

2SC3944, 2SC3944A

Silicon NPN epitaxial planar type

For low-frequency driver and high power amplification

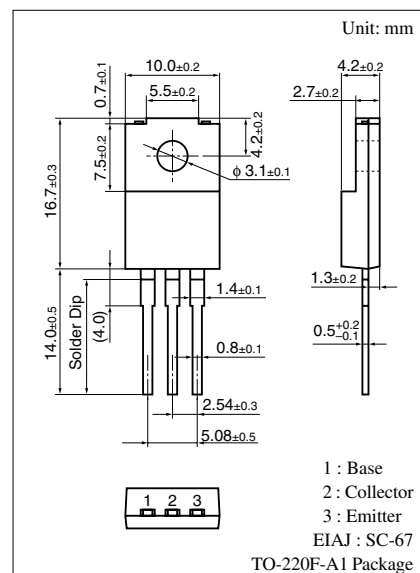
Complementary to 2SA1535 and 2SA1535A

■ Features

- Excellent current I_C characteristics of forward current transfer ratio h_{FE} vs. collector
- High transition frequency f_T
- A complementary pair with 2SA1535 and 2SA1535A, is optimum for the driver-stage of a 60 W to 100 W output amplifier
- Full-pack package which can be installed to the heat sink with one screw

■ Absolute Maximum Ratings $T_C = 25^\circ\text{C}$

| Parameter | | Symbol | Rating | Unit |
|------------------------------|----------------------------|-----------|-------------|--------------------|
| Collector to base voltage | 2SC3944 | V_{CBO} | 150 | V |
| | 2SC3944A | | 180 | |
| Collector to emitter voltage | 2SC3944 | V_{CEO} | 150 | V |
| | 2SC3944A | | 180 | |
| Emitter to base voltage | | V_{EBO} | 5 | V |
| Peak collector current | | I_{CP} | 1.5 | A |
| Collector current | | I_C | 1 | A |
| Collector power dissipation | $T_C = 25^{\circ}\text{C}$ | P_C | 15 | W |
| | $T_a = 25^{\circ}\text{C}$ | | 2.0 | |
| Junction temperature | | T_j | 150 | $^{\circ}\text{C}$ |
| Storage temperature | | T_{stg} | -55 to +150 | $^{\circ}\text{C}$ |

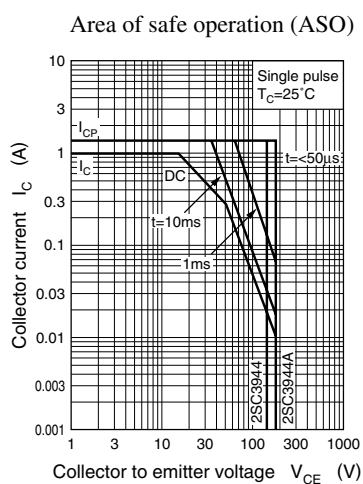
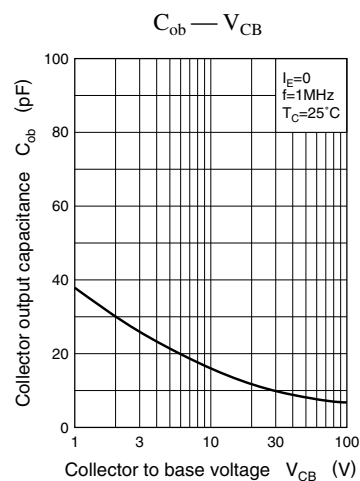
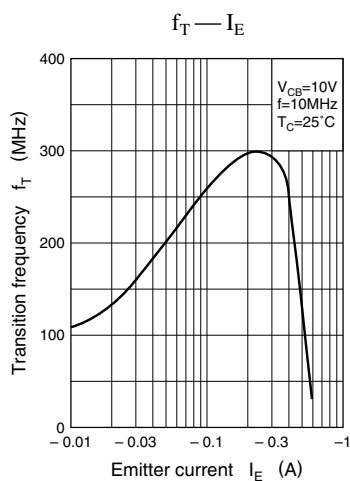
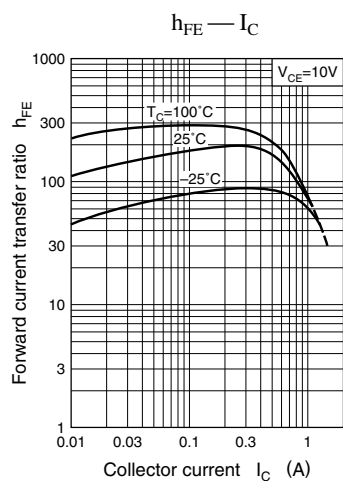
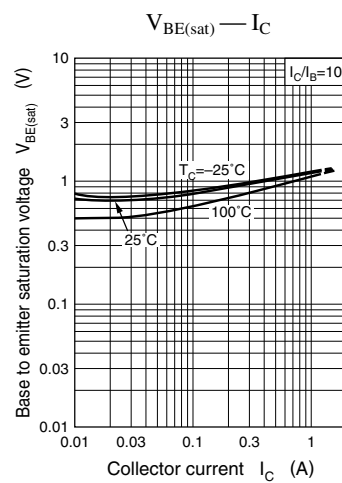
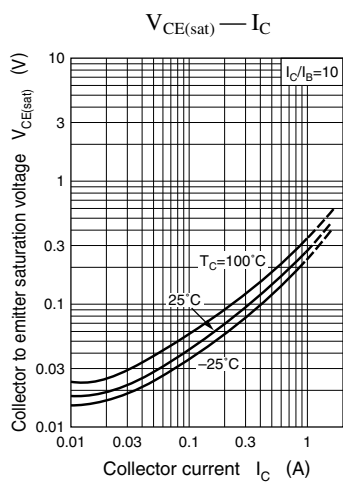
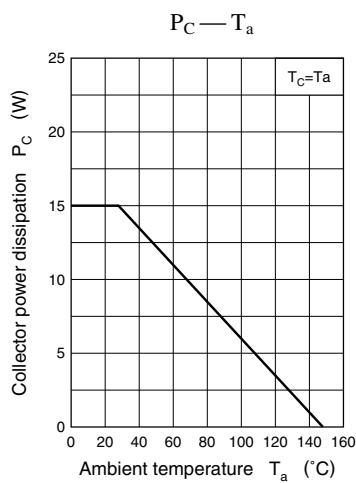


■ Electrical Characteristics $T_C = 25^\circ\text{C}$

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---|---------------|--|-----|-----|-----|---------------|
| Collector cutoff current | I_{CBO} | $V_{CB} = 150\text{ V}, I_E = 0$ | | | 10 | μA |
| | | $V_{CB} = 180\text{ V}, I_E = 0$ | | | 10 | |
| Collector to base voltage | V_{CEO} | $I_C = 1\text{ mA}, I_B = 0$ | 150 | | | V |
| | | | 180 | | | |
| Emitter cutoff current | V_{EBO} | $I_E = 10\text{ }\mu\text{A}, I_C = 0$ | 5 | | | V |
| Forward current transfer ratio | h_{FE1}^* | $V_{CE} = 10\text{ V}, I_C = 150\text{ mA}$ | 95 | 160 | 220 | |
| | h_{FE2} | $V_{CE} = 5\text{ V}, I_C = 500\text{ mA}$ | 50 | 100 | | |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 500\text{ mA}, I_B = 50\text{ mA}$ | | 0.5 | 2 | V |
| Base to emitter saturation voltage | $V_{BE(sat)}$ | $I_C = 500\text{ mA}, I_B = 50\text{ mA}$ | | 1 | 2 | V |
| Transition frequency | f_T | $V_{CB} = 10\text{ V}, I_E = -50\text{ mA}, f = 10\text{ MHz}$ | | 200 | | MHz |
| Collector output capacitance | C_{ob} | $V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$ | | 30 | 50 | pF |

Note) *: Rank classification

| Rank | Q | R |
|-----------|-----------|------------|
| h_{FE1} | 95 to 155 | 130 to 220 |



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