

TOSHIBA TRANSISTOR SILICON NPN TRIPLE DIFFUSED TYPE (PCT PROCESS)

# 2SC3963

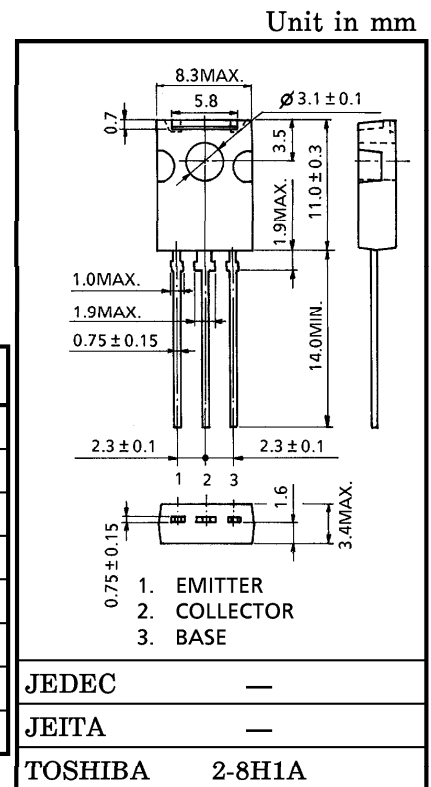
HIGH VOLTAGE GENERAL AMPLIFIER APPLICATIONS

COLOR TV CLASS B SOUND OUTPUT APPLICATIONS

- High Voltage :  $V_{CE0}=160V$

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

| CHARACTERISTIC              | SYMBOL    | RATING  | UNIT       |
|-----------------------------|-----------|---------|------------|
| Collector-Base Voltage      | $V_{CB0}$ | 200     | V          |
| Collector-Emitter Voltage   | $V_{CE0}$ | 160     | V          |
| Emitter-Base Voltage        | $V_{EB0}$ | 5       | V          |
| Collector Current           | $I_C$     | 200     | mA         |
| Base Current                | $I_B$     | 100     | mA         |
| Collector Power Dissipation | $P_C$     | 1.5     | W          |
| Junction Temperature        | $T_j$     | 150     | $^\circ C$ |
| Storage Temperature Range   | $T_{stg}$ | -55~150 | $^\circ C$ |

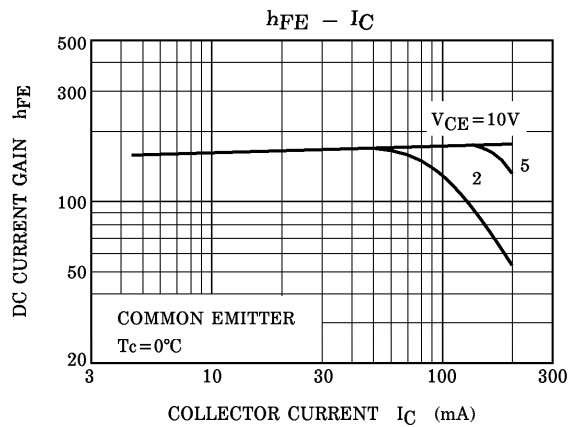
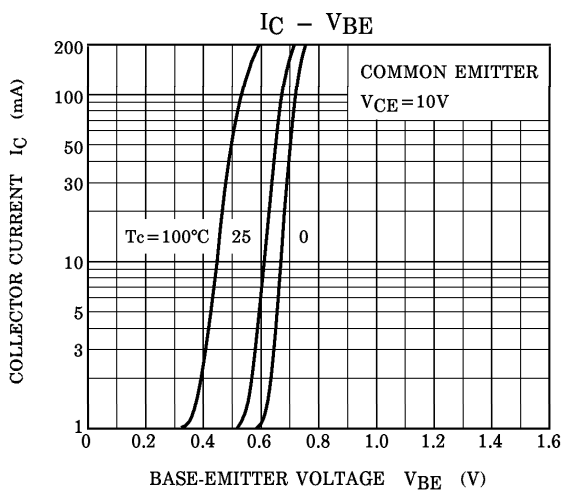
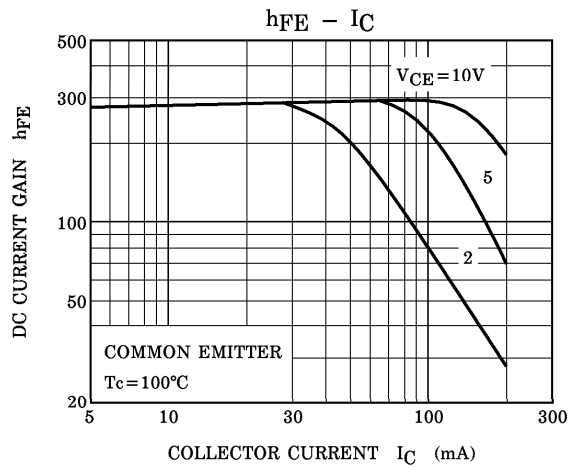
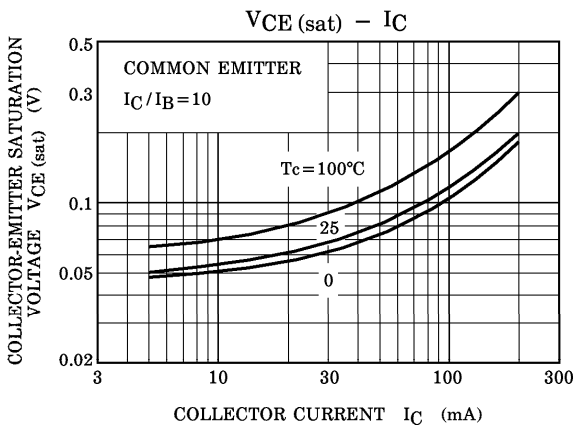
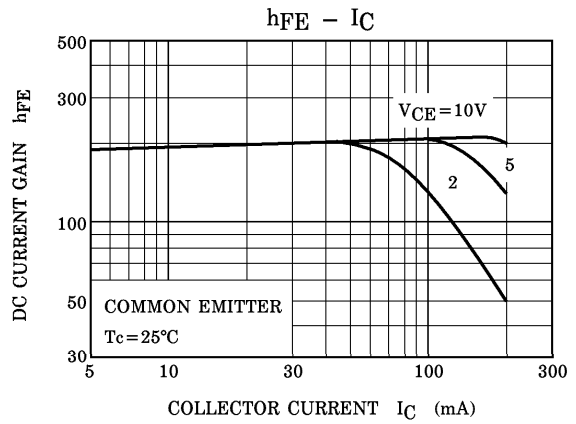
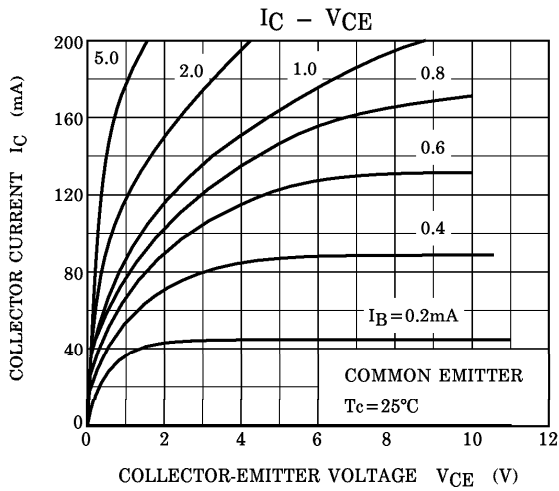


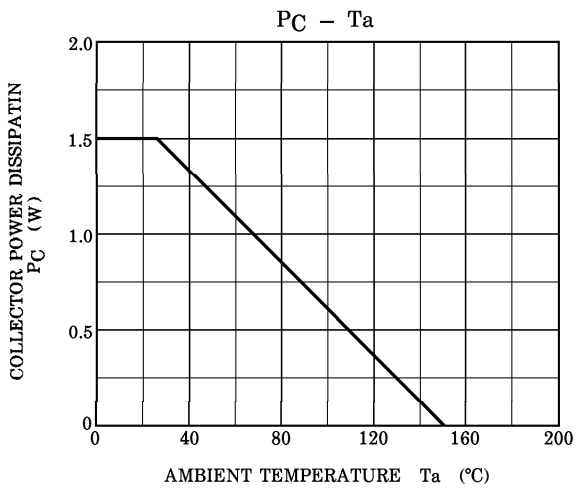
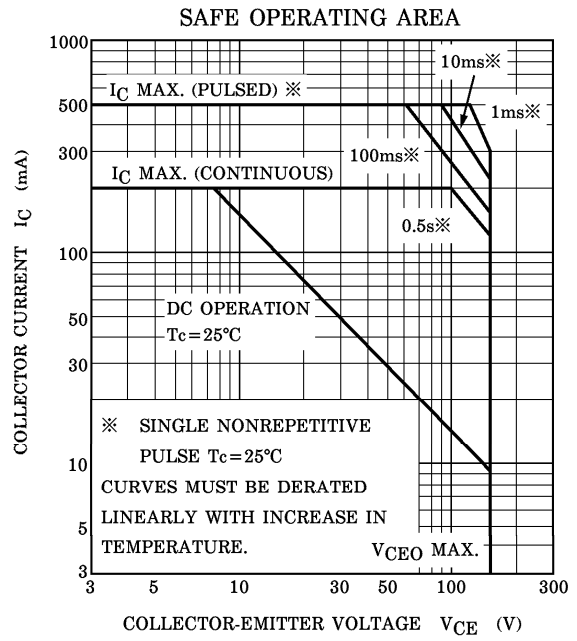
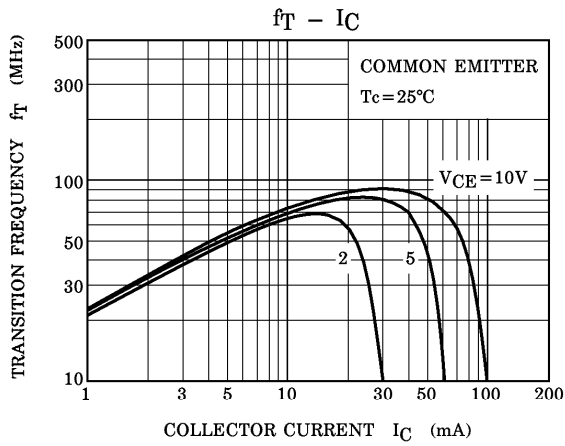
Weight : 1.4g (Typ.)

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

| CHARACTERISTIC                       | SYMBOL                | TEST CONDITION              | MIN. | TYP. | MAX. | UNIT    |
|--------------------------------------|-----------------------|-----------------------------|------|------|------|---------|
| Collector Cut-off Current            | $I_{CB0}$             | $V_{CB}=200V, I_E=0$        | —    | —    | 0.1  | $\mu A$ |
| Emitter Cut-off Current              | $I_{EB0}$             | $V_{EB}=5V, I_C=0$          | —    | —    | 0.1  | $\mu A$ |
| DC Current Gain                      | $h_{FE}(1)$<br>(Note) | $V_{CE}=10V, I_C=50mA$      | 100  | —    | 320  |         |
|                                      | $h_{FE}(2)$           | $V_{CE}=10V, I_C=150mA$     | 80   | —    | —    |         |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$         | $I_C=200mA, I_B=20mA$       | —    | —    | 1.0  | V       |
| Base-Emitter Voltage                 | $V_{BE}$              | $V_{CE}=10V, I_C=5mA$       | 0.55 | 0.65 | 0.75 | V       |
| Transition Frequency                 | $f_T$                 | $V_{CE}=10V, I_C=50mA$      | 50   | —    | —    | MHz     |
| Collector Output Capacitance         | $C_{ob}$              | $V_{CB}=10V, I_E=0, f=1MHz$ | —    | —    | 10   | pF      |

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





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