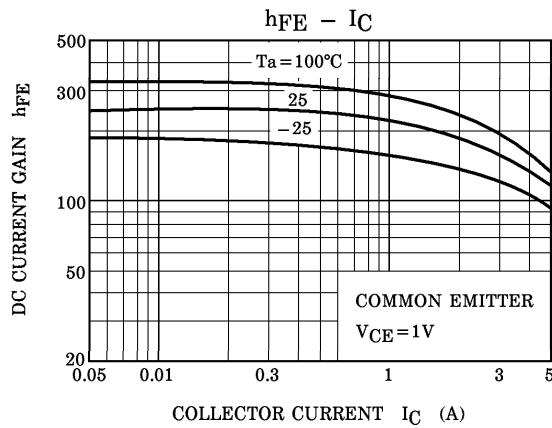
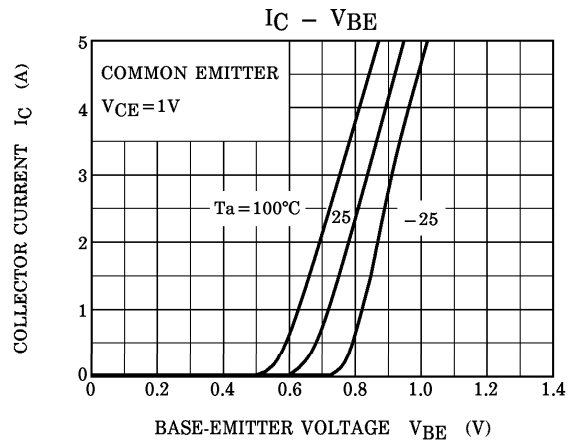
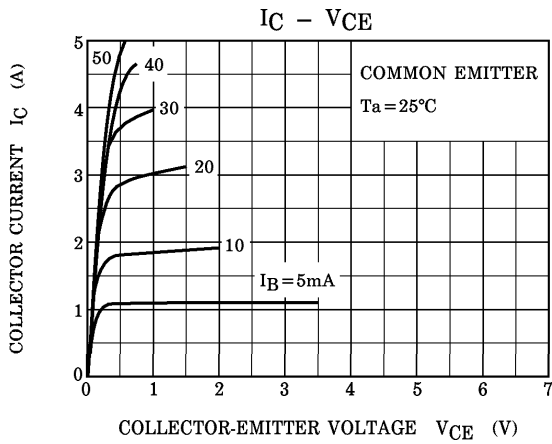
| CHARACTERISTIC                       | SYMBOL                  | TEST CONDITION                    | MIN. | TYP. | MAX. | UNIT |
|--------------------------------------|-------------------------|-----------------------------------|------|------|------|------|
| Collector Cut-off Current            | $I_{CBO}$               | $V_{CB} = 30V, I_E = 0$           | —    | —    | 100  | nA   |
| Emitter Cut-off Current              | $I_{EBO}$               | $V_{EB} = 6V, I_C = 0$            | —    | —    | 100  | nA   |
| Collector-Emitter Breakdown Voltage  | $V_{CEO}$               | $I_C = 10mA, I_B = 0$             | 10   | —    | —    | V    |
| Emitter-Base Breakdown Voltage       | $V_{EBO}$               | $I_E = 1mA, I_C = 0$              | 6    | —    | —    | V    |
| DC Current Gain                      | $h_{FE}(1)$<br>(Note 2) | $V_{CE} = 1V, I_C = 0.5A$         | 140  | —    | 600  |      |
|                                      | $h_{FE}(2)$             | $V_{CE} = 1V, I_C = 2A$           | 70   | 200  | —    |      |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$           | $I_C = 2A, I_B = 50mA$            | —    | 0.2  | 0.5  | V    |
| Base-Emitter Voltage                 | $V_{BE}$                | $V_{CE} = 1V, I_C = 2A$           | —    | 0.86 | 1.5  | V    |
| Transition Frequency                 | $f_T$                   | $V_{CE} = 1V, I_C = 0.5A$         | —    | 150  | —    | MHz  |
| Collector Output Capacitance         | $C_{ob}$                | $V_{CB} = 10V, I_E = 0, f = 1MHz$ | —    | 27   | —    | pF   |

(Note 2) :  $h_{FE}(1)$  Classification    A : 140~240,    B : 200~330,    C : 300~450,    D : 420~600

Unit in mm



Weight : 0.2g (Typ.)



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