

2SA1356

Audio Power Amplifier Applications

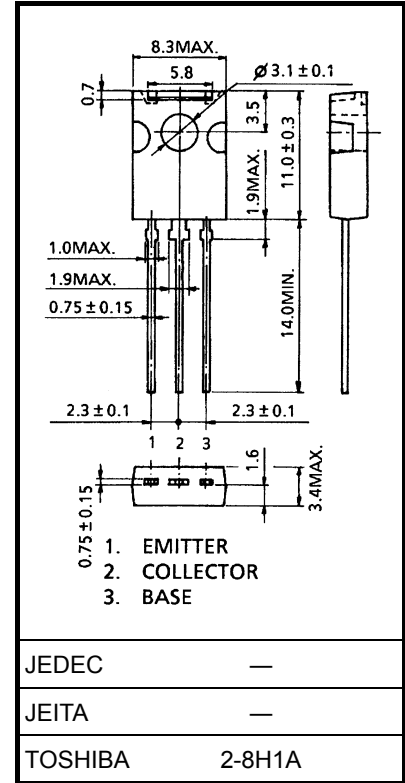
- Low saturation voltage: $V_{CE(sat)} = -0.32\text{ V}$ (typ.)
($I_C = -500\text{ mA}$, $I_B = -50\text{ mA}$)
- High collector power dissipation: $P_C = 1.2\text{ W}$ ($T_a = 25^\circ\text{C}$)
- Complementary to 2SC3419

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

| 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 | -800 | mA |
| Base current | | I_B | -80 | mA |
| Collector power dissipation | $T_a = 25^\circ\text{C}$ | P_C | 1.2 | W |
| | $T_c = 25^\circ\text{C}$ | | 5 | |
| 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



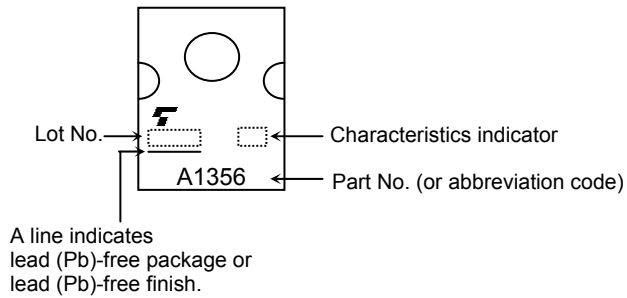
Weight: 0.82 g (typ.)

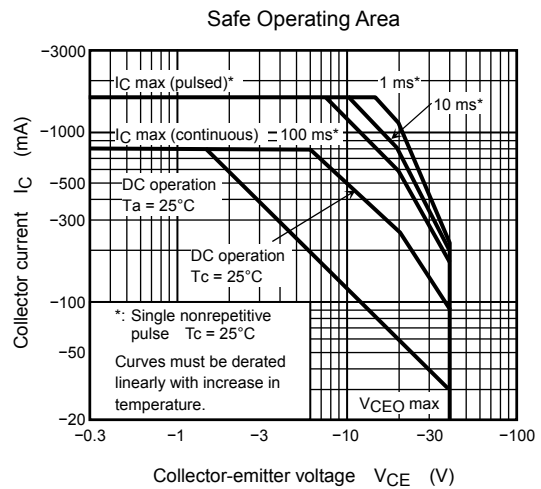
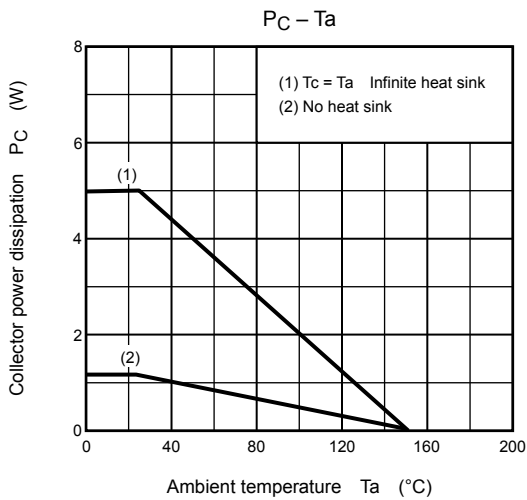
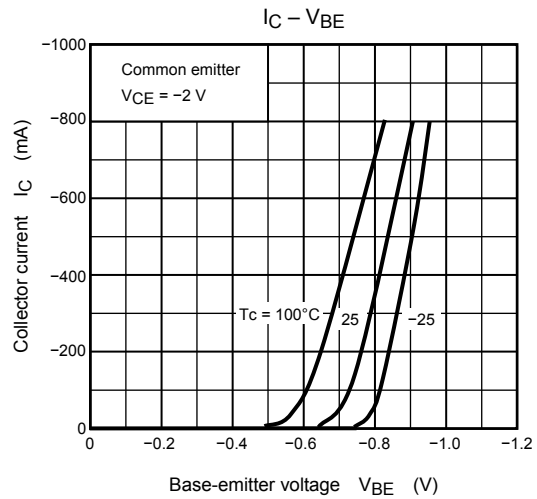
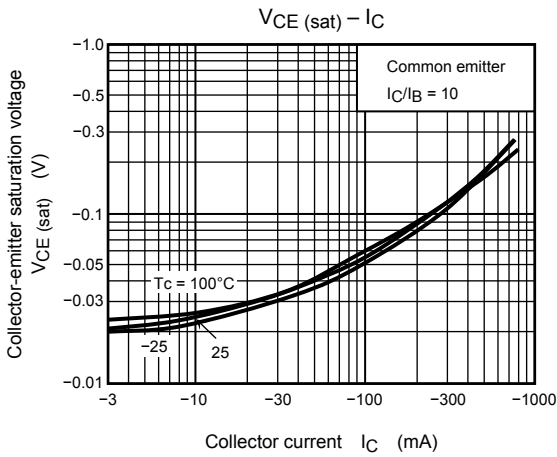
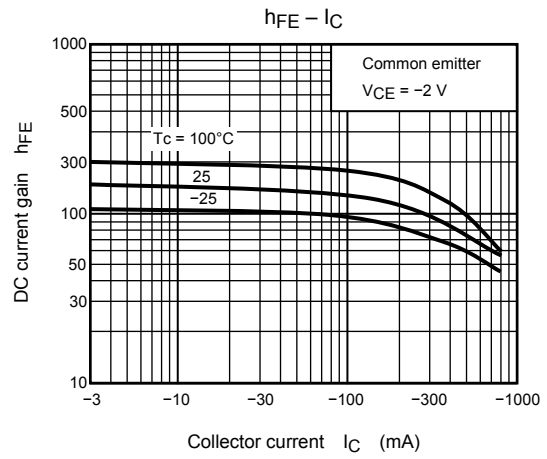
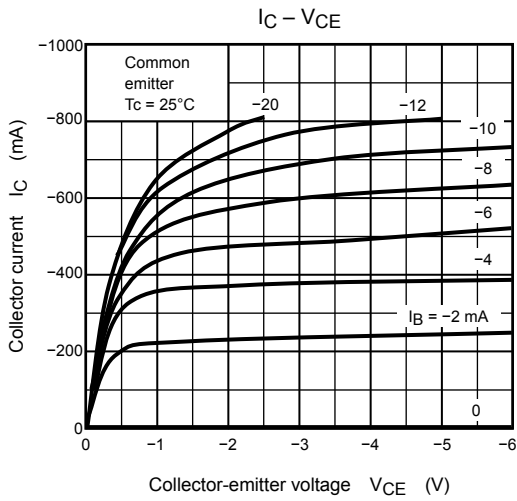
Electrical Characteristics (Tc = 25°C)

| Characteristics | Symbol | Test Condition | Min | Typ. | Max | Unit |
|--------------------------------------|-----------------------|--|-----|-------|------|---------------|
| Collector cut-off current | I_{CBO} | $V_{CB} = -40\text{ V}, I_E = 0$ | — | — | -1.0 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB} = -5\text{ V}, I_C = 0$ | — | — | -1.0 | μA |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C = -10\text{ mA}, I_B = 0$ | -40 | — | — | V |
| DC current gain | $h_{FE(1)}$ (Note) | $V_{CE} = -2\text{ V}, I_C = -50\text{ mA}$ | 70 | — | 240 | |
| | $h_{FE(2)}$ | $V_{CE} = -2\text{ V}, I_C = -800\text{ mA}$ | 13 | 50 | — | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C = -500\text{ mA}, I_B = -50\text{ mA}$ | — | -0.32 | -0.8 | V |
| Base-emitter voltage | V_{BE} | $V_{CE} = -2\text{ V}, I_C = -500\text{ mA}$ | — | — | -1.3 | V |
| Transition frequency | f_T | $V_{CE} = -2\text{ V}, I_C = -0.5\text{ A}$ | 50 | 100 | — | MHz |
| Collector output capacitance | C_{ob} | $V_{CB} = -10\text{ V}, I_E = 0, f = 1\text{ MHz}$ | — | 20 | — | pF |

Note: $h_{FE(1)}$ classification O: 70 to 140, Y: 120 to 240

Marking





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20070701-EN

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