

2SA2117 / 2SC5934



High Current Switching Applications

Applications

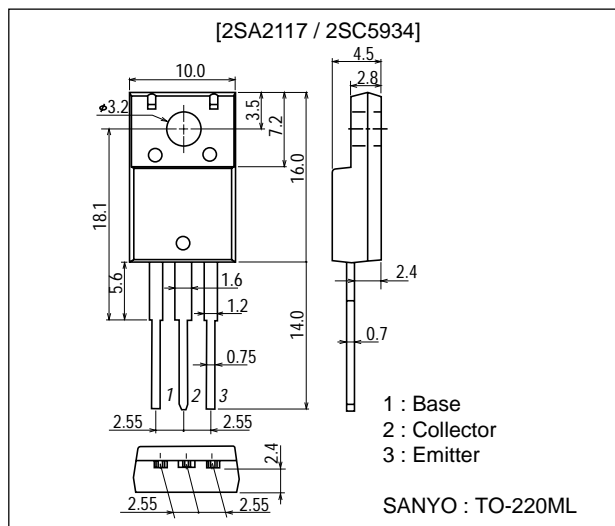
- Relay drivers, lamp drivers, motor drivers.

Features

- Adoption of MBIT process.
- High-speed switching.
- Large current capacitance.
- Low collector-to-emitter saturation voltage.

Package Dimensions

unit : mm
2041A



Specifications

() : 2SA2117

Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|------------------|----------------------|-------------|------|
| Collector-to-Base Voltage | V _{CB0} | | (-50)60 | V |
| Collector-to-Emitter Voltage | V _{CEO} | | (-)50 | V |
| Emitter-to-Base Voltage | V _{EBO} | | (-)6 | V |
| Collector Current | I _C | | (-)5 | A |
| Collector Current (Pulse) | I _{CP} | | (-)8 | A |
| Base Current | I _B | | (-)1 | A |
| Collector Dissipation | P _C | | 2 | W |
| | | T _c =25°C | 18 | W |
| Junction Temperature | T _J | | 150 | °C |
| Storage Temperature | T _{stg} | | -55 to +150 | °C |

Electrical Characteristics at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--------------------------|------------------|---|---------|----------|----------|------|
| | | | min | typ | max | |
| Collector Cutoff Current | I _{CB0} | V _{CB} =(-)40V, I _E =0 | | | (-)10 | μA |
| Emitter Cutoff Current | I _{EBO} | V _{EB} =(-)4V, I _C =0 | | | (-)10 | μA |
| DC Current Gain | h _{FE} | V _{CE} =(-)2V, I _C =(-)1A | 200 | | (560)700 | |
| Gain-Bandwidth Product | f _T | V _{CE} =(-)5V, I _C =(-)1A | | (130)200 | | MHz |

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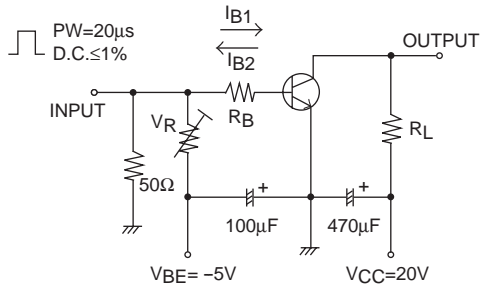
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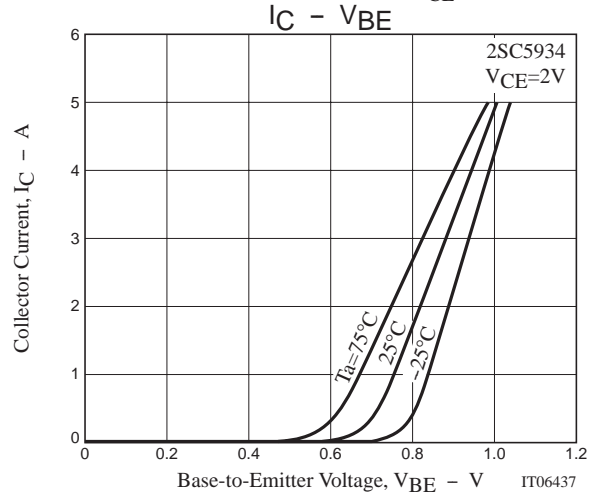
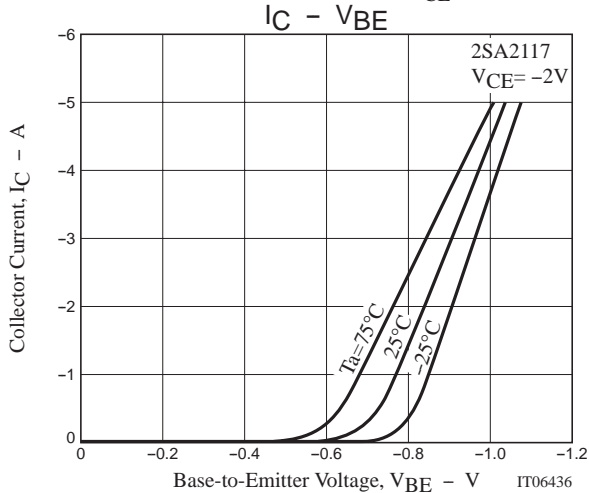
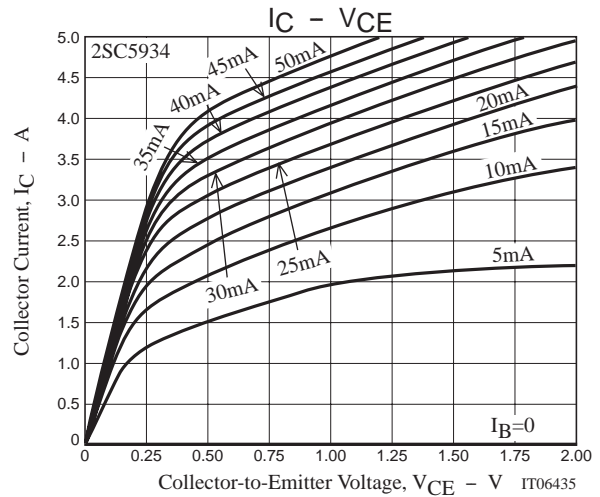
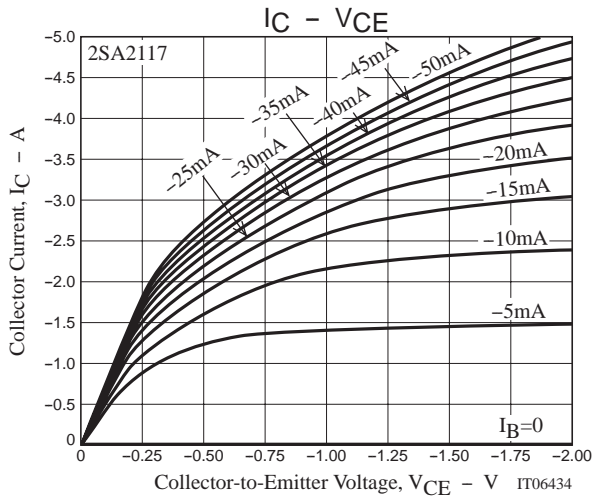
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| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|----------------------|---|---------|-----------|-----------|------|
| | | | min | typ | max | |
| Output Capacitance | Cob | V _{CB} =(-)10V, f=1MHz | | (55)35 | | pF |
| Collector-to-Emitter Saturation Voltage | V _{CE(sat)} | I _C =(-)2.5A, I _B =(-)125mA | | (-280)180 | (-560)360 | mV |
| Base-to-Emitter Saturation Voltage | V _{BE(sat)} | I _C =(-)2.5A, I _B =(-)125mA | | (-)0.93 | (-)1.4 | V |
| Collector-to-Base Breakdown Voltage | V _{(BR)CBO} | I _C =(-)100μA, I _E =0 | (-50)60 | | | V |
| Collector-to-Emitter Breakdown Voltage | V _{(BR)CEO} | I _C =(-)1mA, R _{BE} =∞ | (-)50 | | | V |
| Emitter-to-Base Breakdown Voltage | V _{(BR)EBO} | I _E =(-)100μA, I _C =0 | (-)6 | | | V |
| Turn-ON Time | t _{on} | See specified Test Circuit. | | 150 | | ns |
| Storage Time | t _{stg} | See specified Test Circuit. | | 1000 | | ns |
| Fall Time | t _f | See specified Test Circuit. | | 50 | | ns |

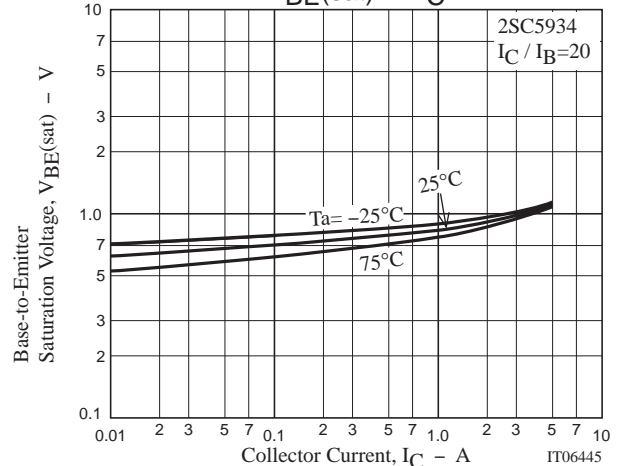
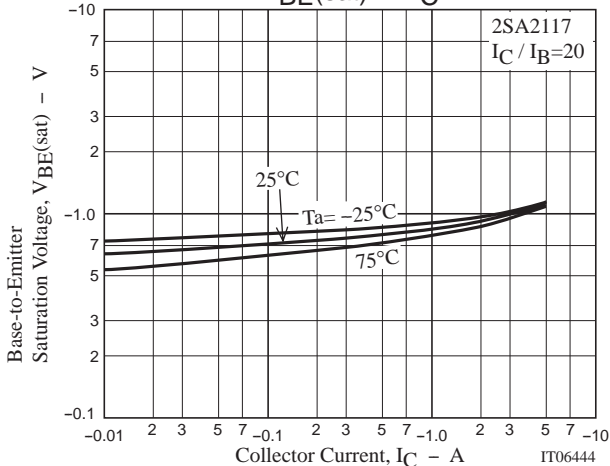
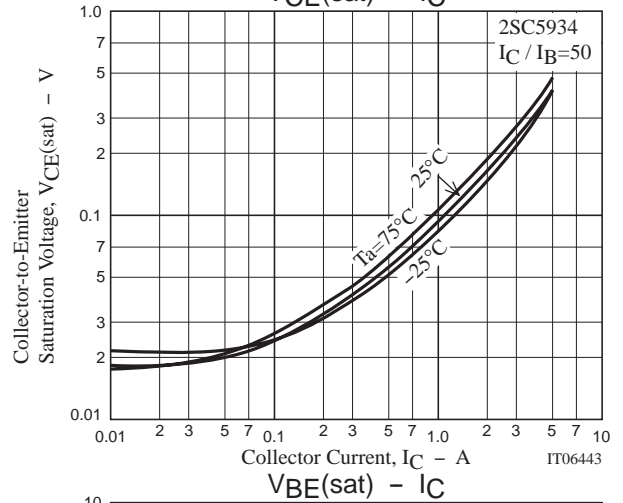
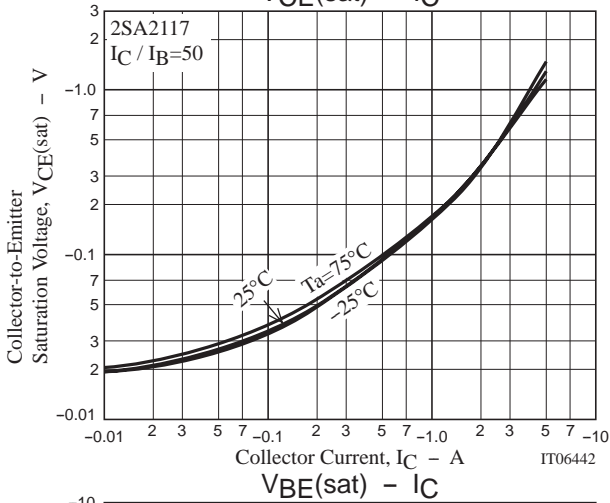
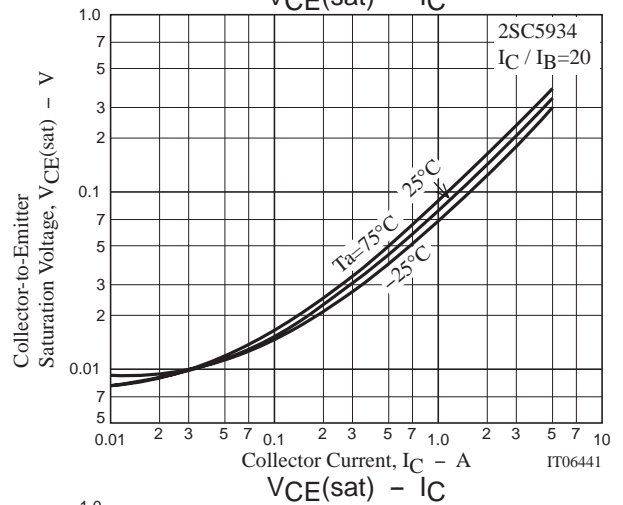
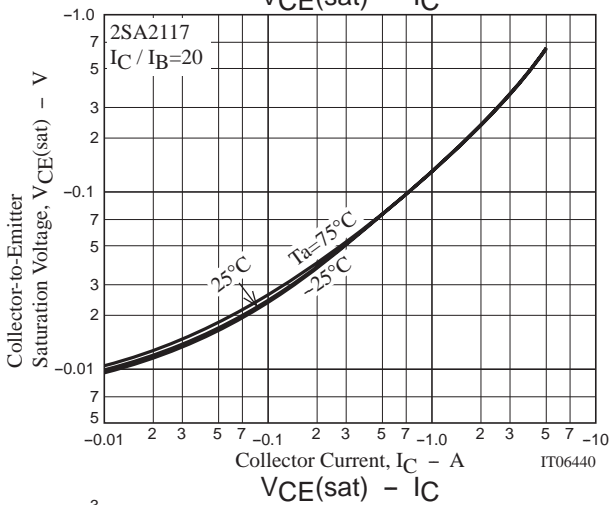
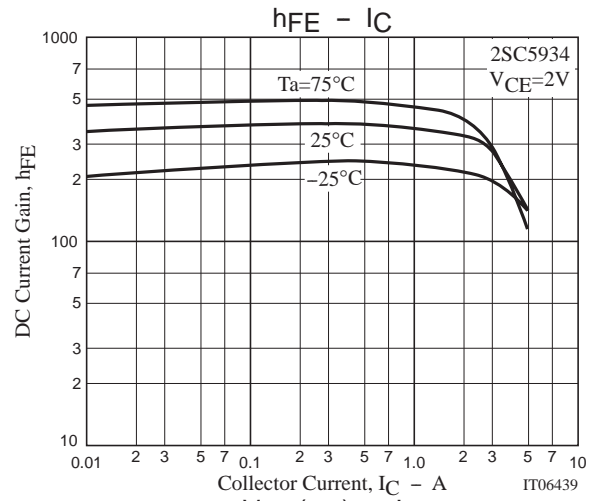
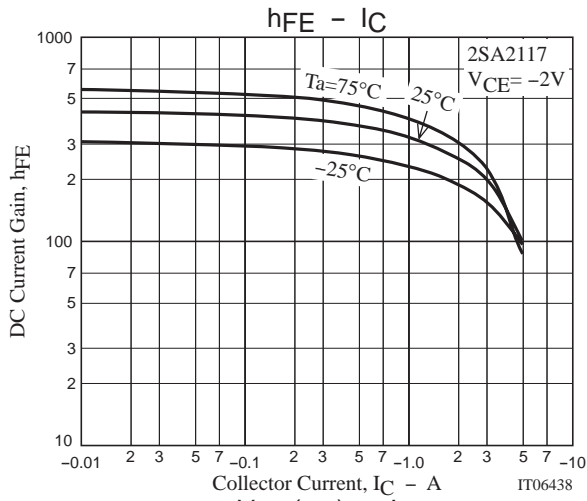
Switching Time Test Circuit



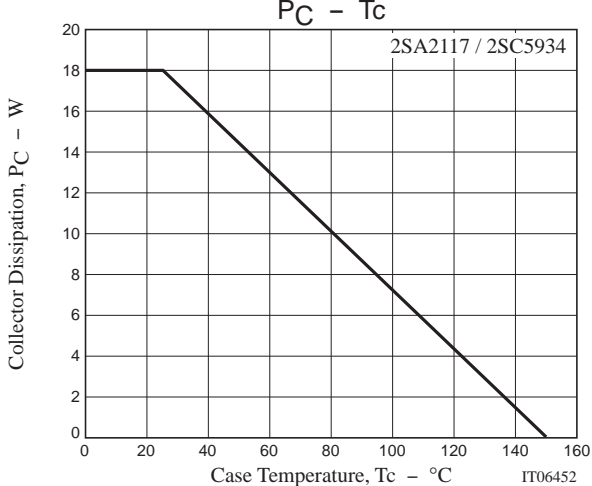
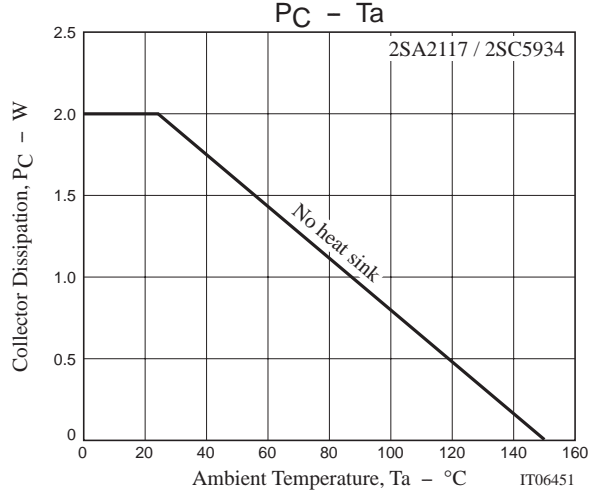
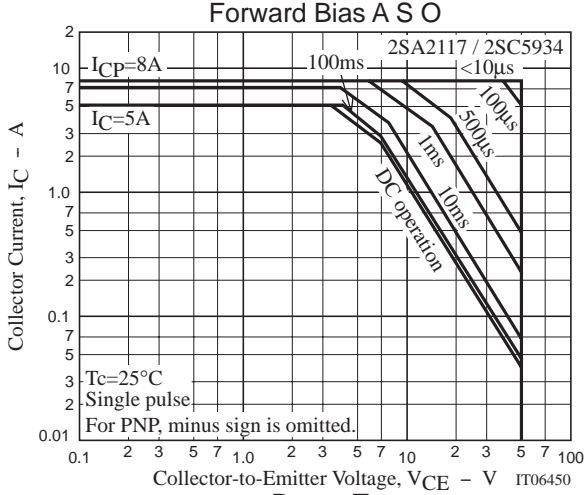
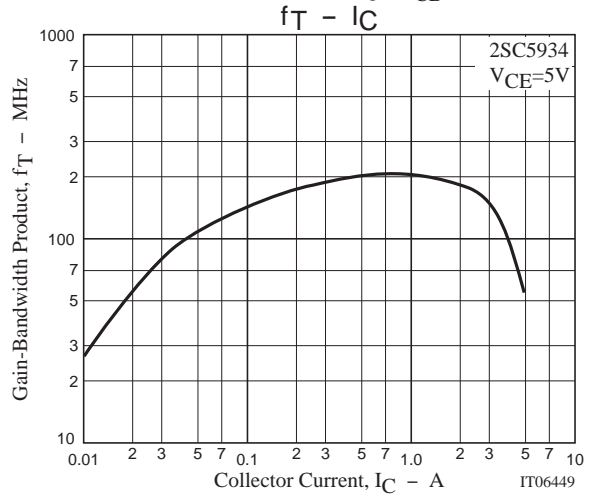
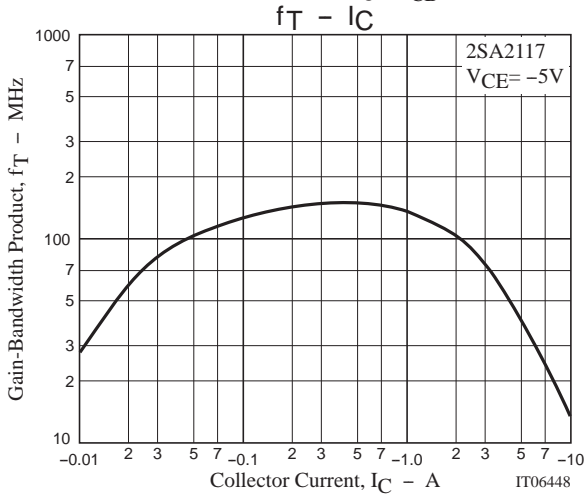
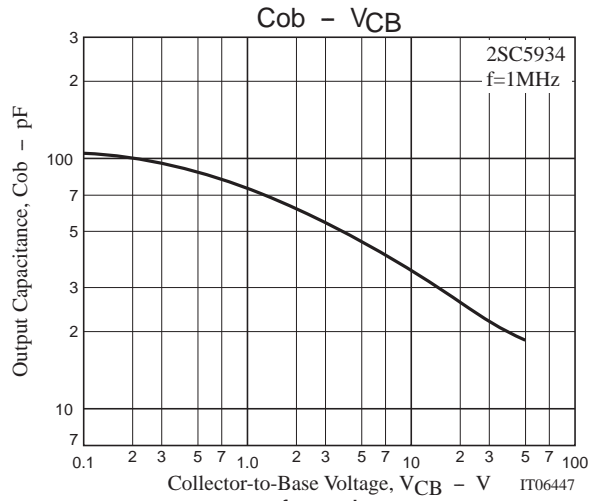
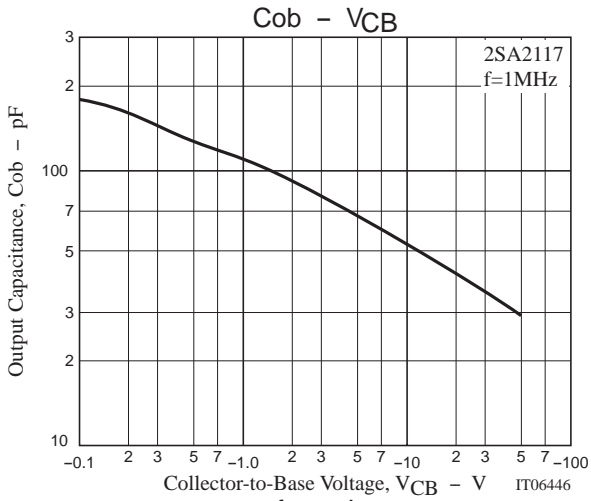
$I_C = 20I_{B1} = -20I_{B2} = 1A$
 (For PNP, minus sign is omitted.)



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