



CPH3107/3207

DC/DC Converter Applications

Applications

- Relay drivers, lamp drivers, motor drivers, and strobes.

Features

- Adoption of MBIT processes.
- High current capacitance.
- Low collector-to-emitter saturation voltage.
- High-speed switching.
- Ultrasmall-sized package permitting applied sets to be made small and slim (0.9mm).
- High allowable power dissipation.

() : PNP

Specifications

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

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|-----------|--|-------------|------|
| Collector-to-Base Voltage | V_{CB0} | | (-)15 | V |
| Collector-to-Emitter Voltage | V_{CEO} | | (-)15 | V |
| Emitter-to-Base Voltage | V_{EBO} | | (-)5 | V |
| Collector Current | I_C | | (-)6 | A |
| Collector Current (Pulse) | I_{CP} | | (-)9 | A |
| Base Current | I_B | | (-)1.2 | A |
| Collector Dissipation | P_C | Mounted on a ceramic board (600mm ² ×0.8mm) | 0.9 | W |
| Junction Temperature | T_J | | 150 | °C |
| Storage Temperature | T_{stg} | | -55 to +150 | °C |

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

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--------------------------|-----------|--|---------|--------|--------|---------------|
| | | | min | typ | max | |
| Collector Cutoff Current | I_{CB0} | $V_{CB}=(-)12\text{V}, I_E=0$ | | | (-)0.1 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB}=(-)4\text{V}, I_C=0$ | | | (-)0.1 | μA |
| DC Current Gain | h_{FE} | $V_{CE}=(-)2\text{V}, I_C=(-)500\text{mA}$ | 200 | | 560 | |
| Gain-Bandwidth Product | f_T | $V_{CE}=(-)2\text{V}, I_C=(-)500\text{mA}$ | | (140) | | MHz |
| | | | | 250 | | MHz |
| Output Capacitance | C_{ob} | $V_{CB}=(-)10\text{V}, f=1\text{MHz}$ | | (82)46 | | pF |

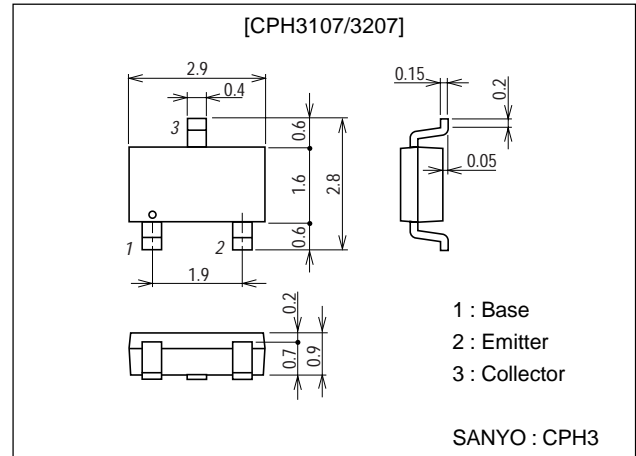
Marking : CPH3107 : AG, CPH3207 : CG

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Package Dimensions

unit:mm

2150A



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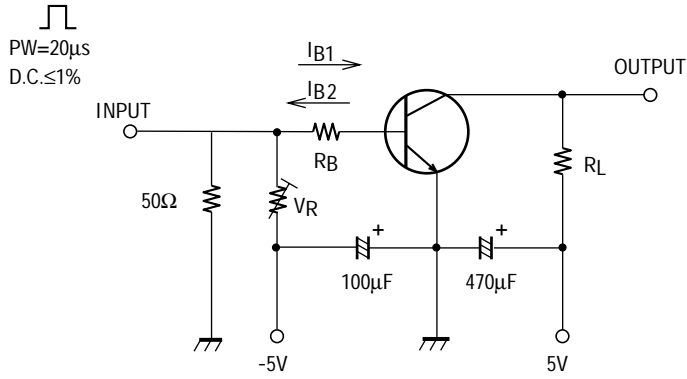
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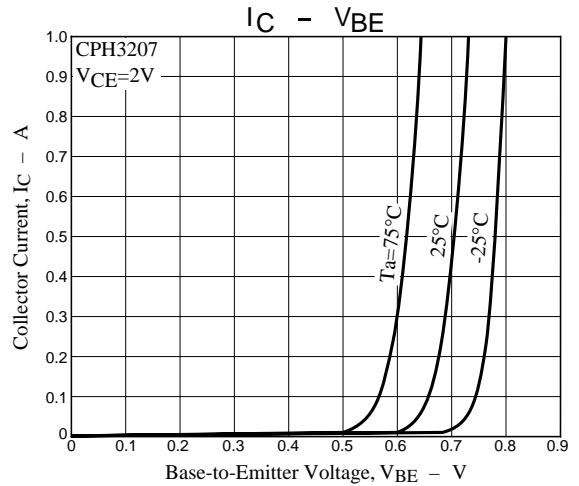
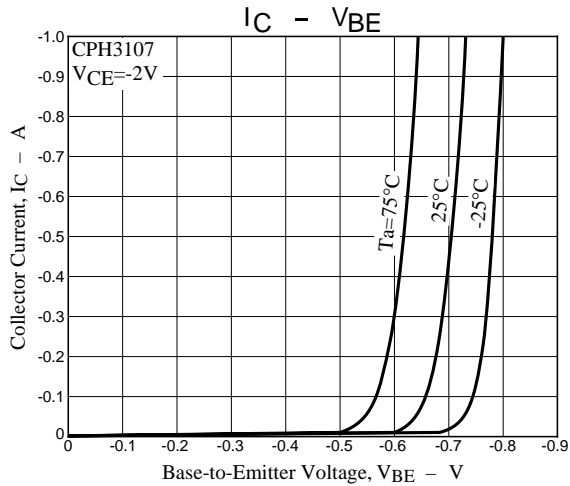
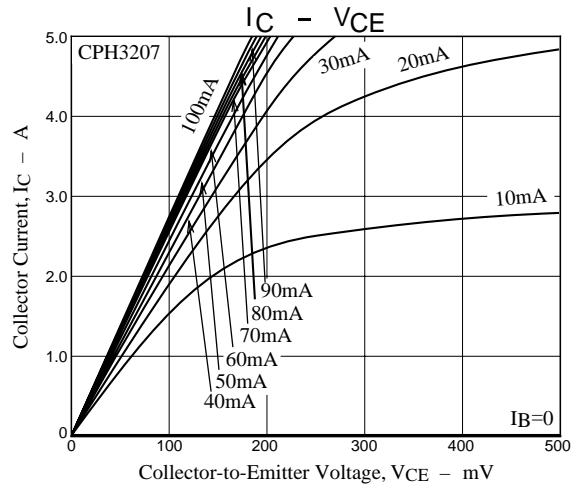
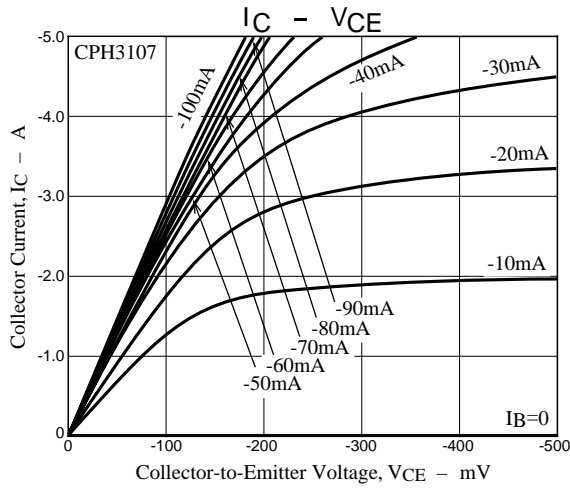
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| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---------------|-----------------------------|---------|---------|--------|------|
| | | | min | typ | max | |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=(-)3A, I_B=(-)60mA$ | | (-)100 | (-)150 | mV |
| Base-to-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C=(-)3A, I_B=(-)60mA$ | | (-)0.85 | (-)1.2 | V |
| Collector-to-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C=(-)10\mu A, I_E=0$ | (-)15 | | | V |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C=(-)1mA, R_{BE}=\infty$ | (-)15 | | | V |
| Emitter-to-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_C=(-)10\mu A, I_C=0$ | (-)5 | | | V |
| Turn-ON Time | t_{on} | See specified test circuit. | | (30)32 | | ns |
| Storage Time | t_{stg} | See specified test circuit. | | (120) | | ns |
| | | | | 250 | | ns |
| Turn-OFF Time | t_f | See specified test circuit. | (14)10 | | | ns |

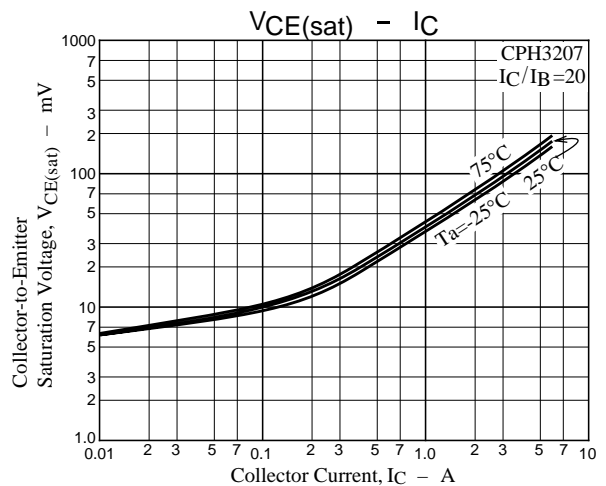
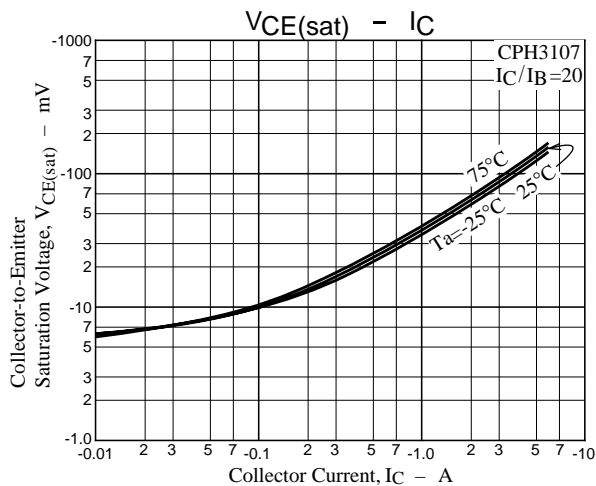
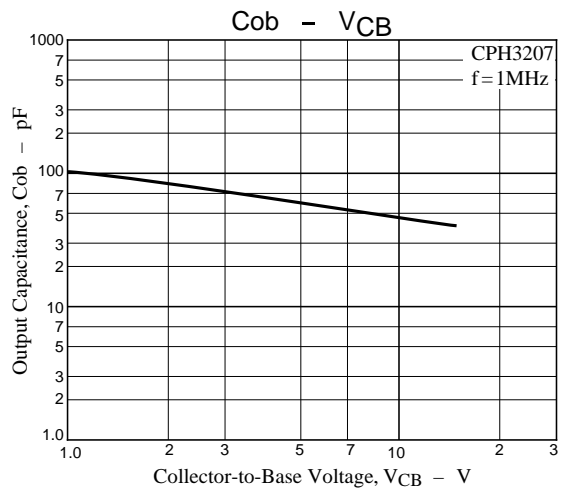
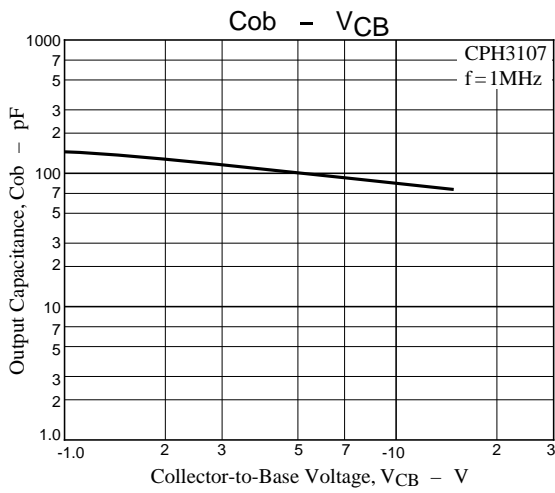
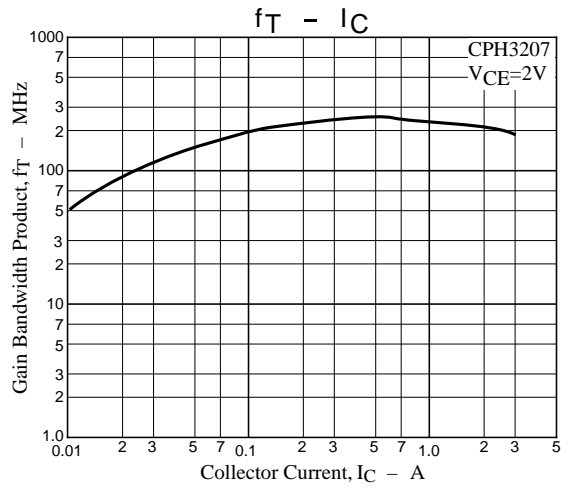
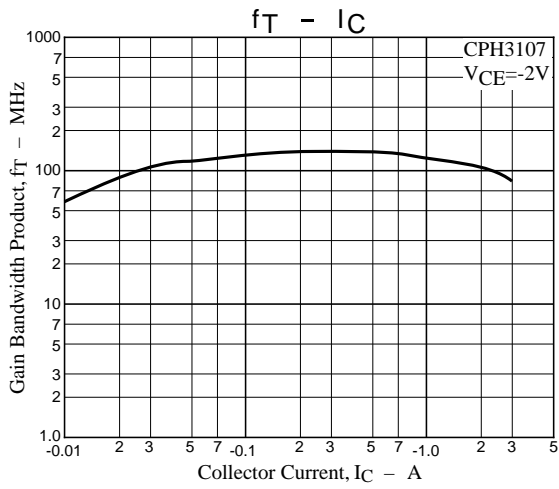
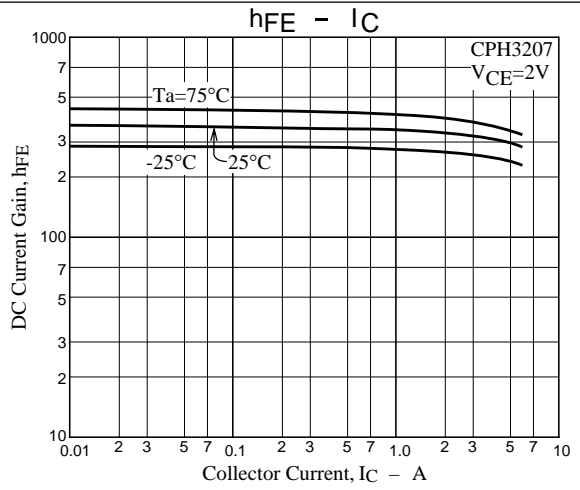
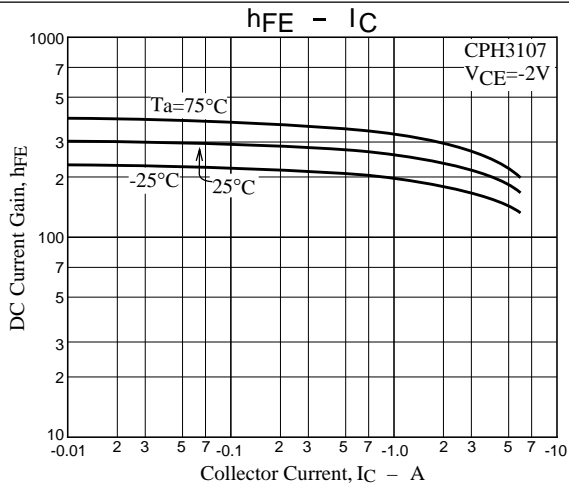
Switching Time Test Circuit



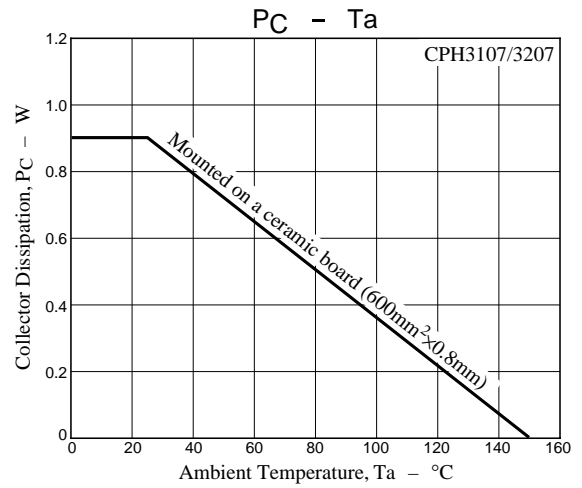
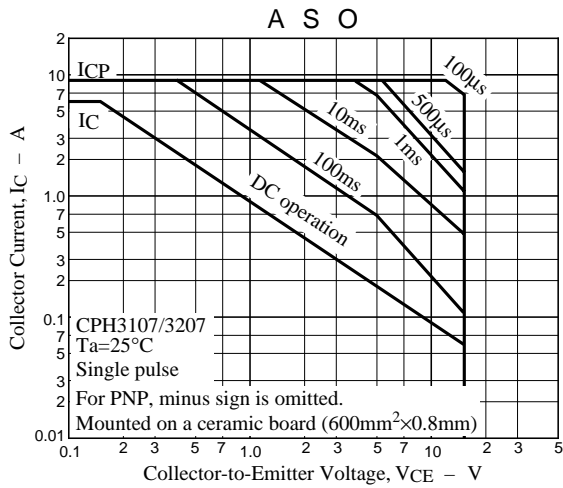
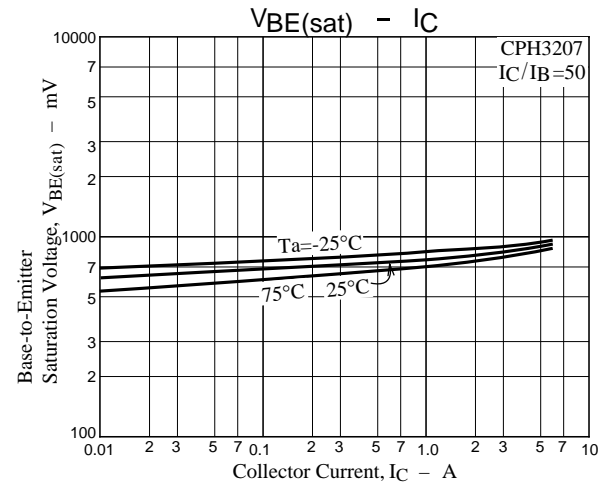
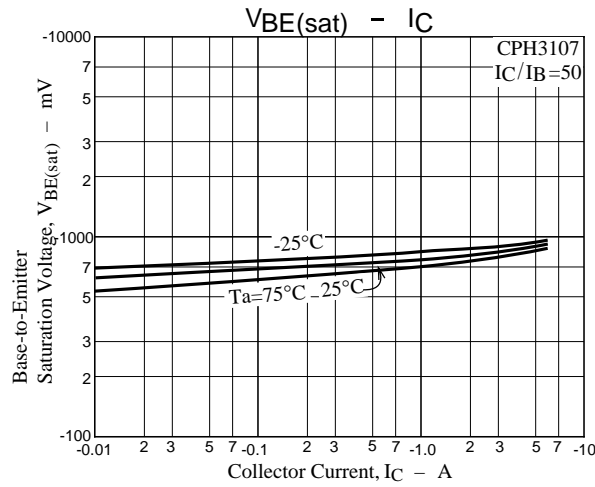
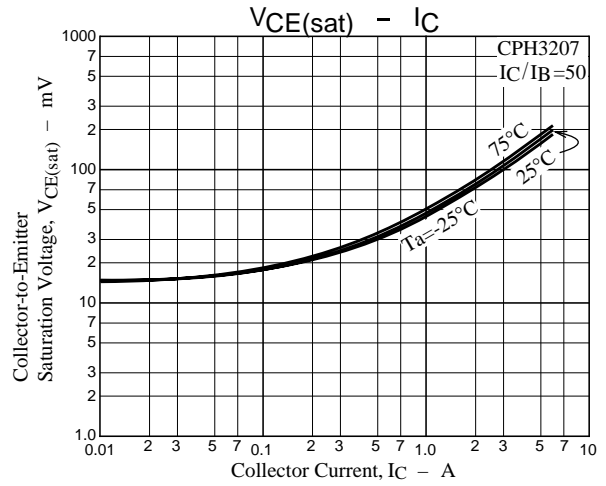
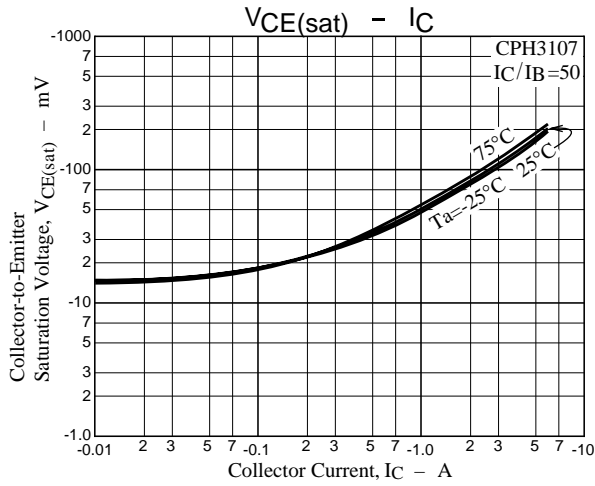
$20I_{B1} = -20I_{B2} = I_C = 3A$
(For PNP, the polarity is reversed.)



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