

TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

# 2SA1357

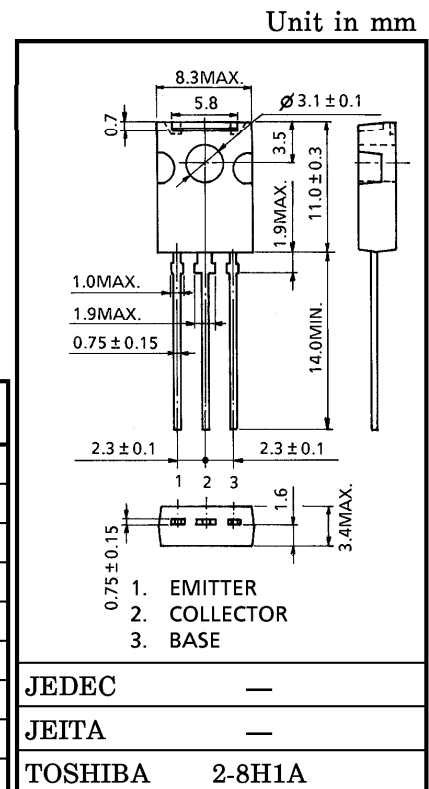
STROBE FLASH APPLICATIONS

AUDIO POWER AMPLIFIER APPLICATIONS

- MIN  $h_{FE}$  of 70 at  $-2V$ ,  $-4A$ .
- $-5A$  Rated Collector Current.
- MAX  $V_{CE(sat)}$  of  $-1.0V$  at  $-4A$   $I_C$ .
- 10W at  $25^\circ C$  Case Temperature.

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

| CHARACTERISTIC              |                    | SYMBOL    | RATING  | UNIT       |
|-----------------------------|--------------------|-----------|---------|------------|
| Collector-Base Voltage      |                    | $V_{CBO}$ | -35     | V          |
| Collector-Emitter Voltage   |                    | $V_{CEO}$ | -20     | V          |
| Emitter-Base Voltage        |                    | $V_{EBO}$ | -8      | V          |
| Collector Current           | DC                 | $I_C$     | -5      | A          |
|                             | Pulsed (Note 1)    | $I_{CP}$  | -8      | A          |
| Base Current                |                    | $I_B$     | -1      | A          |
| Collector Power Dissipation | $T_a = 25^\circ C$ | $P_C$     | 1.5     | W          |
|                             | $T_c = 25^\circ C$ |           | 10      | W          |
| Junction Temperature        |                    | $T_j$     | 150     | $^\circ C$ |
| Storage Temperature Range   |                    | $T_{stg}$ | -55~150 | $^\circ C$ |



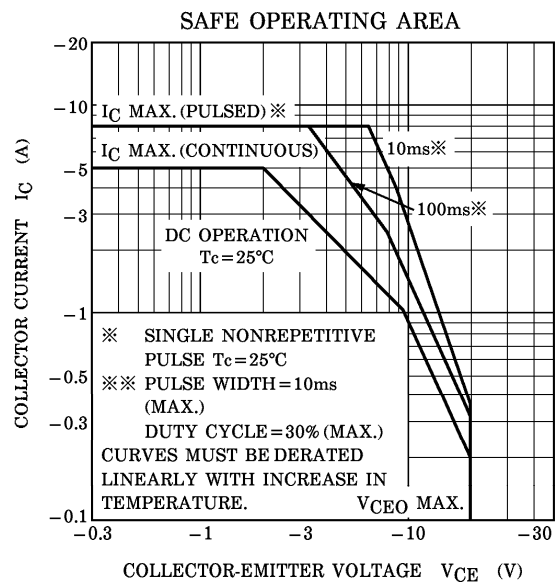
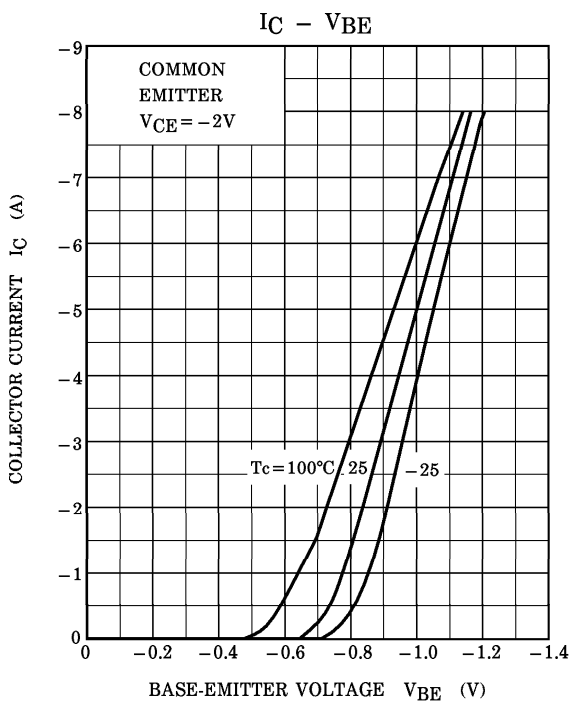
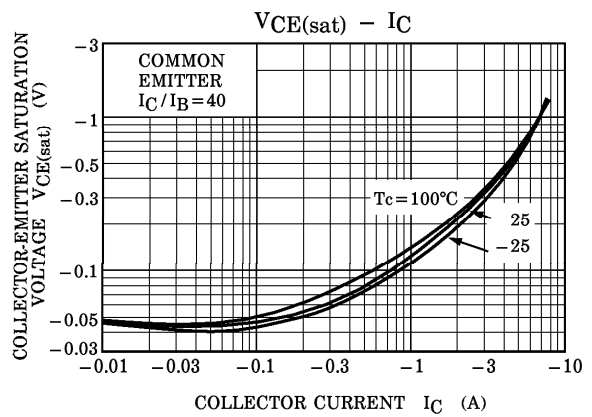
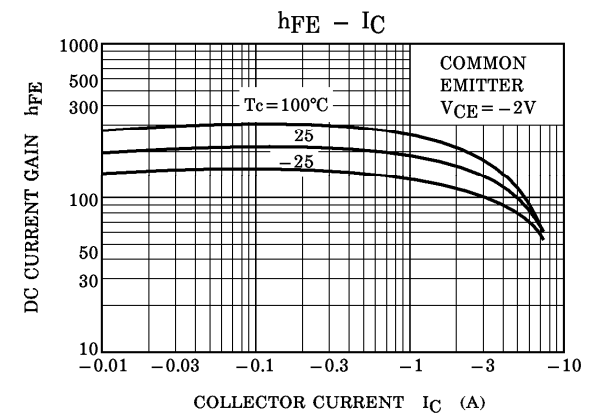
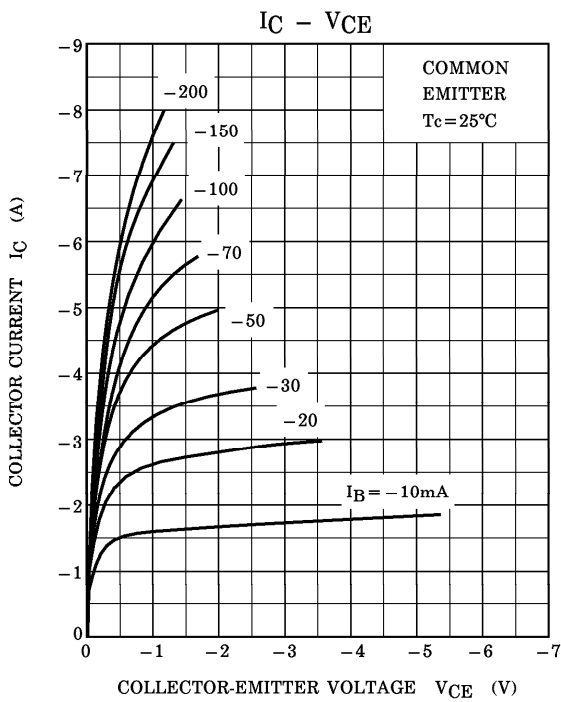
Weight : 0.82g (Typ.)

(Note 1) : Pulse Test : Pulse Width = 10ms (Max.)  
Duty Cycle = 30% (Max.)

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

| CHARACTERISTIC                       | SYMBOL                  | TEST CONDITION                     | MIN. | TYP. | MAX. | UNIT    |
|--------------------------------------|-------------------------|------------------------------------|------|------|------|---------|
| Collector Cut-off Current            | $I_{CBO}$               | $V_{CB} = -35V, I_E = 0$           | —    | —    | -100 | $\mu A$ |
| Emitter Cut-off Current              | $I_{EBO}$               | $V_{EB} = -8V, I_C = 0$            | —    | —    | -100 | $\mu A$ |
| Collector-Emitter Breakdown Voltage  | $V_{(BR)CEO}$           | $I_C = -10mA, I_B = 0$             | -20  | —    | —    | V       |
| DC Current Gain                      | $h_{FE(1)}$<br>(Note 2) | $V_{CE} = -2V, I_C = -0.5A$        | 100  | —    | 320  |         |
|                                      | $h_{FE(2)}$             | $V_{CE} = -2V, I_C = -4A$          | 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                 | $f_T$                   | $V_{CE} = -2V, I_C = -0.5A$        | —    | 170  | —    | MHz     |
| Collector Output Capacitance         | $C_{ob}$                | $V_{CB} = -10V, I_E = 0, f = 1MHz$ | —    | 62   | —    | pF      |

(Note 2) :  $h_{FE(1)}$  Classification    O : 100~200,    Y : 160~320



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