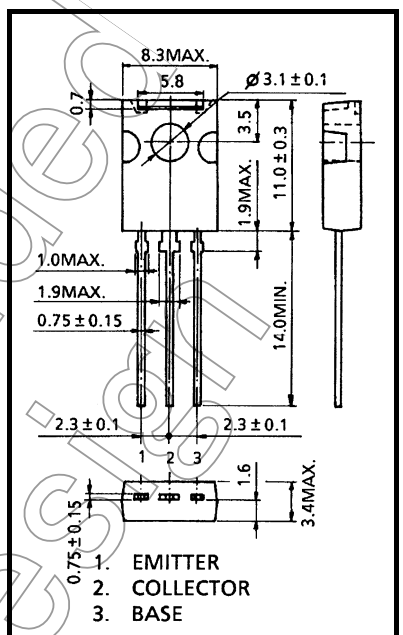
TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

# 2SC3422

Audio Frequency Power Amplifier
Low-Speed Switching

- Suitable for the output stage of 5-watt car radios and car stereos.
- Good $h_{FE}$ linearity
- Complementary to 2SA1359.

Unit: mm




| | |
|---|---|
| JEDEC | — |
| JEITA | — |
| TOSHIBA | 2-8H1A |

Weight: 0.82 g (typ.)

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

| Characteristics | | Symbol | Rating | Unit |
|---|---|---|---|---|
| Collector-base voltage | | $V_{CBO}$ | 40 | V |
| Collector-emitter voltage | | $V_{CEO}$ | 40 | V |
| Emitter-base voltage | | $V_{EBO}$ | 5 | V |
| Collector current | | $I_C$ | 3 | A |
| Base current | | $I_B$ | 1 | A |
| Collector power dissipation | Ta = 25°C | $P_C$ | 1.5 | W |
| | Tc = 25°C | | 10 | |
| Junction temperature | | $T_j$ | 150 | °C |
| Storage temperature range | | $T_{stg}$ | −55 to 150 | °C |

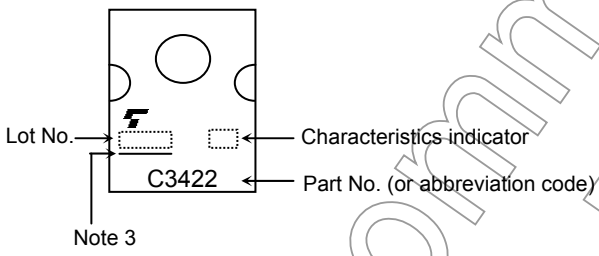
Note1: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) 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 (Ta = 25°C)

| Characteristics | Symbol | Test Condition | Min | Typ. | Max | Unit |
|---|---|---|---|---|---|---|
| Collector cut-off current | $I_{CBO}$ | $V_{CB}$ = 40 V, $I_E$ = 0 | — | — | 100 | nA |
| Emitter cut-off current | $I_{EBO}$ | $V_{EB}$ = 5 V, $I_C$ = 0 | — | — | 100 | nA |
| Collector-emitter breakdown voltage | $V_{(BR)\ CEO}$ | $I_C$ = 10 mA, $I_B$ = 0 | 40 | — | — | V |
| DC current gain | $h_{FE\ (1)}$ (Note 2) | $V_{CE}$ = 2 V, $I_C$ = 0.5 A | 80 | — | 240 | |
| | $h_{FE\ (2)}$ | $V_{CE}$ = 2 V, $I_C$ = 2.5 A | 25 | — | — | |
| Collector-emitter saturation voltage | $V_{CE\ (sat)}$ | $I_C$ = 2 A, $I_B$ = 0.2 A | — | — | 0.8 | V |
| Base-emitter voltage | $V_{BE}$ | $V_{CE}$ = 2 V, $I_C$ = 0.5 A | — | — | 1.0 | V |
| Transition frequency | $f_T$ | $V_{CE}$ = 2 V, $I_C$ = 0.5 A | — | 100 | — | MHz |
| Collector output capacitance | $C_{ob}$ | $V_{CB}$ = 10 V, $I_E$ = 0, f = 1 MHz | — | 35 | — | pF |

Note 2: $h_{FE\ (1)}$ classification O: 80 to 160, Y: 120 to 240

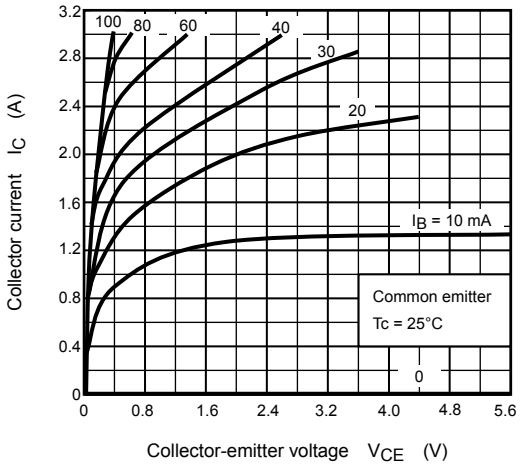
## Marking



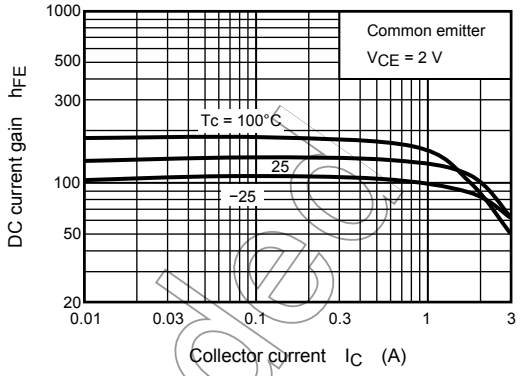

Note 3: A line under a Lot No. identifies the indication of product Labels.
Not underlined: [[Pb]]/INCLUDES > MCV
Underlined: [[G]]/RoHS COMPATIBLE or [[G]]/RoHS [[Pb]]

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

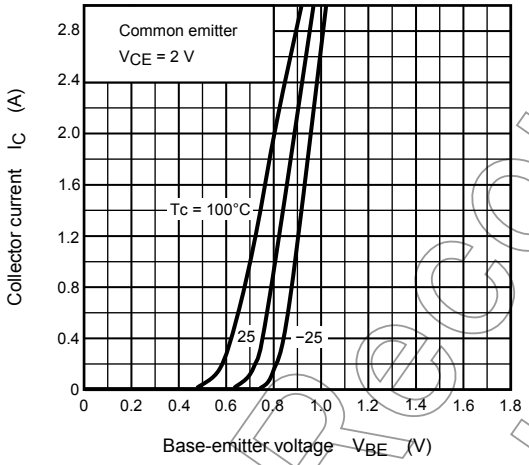
$I_C - V_{CE}$



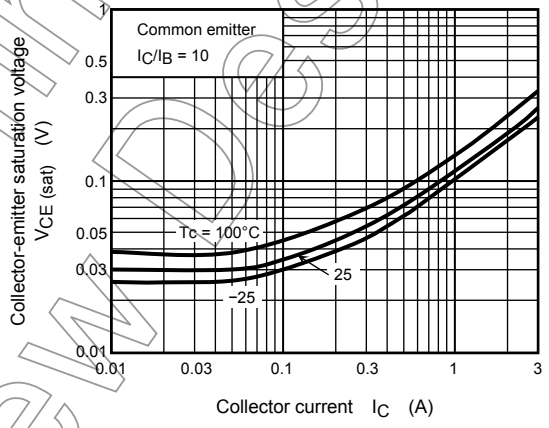

$h_{FE} - I_C$



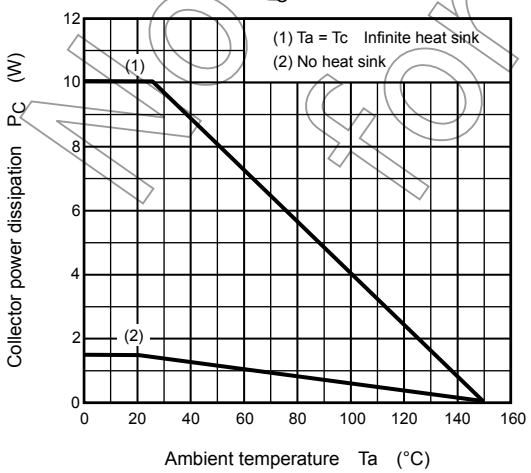

$I_C - V_{BE}$



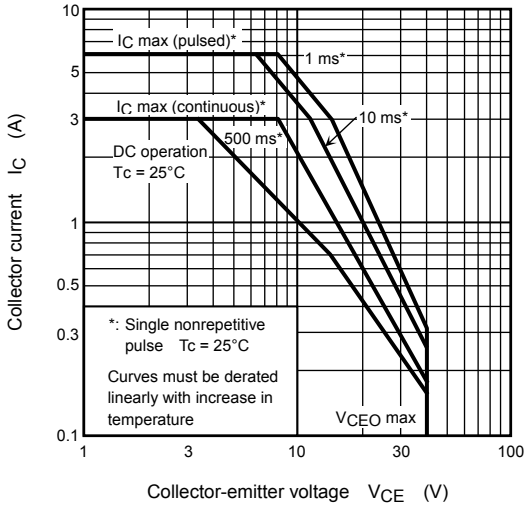

$V_{CE\ (sat)} - I_C$




$P_C - Ta$




Safe Operating Area



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