

TOSHIBA Transistor Silicon NPN Epitaxial Type

2SC5376FV

Audio Frequency General Purpose Amplifier Applications
For Muting and Switching Applications

- Low Collector Saturation Voltage: $V_{CE(sat)}(1) = 15\text{ mV (typ.)}$
@ $I_C = 10\text{ mA}/I_B = 0.5\text{ mA}$
- High Collector Current: $I_C = 400\text{ mA (max)}$

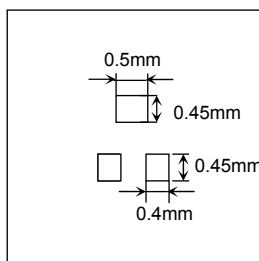
Absolute Maximum Ratings (Ta = 25°C)

| Characteristics | Symbol | Rating | Unit |
|-----------------------------|-----------|---------|------|
| Collector-base voltage | V_{CBO} | 15 | V |
| Collector-emitter voltage | V_{CEO} | 12 | V |
| Emitter-base voltage | V_{EBO} | 5 | V |
| Collector current | I_C | 400 | mA |
| Base current | I_B | 50 | mA |
| Collector power dissipation | P_C | 150 * | mW |
| Junction temperature | T_j | 150 | °C |
| Storage temperature range | T_{stg} | -55~150 | °C |

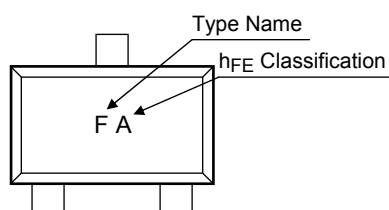
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.)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

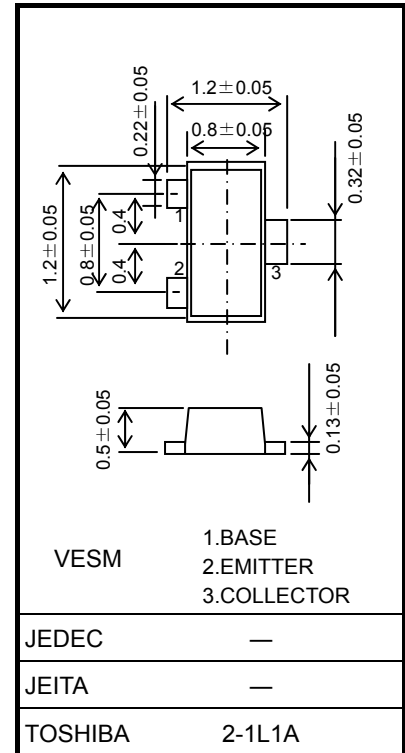
* : Mounted on FR4 board (25.4 mm × 25.4 mm × 1.6mmt)



Marking



Unit: mm

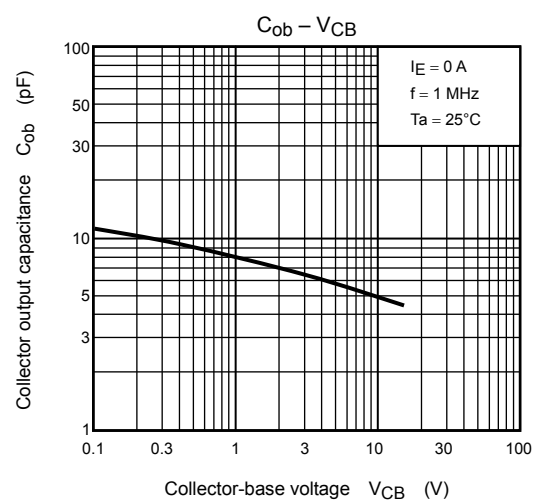
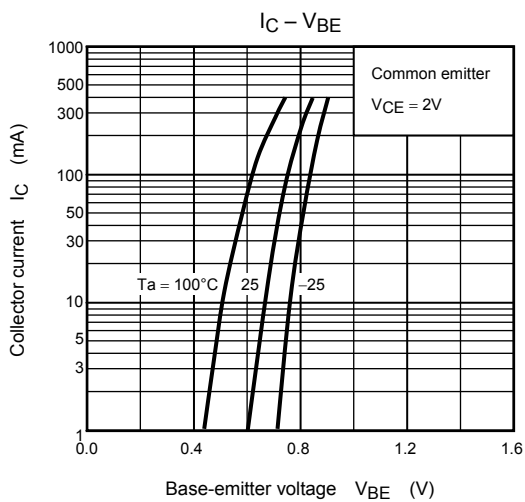
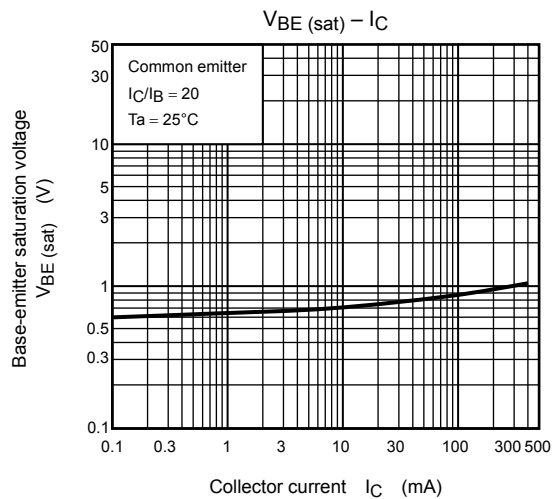
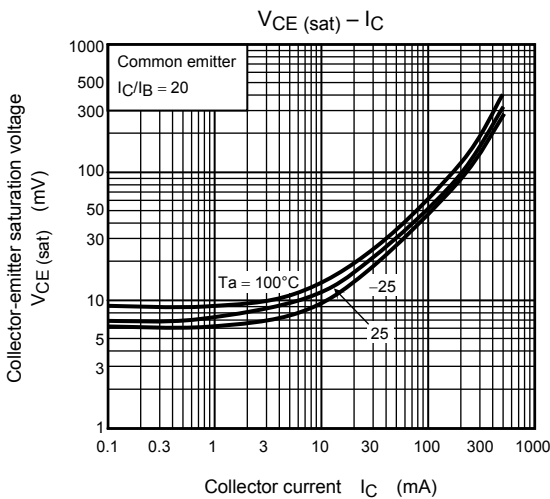
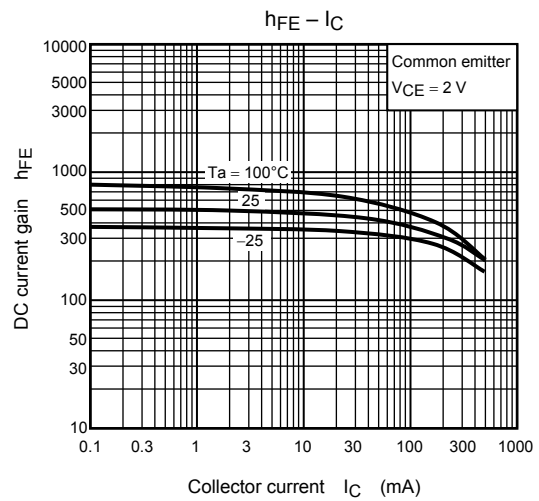
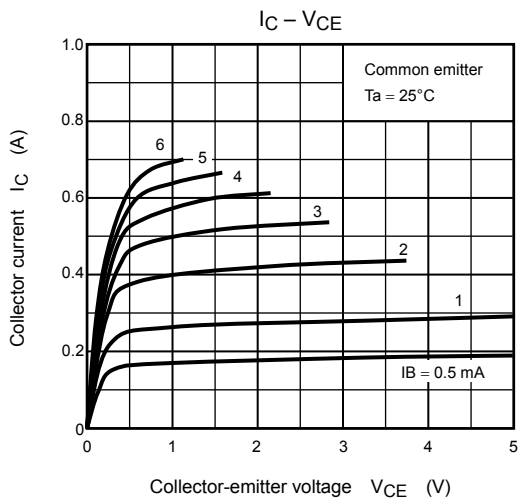


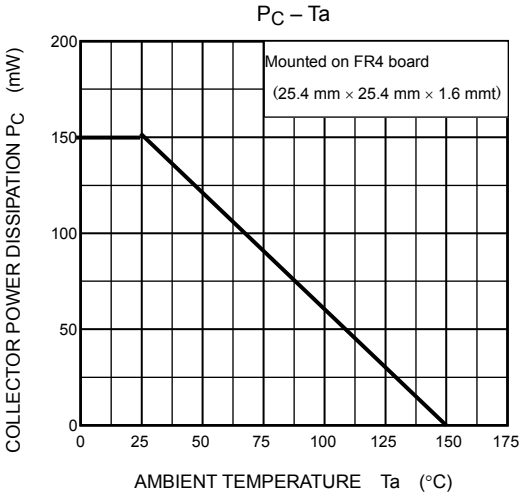
Weight: 1.5 mg (typ.)

Electrical Characteristics (Ta = 25°C)

| Characteristics | | Symbol | Test Condition | Min | Typ. | Max | Unit |
|--------------------------------------|--------------|--------------------|--|-----|------|------|---------------|
| Collector cut-off current | | I_{CBO} | $V_{CB} = 15\text{ V}, I_E = 0$ | — | — | 0.1 | μA |
| Emitter cut-off current | | I_{EBO} | $V_{EB} = 5\text{ V}, I_C = 0$ | — | — | 0.1 | μA |
| DC current gain | | h_{FE} (Note) | $V_{CE} = 2\text{ V}, I_C = 10\text{ mA}$ | 300 | — | 1000 | |
| Collector-emitter saturation voltage | | $V_{CE(sat)}(1)$ | $I_C = 10\text{ mA}, I_B = 0.5\text{ mA}$ | — | 15 | 30 | mV |
| | | $V_{CE(sat)}(2)$ | $I_C = 200\text{ mA}, I_B = 10\text{ mA}$ | — | 110 | 250 | mV |
| Base-emitter voltage | | $V_{BE(sat)}$ | $I_C = 200\text{ mA}, I_B = 10\text{ mA}$ | — | 0.87 | 1.2 | V |
| Transition frequency | | f_T | $V_{CE} = 2\text{ V}, I_C = 10\text{ mA}$ | 80 | 130 | — | MHz |
| Collector output capacitance | | C_{ob} | $V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$ | — | 4.2 | — | pF |
| Collector-emitter on resistance | | R_{on} | $I_B = 1\text{ mA}, V_{in} = 1\text{ V}_{rms}, f = 1\text{ kHz}$ | — | 0.9 | — | Ω |
| Switching time | Turn-on time | t_{on} | <p>Duty Cycle $\leq 2\%$ $I_{B1} = -I_{B2} = 5\text{ mA}$</p> | — | 85 | — | ns |
| | Storage time | t_{stg} | | — | 170 | — | ns |
| | Fall time | t_f | | — | 40 | — | ns |

Note: h_{FE} Classification A: 300 ~ 600, B: 500 ~ 1000





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