

TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

HN3C67FE

Audio Frequency Amplifier Applications
AM Amplifier Applications

- Small package (dual type)
- High voltage and high current : $V_{CEO} = 50V$, $I_C = 150mA$ (max)
- High h_{FE} : $h_{FE} = 120$ to 400
- Excellent h_{FE} linearity : $h_{FE} (I_C = 0.1mA) / (I_C = 2mA) = 0.95$ (typ.)

Absolute Maximum Ratings ($T_a = 25^\circ C$)

| Characteristic | Symbol | Rating | Unit |
|-----------------------------|-----------|------------|------------|
| Collector-base voltage | V_{CBO} | 60 | V |
| Collector-emitter voltage | V_{CEO} | 50 | V |
| Emitter-base voltage | V_{EBO} | 5 | V |
| Collector current | I_C | 150 | mA |
| Base current | I_B | 30 | mA |
| Collector power dissipation | P_C^* | 100 | mW |
| Junction temperature | T_j | 150 | $^\circ C$ |
| Storage temperature range | T_{stg} | -55 to 150 | $^\circ C$ |

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.

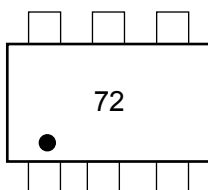
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

* Total rating

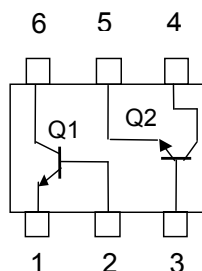
Electrical Characteristics ($T_a = 25^\circ C$) (Q1, Q2 Common)

| Characteristic | Symbol | Test Circuit | Test Condition | Min | Typ. | Max | Unit |
|--------------------------------------|---------------|--------------|---|-----|------|------|---------|
| Collector cut-off current | I_{CBO} | — | $V_{CB} = 60V$, $I_E = 0$ | — | — | 0.1 | μA |
| Emitter cut-off current | I_{EBO} | — | $V_{EB} = 5V$, $I_C = 0$ | — | — | 0.1 | μA |
| DC current gain | h_{FE} | — | $V_{CE} = 6V$, $I_C = 2mA$ | 120 | — | 400 | — |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | — | $I_C = 100mA$, $I_B = 10mA$ | — | 0.1 | 0.25 | V |
| Transition frequency | f_T | — | $V_{CE} = 10V$, $I_C = 1mA$ | 60 | — | — | MHz |
| Collector output capacitance | C_{ob} | — | $V_{CB} = 10V$, $I_E = 0$, $f = 1MHz$ | — | 2 | — | pF |

Marking

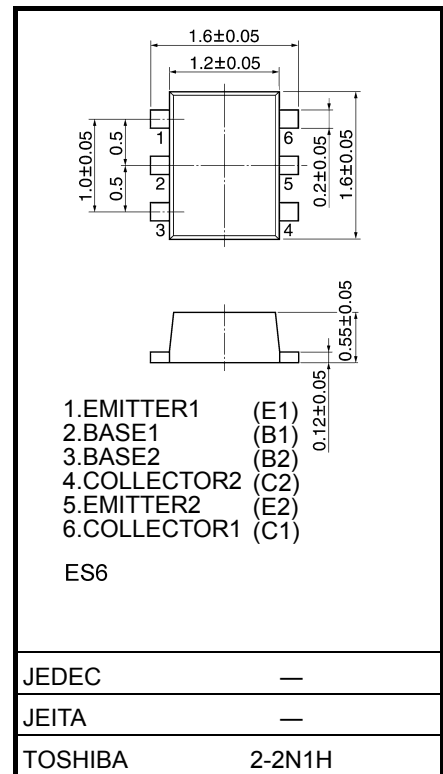


Equivalent Circuit (Top View)

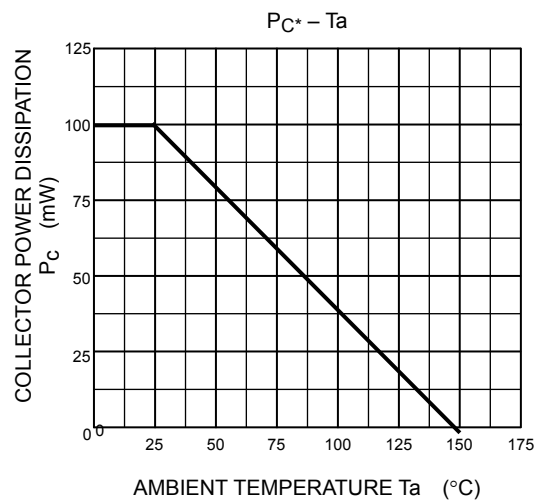
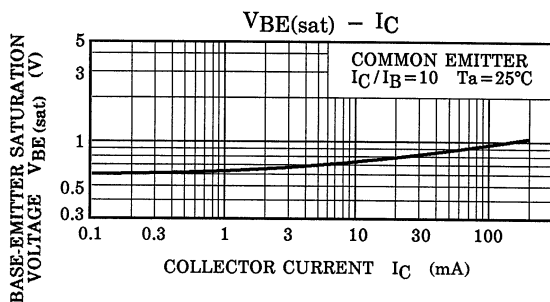
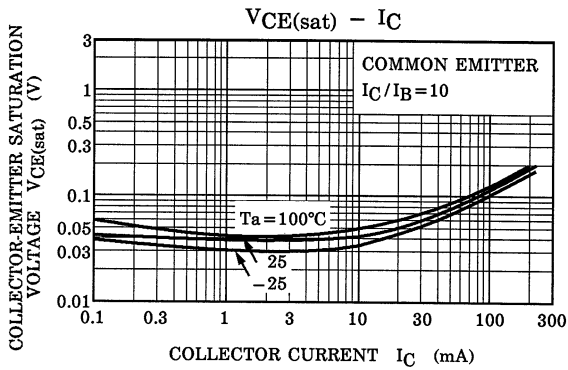
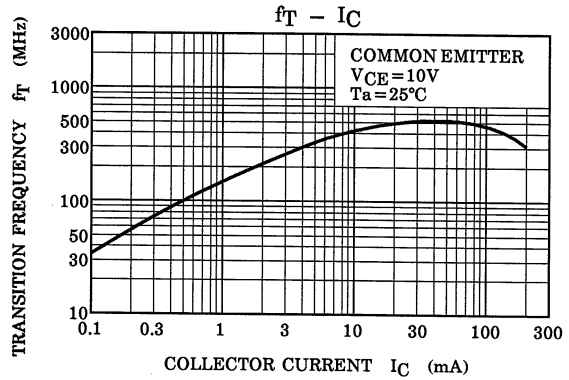
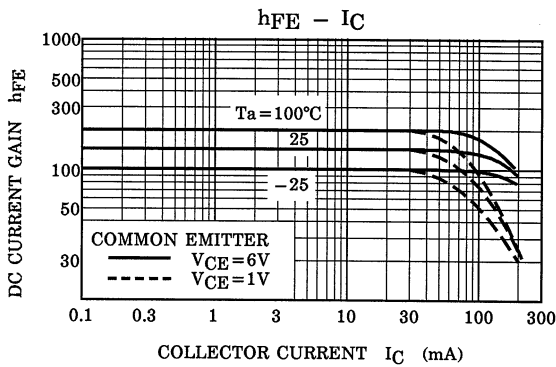
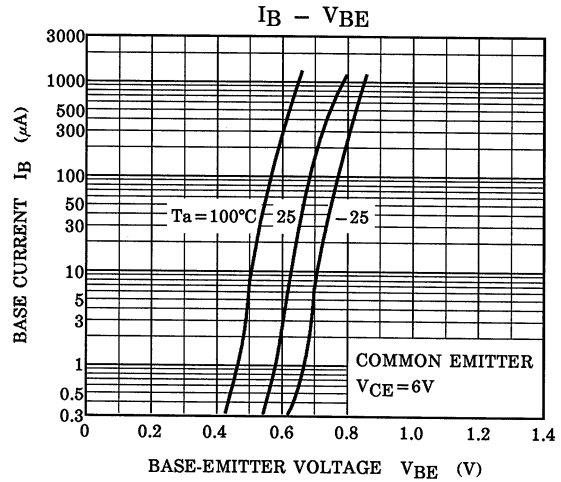
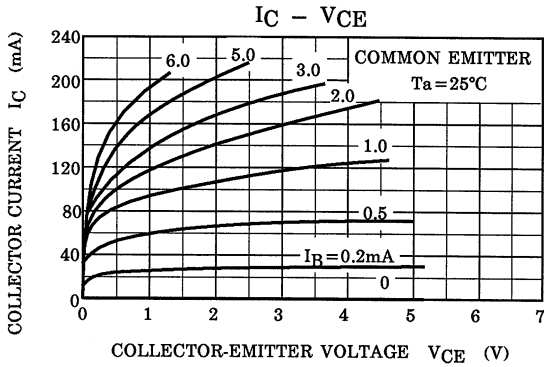


Start of commercial production
2002-11

Unit: mm



(Q1, Q2 Common)



*Total Rating.

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