

TOSHIBA Transistor Silicon NPN Triple Diffused Type

# 2SC5242

## Power Amplifier Applications

- High Collector breakdown voltage:  $V_{CE0} = 230\text{ V (min)}$
- Complementary to 2SA1962
- Suitable for use in 80-W high fidelity audio amplifier's output stage

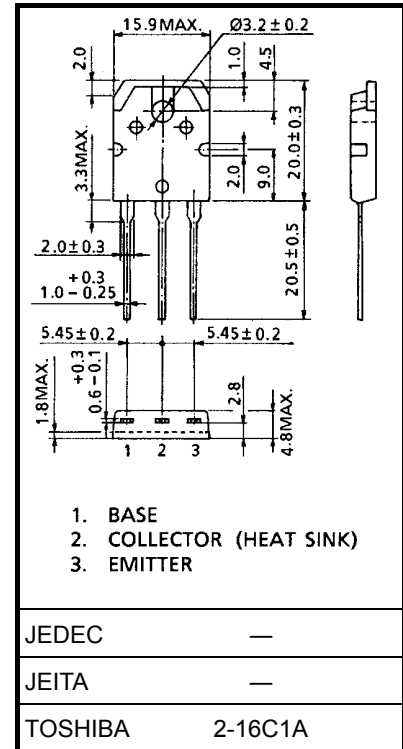
## Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

| Characteristics   | Symbol    | Rating     | Unit             |
|---|-----------|------------|------------------|
| Collector-base voltage                                      | $V_{CB0}$ | 230        | V                |
| Collector-emitter voltage                                   | $V_{CE0}$ | 230        | V                |
| Emitter-base voltage  | $V_{EB0}$ | 5          | V                |
| Collector current   | $I_C$     | 15         | A                |
| Base current  | $I_B$     | 1.5        | A                |
| Collector power dissipation<br>( $T_c = 25^\circ\text{C}$ ) | $P_C$     | 130        | W                |
| Junction temperature  | $T_j$     | 150        | $^\circ\text{C}$ |
| Storage temperature range                                   | $T_{stg}$ | -55 to 150 | $^\circ\text{C}$ |

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).

Unit: mm



Weight: 4.7 g (typ.)

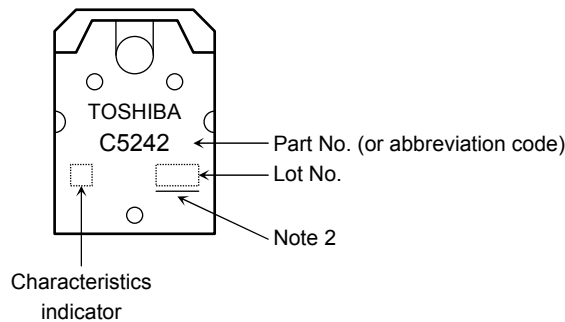
Start of commercial production  
1994-09

## Electrical Characteristics (Ta = 25°C)

| Characteristics                      | Symbol                  | Test Condition                                    | Min | Typ. | Max | Unit          |
|--------------------------------------|-------------------------|---|-----|------|-----|---------------|
| Collector cut-off current            | $I_{CBO}$               | $V_{CB} = 230\text{ V}, I_E = 0$                  | —   | —    | 5.0 | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$               | $V_{EB} = 5\text{ V}, I_C = 0$                    | —   | —    | 5.0 | $\mu\text{A}$ |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$           | $I_C = 50\text{ mA}, I_B = 0$                     | 230 | —    | —   | V             |
| DC current gain                      | $h_{FE(1)}$<br>(Note 1) | $V_{CE} = 5\text{ V}, I_C = 1\text{ A}$           | 55  | —    | 160 |               |
|                                      | $h_{FE(2)}$             | $V_{CE} = 5\text{ V}, I_C = 7\text{ A}$           | 35  | 60   | —   |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$           | $I_C = 8\text{ A}, I_B = 0.8\text{ A}$            | —   | 0.4  | 3.0 | V             |
| Base-emitter voltage                 | $V_{BE}$                | $V_{CE} = 5\text{ V}, I_C = 7\text{ A}$           | —   | 1.0  | 1.5 | V             |
| Transition frequency                 | $f_T$                   | $V_{CE} = 5\text{ V}, I_C = 1\text{ A}$           | —   | 30   | —   | MHz           |
| Collector output capacitance         | $C_{ob}$                | $V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$ | —   | 200  | —   | pF            |

Note 1:  $h_{FE(1)}$  classification R: 55 to 110, O: 80 to 160

## Marking



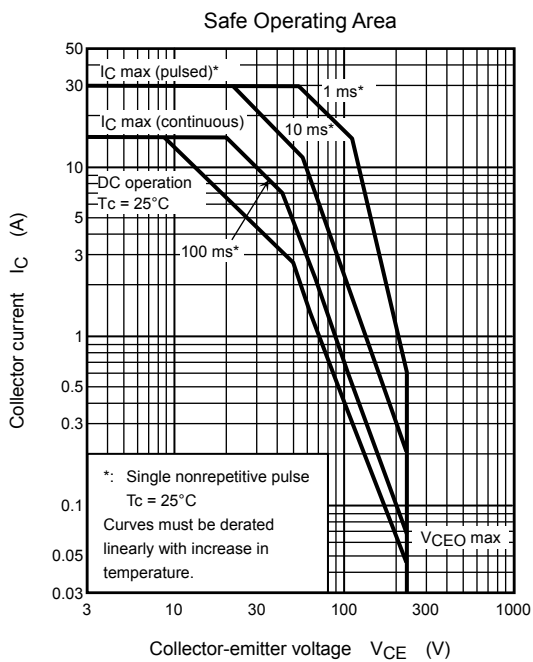
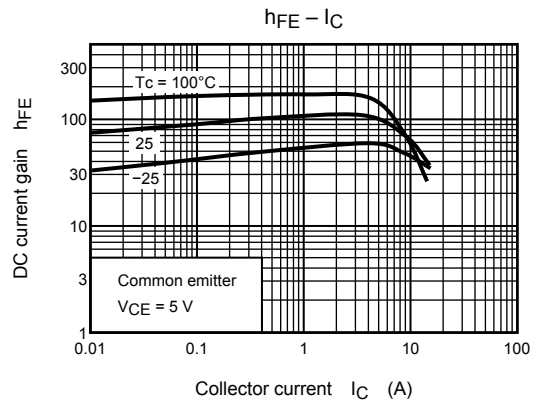
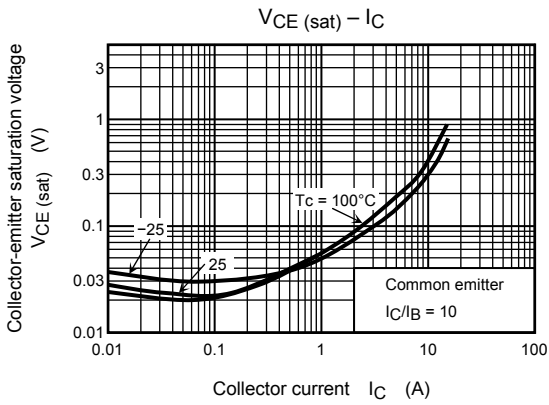
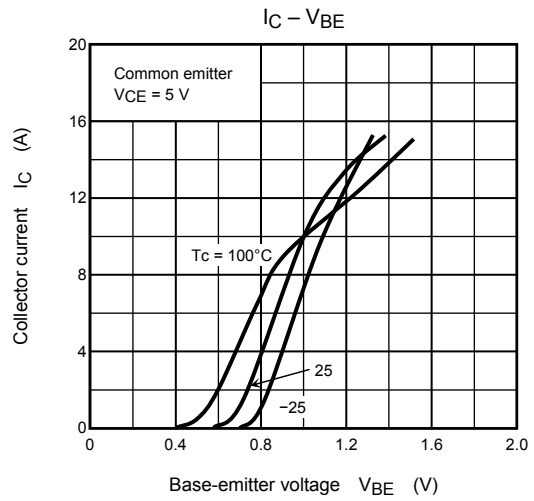
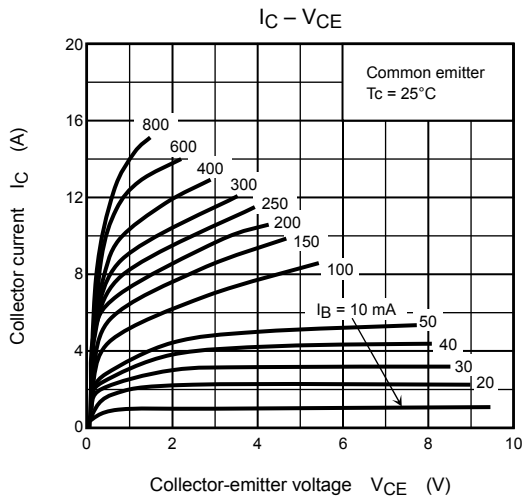
Note 2: A line under a Lot No. identifies the indication of product Labels.

Not underlined :  $[[Pb]]/INCLUDES > MCV$

Underlined :  $[[G]]/RoHS COMPATIBLE$  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 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.



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