



2SA1592/2SC4134

High-Voltage Switching Applications

Applications

- Power supplies, relay drivers, lamp drivers.

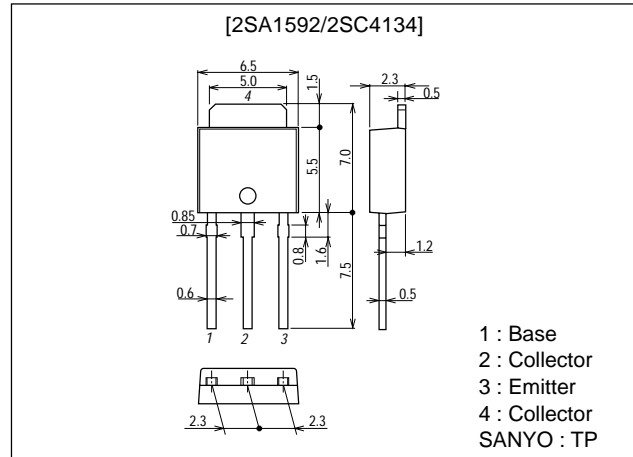
Features

- Adoption FBET, MBIT processes.
- High breakdown voltage and large current capacity.
- Fast switching speed.
- Small and slim package permitting 2SA1592/2SC4134-applied sets to be made more compact.

Package Dimensions

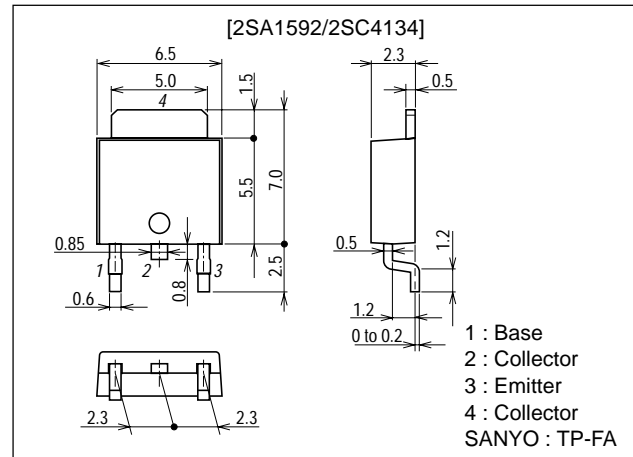
unit:mm

2045B



unit:mm

2044B



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2SA1592/2SC4134

() : 2SA1592

Specifications

Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|-----------|------------------------|-------------|------------------|
| Collector-to-Base Voltage | V_{CB0} | | (-)120 | V |
| Collector-to-Emitter Voltage | V_{CEO} | | (-)100 | V |
| Emitter-to-Base Voltage | V_{EBO} | | (-)6 | V |
| Collector Current | I_C | | (-)1 | A |
| Collector Current (Pulse) | I_{CP} | | (-)2 | A |
| Collector Dissipation | P_C | | 0.8 | W |
| | | $T_c=25^\circ\text{C}$ | 10 | W |
| Junction Temperature | T_j | | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | | -55 to +150 | $^\circ\text{C}$ |

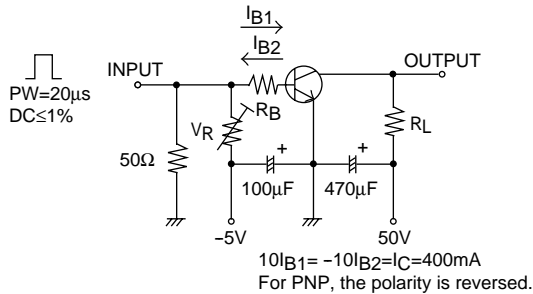
* : The 2SA1592/2SC4134 are classified by 100mA h_{FE} as follows :

| Rank | R | S | T |
|----------|------------|------------|------------|
| h_{FE} | 100 to 200 | 140 to 280 | 200 to 400 |

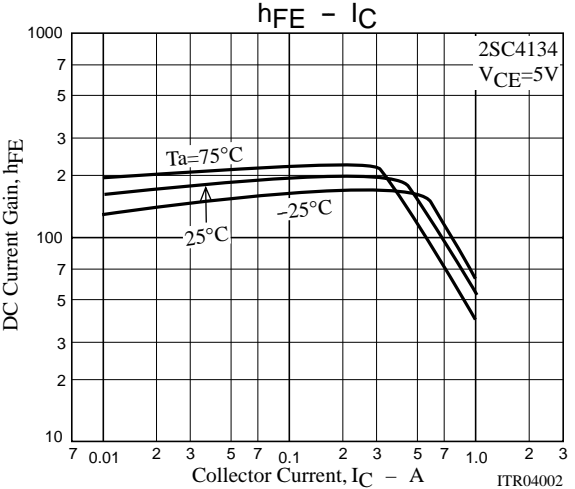
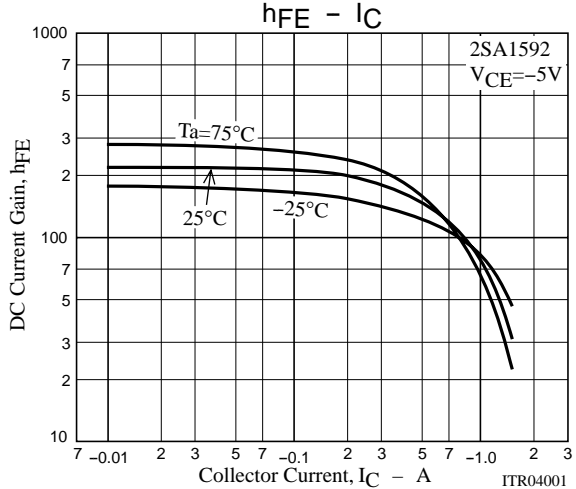
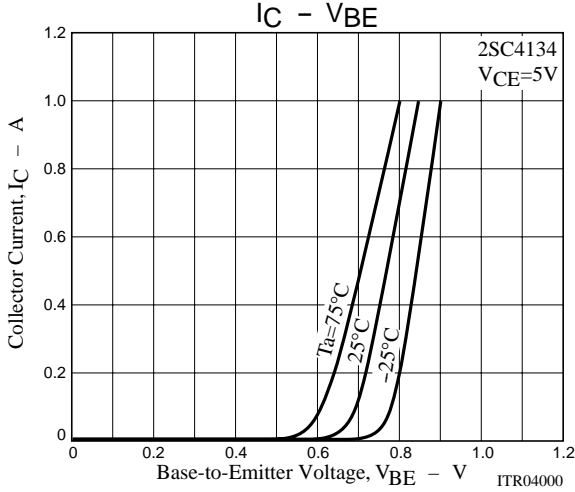
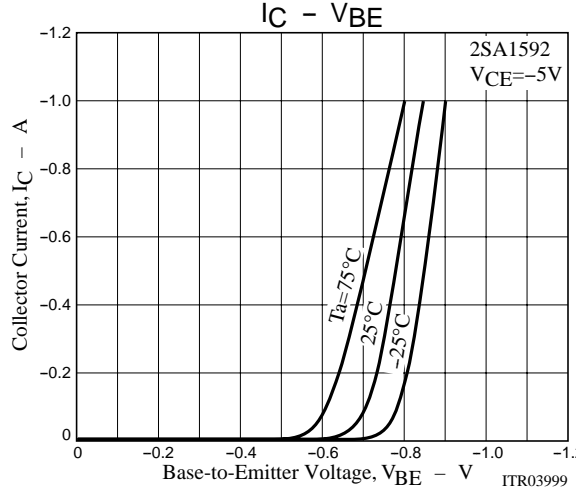
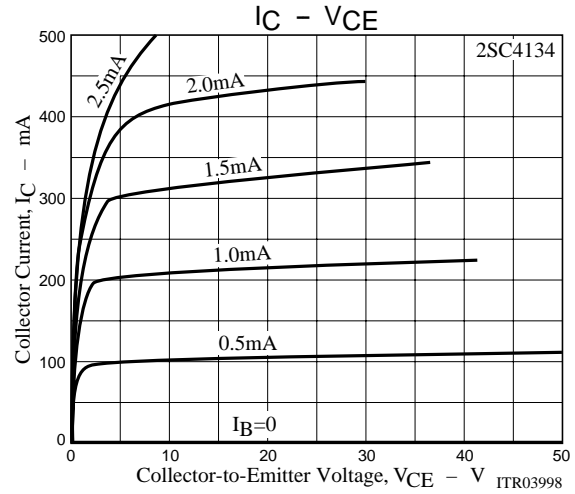
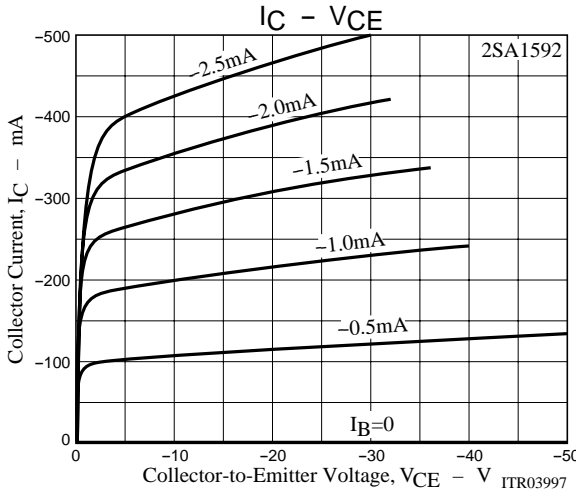
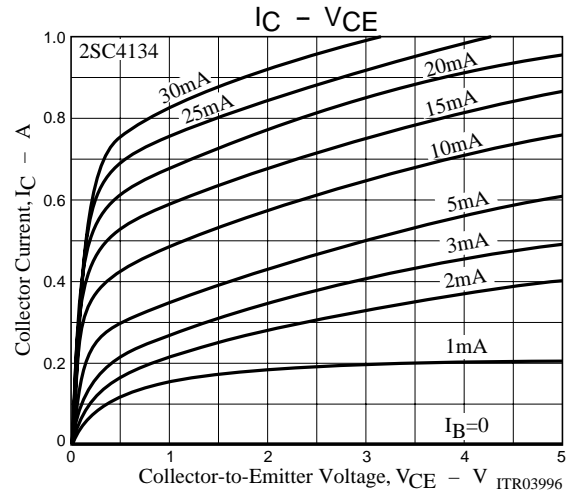
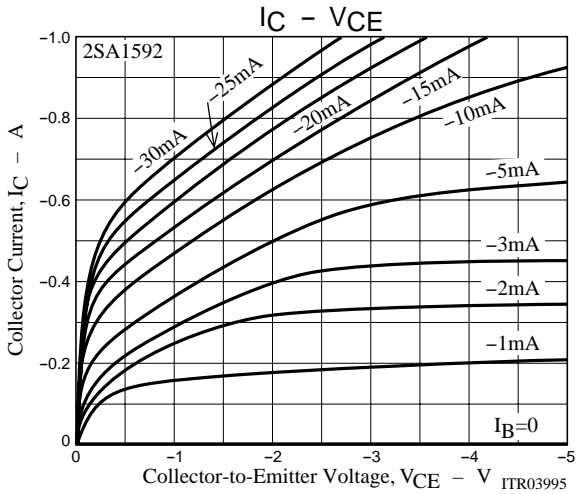
Electrical Characteristics at $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---------------|---|---------|---------|--------|------|
| | | | min | typ | max | |
| Collector Cutoff Current | I_{CBO} | $V_{CB} = (-)100\text{V}, I_E = 0$ | | | (-)100 | nA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB} = (-)4\text{V}, I_C = 0$ | | | (-)100 | nA |
| DC Current Gain | h_{FE} | $V_{CE} = (-)5\text{V}, I_C = (-)100\text{mA}$ | 100* | | 400* | |
| Gain-Bandwidth Product | f_T | $V_{CE} = (-)10\text{V}, I_C = (-)100\text{mA}$ | | 120 | | MHz |
| Output Capacitance | C_{ob} | $V_{CB} = (-)10\text{V}, f = 1\text{MHz}$ | | 8.5 | | pF |
| | | | | (13) | | pF |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = (-)400\text{mA}, I_B = (-)40\text{mA}$ | | (-0.2) | (-0.6) | V |
| | | | | 0.1 | 0.4 | V |
| Base-to-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C = (-)400\text{mA}, I_B = (-)40\text{mA}$ | | (-)0.85 | (-)1.2 | V |
| Collector-to-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C = (-)10\mu\text{A}, I_E = 0$ | (-)120 | | | V |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = (-)1\text{mA}, R_{BE} = \infty$ | (-)100 | | | V |
| Emitter-to-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E = (-)10\mu\text{A}, I_C = 0$ | (-)6 | | | V |
| Turn-ON Time | t_{on} | See specified Test Circuit | | (80) | | ns |
| | | | | 80 | | ns |
| Storage Time | t_{stg} | See specified Test Circuit | | (700) | | ns |
| | | | | 850 | | ns |
| Fall Time | t_f | See specified Test Circuit | | (40) | | ns |
| | | | | 50 | | ns |

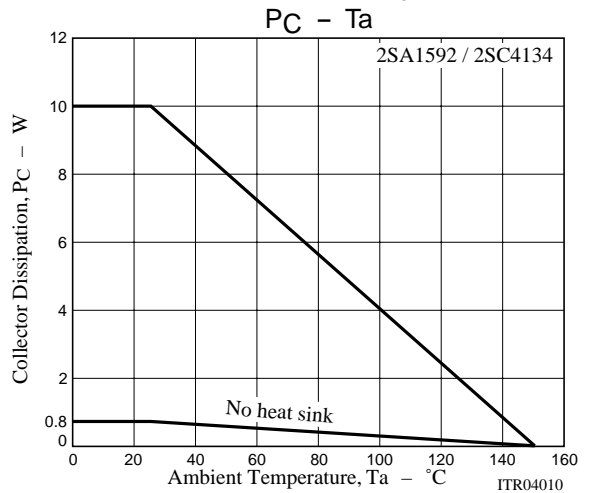
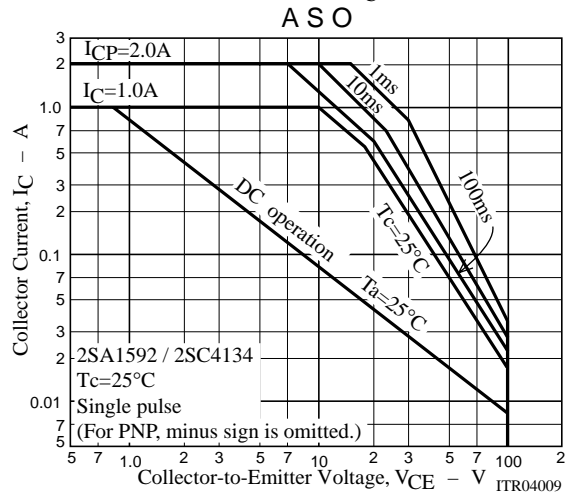
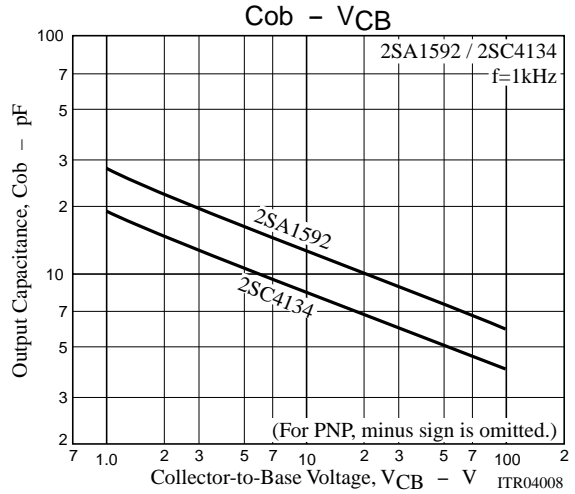
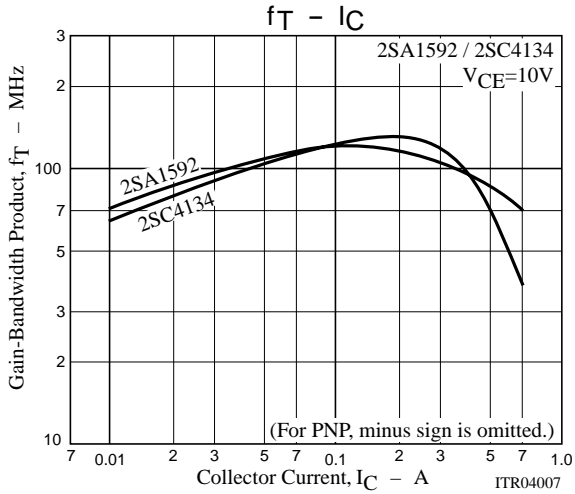
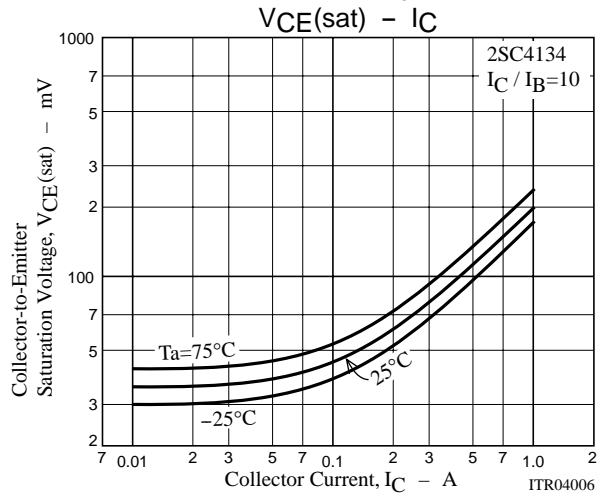
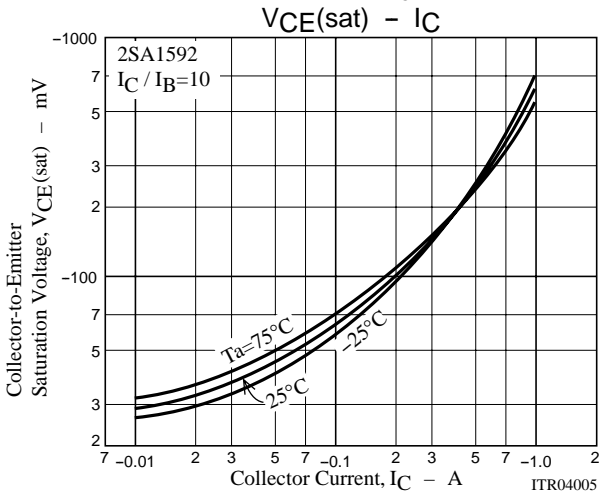
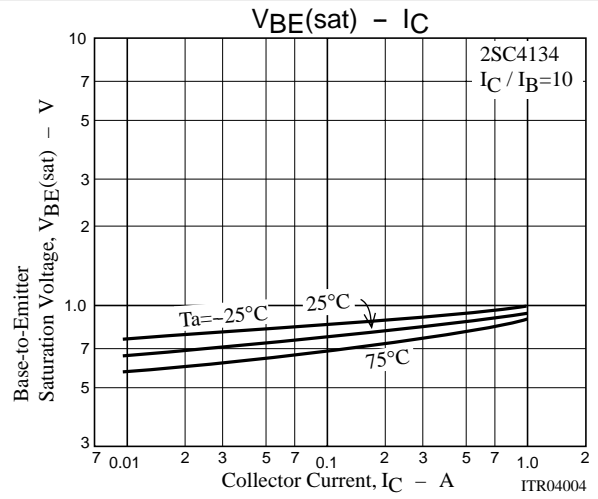
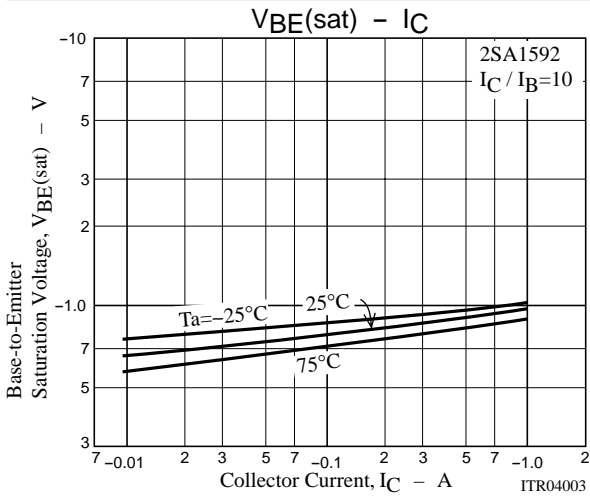
Switching Time Test Circuit



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