

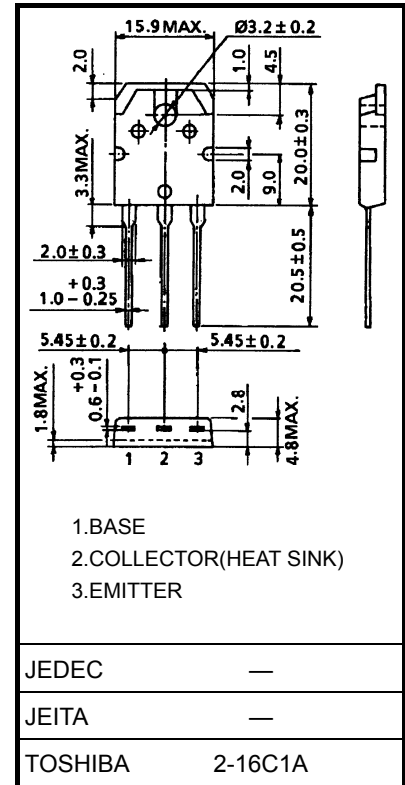
TOSHIBA Transistor Silicon NPN Triple Diffused Type

# TTC0001

○ Power Amplifier Applications

- High collector voltage:  $V_{CE0} = 160$  V (min)
- Complementary to TTA0001
- Recommended for 100-W high-fidelity audio frequency amplifier output stage.

Unit: mm



Weight : 4.7 g (typ.)

### Absolute Maximum Ratings (Tc = 25°C)

| Characteristics             | Symbol    | Rating     | Unit |
|-----------------------------|-----------|------------|------|
| Collector-base voltage      | $V_{CBO}$ | 160        | V    |
| Collector-emitter voltage   | $V_{CEO}$ | 160        | V    |
| Emitter-base voltage        | $V_{EBO}$ | 5          | V    |
| Collector current           | DC        | $I_C$      | 18   |
|                             | Pulse     | $I_{CP}$   | 35   |
| Base current                | $I_B$     | 9          | A    |
| Collector power dissipation | $P_C$     | 150        | W    |
| Junction temperature        | $T_j$     | 150        | °C   |
| Storage temperature range   | $T_{stg}$ | -55 to 150 | °C   |

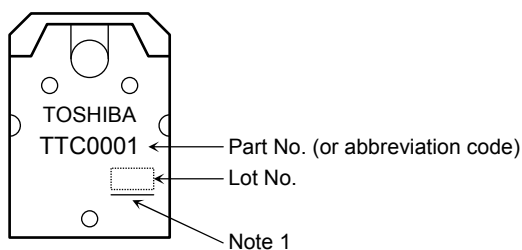
Note : Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

## Electrical Characteristics (Tc = 25°C)

| Characteristics                      | Symbol         | Test Condition                                    | Min | Typ. | Max | Unit          |
|--------------------------------------|----------------|---|-----|------|-----|---------------|
| Collector cut-off current            | $I_{CBO}$      | $V_{CB} = 160\text{ V}, I_E = 0$                  | —   | —    | 1.0 | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$      | $V_{EB} = 5\text{ V}, I_C = 0$                    | —   | —    | 1.0 | $\mu\text{A}$ |
| Collector-emitter breakdown voltage  | $V_{(BR) CEO}$ | $I_C = 50\text{ mA}, I_B = 0$                     | 160 | —    | —   | V             |
| DC current gain                      | $h_{FE} (1)$   | $V_{CE} = 5\text{ V}, I_C = 1\text{ A}$           | 80  | —    | 160 |               |
|                                      | $h_{FE} (2)$   | $V_{CE} = 5\text{ V}, I_C = 9\text{ A}$           | 35  | —    | —   |               |
| Collector-emitter saturation voltage | $V_{CE (sat)}$ | $I_C = 9\text{ A}, I_B = 0.9\text{ A}$            | —   | —    | 2.0 | V             |
| Base-emitter voltage                 | $V_{BE}$       | $V_{CE} = 5\text{ V}, I_C = 9\text{ A}$           | —   | —    | 1.5 | V             |
| Transition frequency                 | $f_T$          | $V_{CE} = 5\text{ V}, I_C = 1\text{ A}$           | —   | 30   | —   | MHz           |
| Collector output capacitance         | $C_{ob}$       | $V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$ | —   | 210  | —   | pF            |

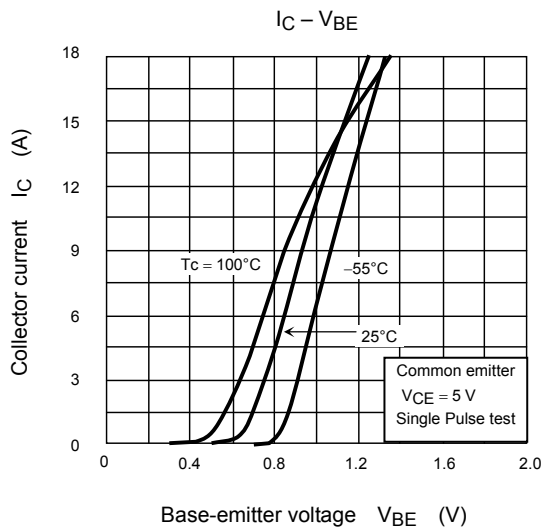
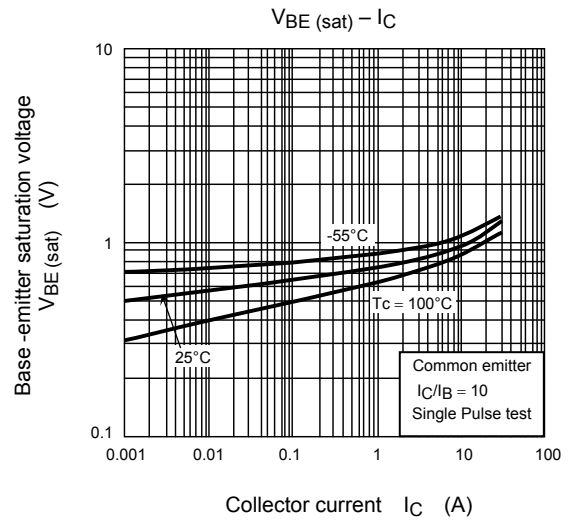
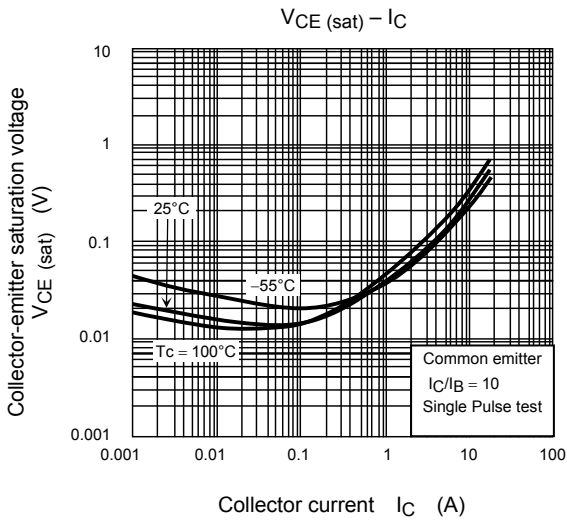
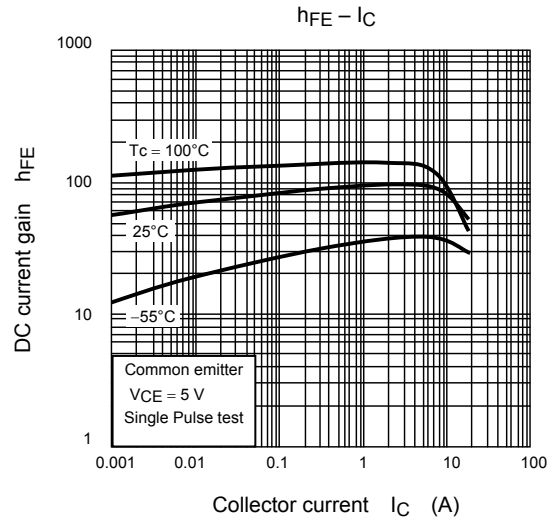
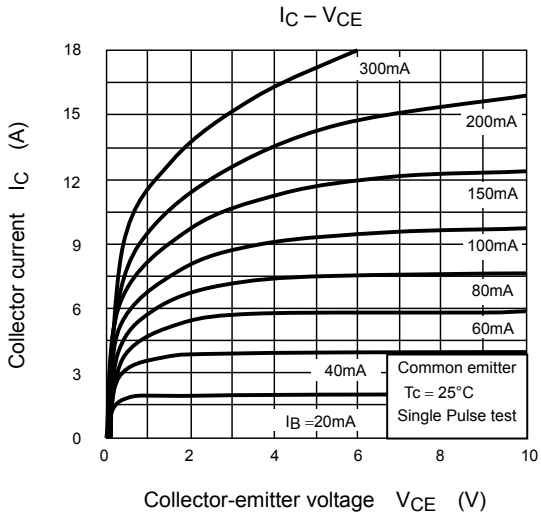
## Marking



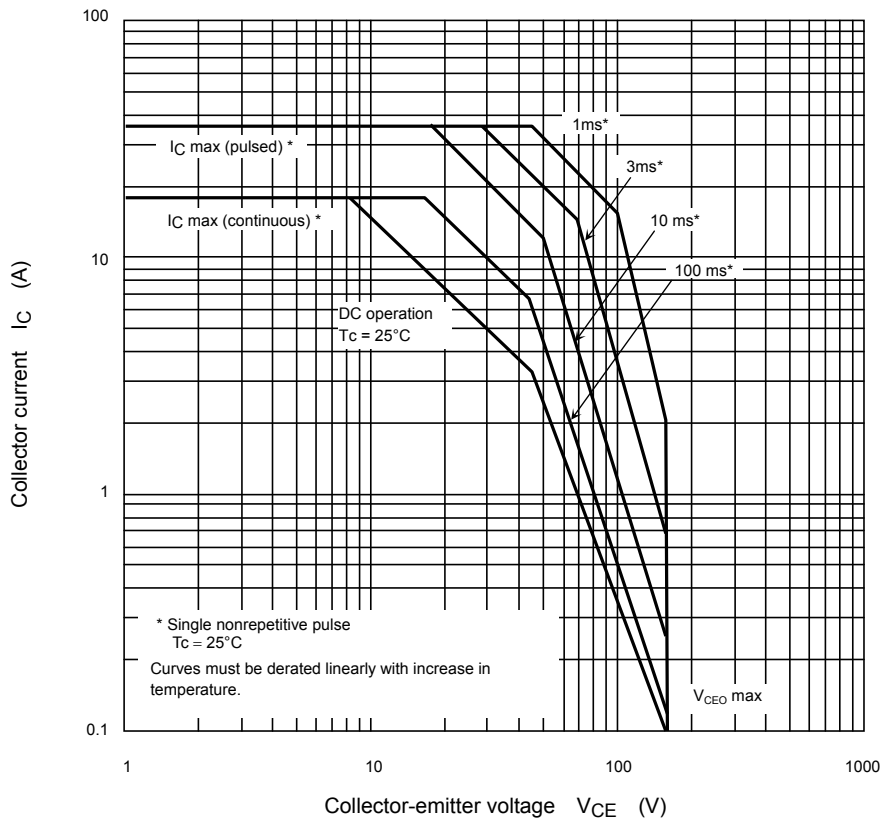
Note 1: Marking for identifying the indication of product Labels  
 [[G]]/RoHS COMPATIBLE or [[G]]/RoHS [[Pb]]

Please contact your TOSHIBA sales representative for details as to environmental matters such as the RoHS compatibility of Product.

The RoHS is the Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.



Safe Operating Area



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