

Ordering number:EN6004

PNP/NPN Silicon Epitaxial Planar Transistors



CPH3104/3204

DC/DC Converter Applications

Applications

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

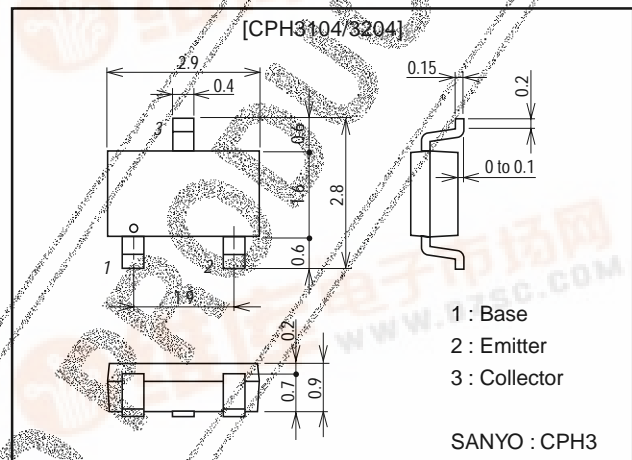
Features

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

Package Dimensions

unit:mm

2150



() : CPH3104

Specifications

Absolute Maximum Ratings at Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|-----------|--|-------------|------|
| Collector-to-Base Voltage | V_{CBO} | | (-15) | V |
| Collector-to-Emitter Voltage | V_{CEO} | | (-15) | V |
| Emitter-to-Base Voltage | V_{EBO} | | (-5) | V |
| Collector Current | I_C | | (-1.5) | A |
| Collector Current (Pulse) | I_{CP} | | (-3) | A |
| Base Current | I_B | | (-200) | mA |
| 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 Ta = 25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--------------------------|-----------|------------------------------|---------|-------|--------|------|
| | | | min | typ | max | |
| Collector Cutoff Current | I_{CBO} | $V_{CB}=(-12V, I_E=0)$ | | | (-100) | nA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB}=(-4V, I_C=0)$ | | | (-100) | nA |
| DC Current Gain | h_{FE1} | $V_{CE}=(-2V, I_C=(-)50mA)$ | 200 | | 560 | |
| | h_{FE2} | $V_{CE}=(-2V, I_C=(-)800mA)$ | 80 | | | |
| Gain-Bandwidth Product | f_T | $V_{CE}=(-2V, I_C=(-)50mA)$ | | (300) | | MHz |
| | | | | 200 | | MHz |
| Output Capacitance | C_{ob} | $V_{CB}=(-10V, f=1MHz)$ | (15) | 10 | | pF |

Marking : CPH3104 : AD, CPH3204 : CD

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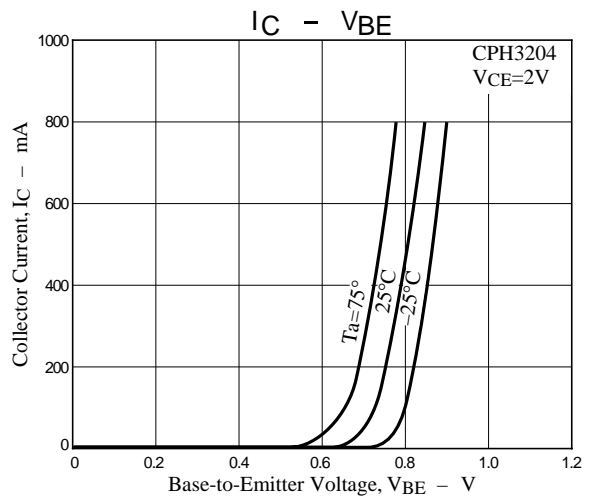
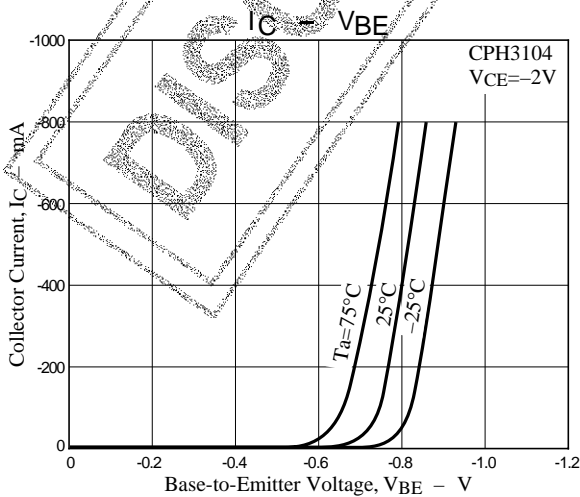
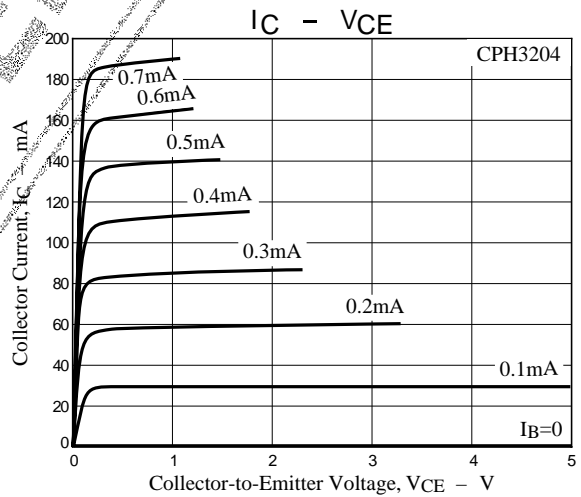
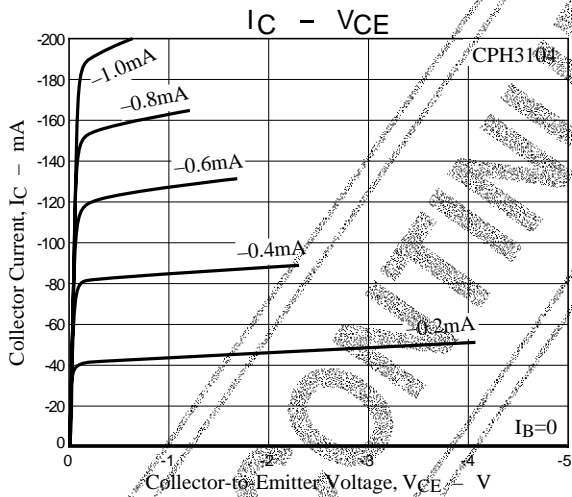
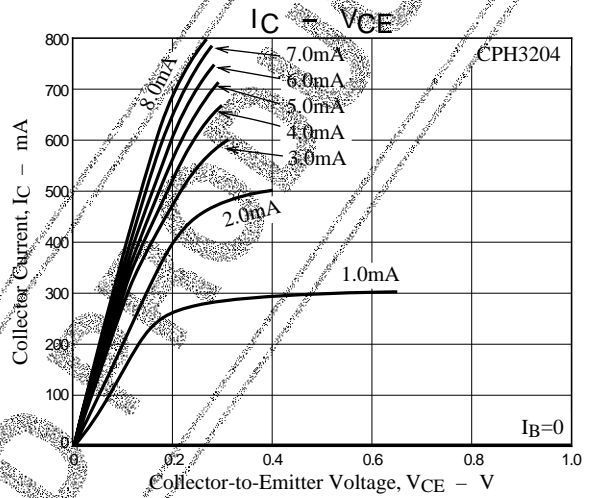
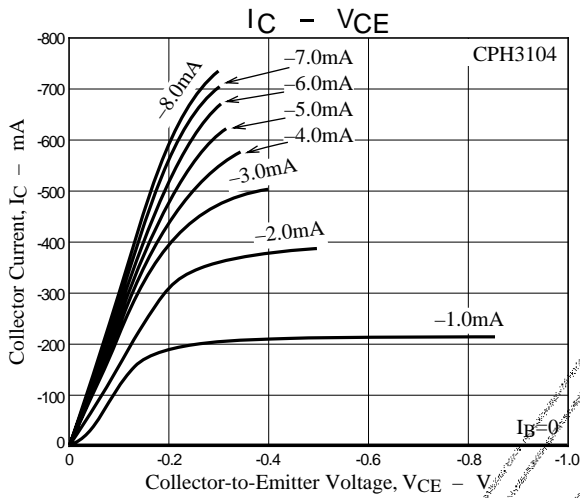
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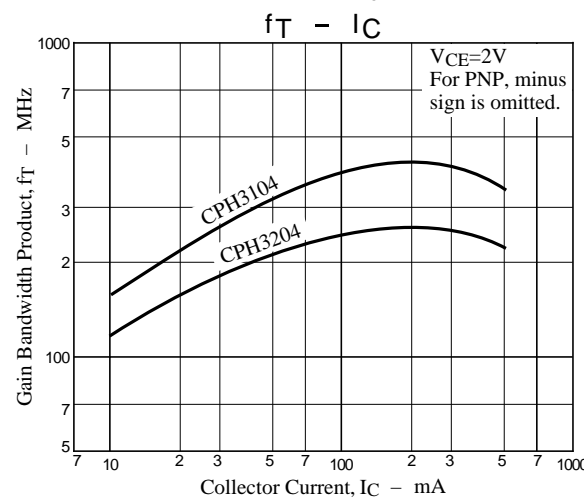
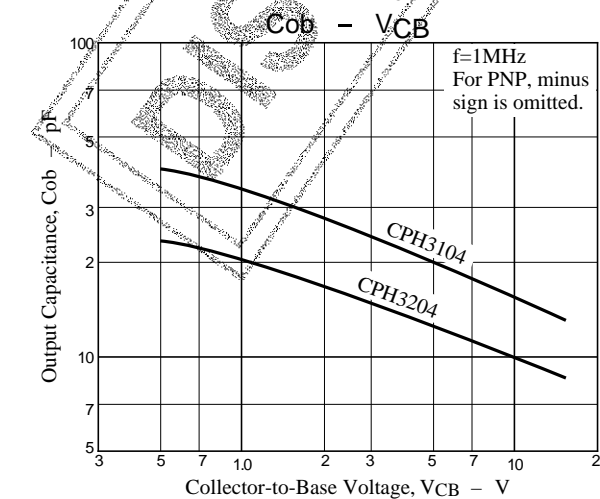
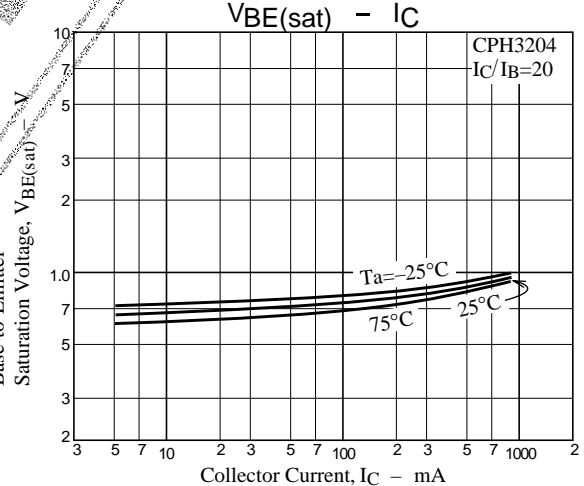
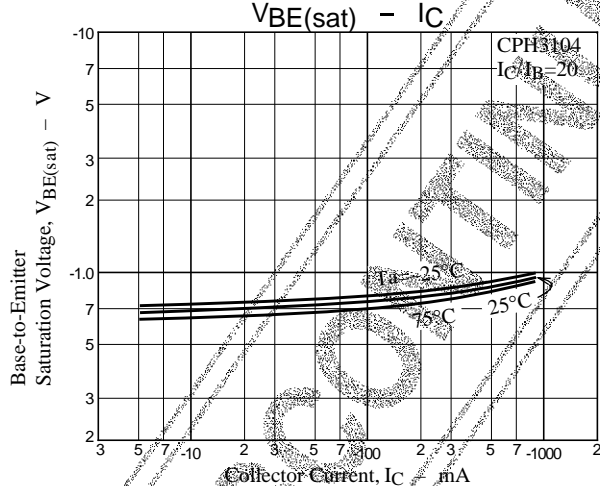
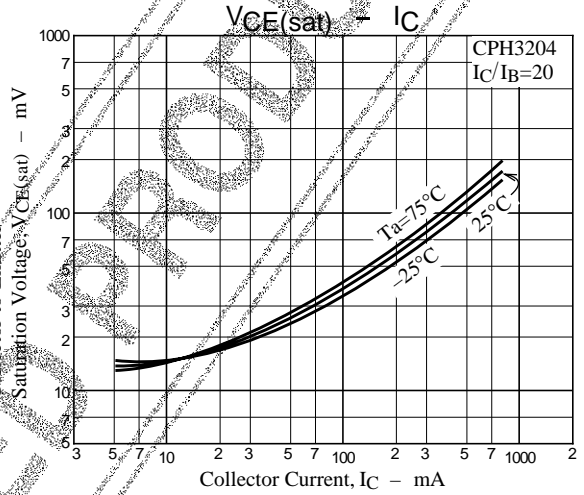
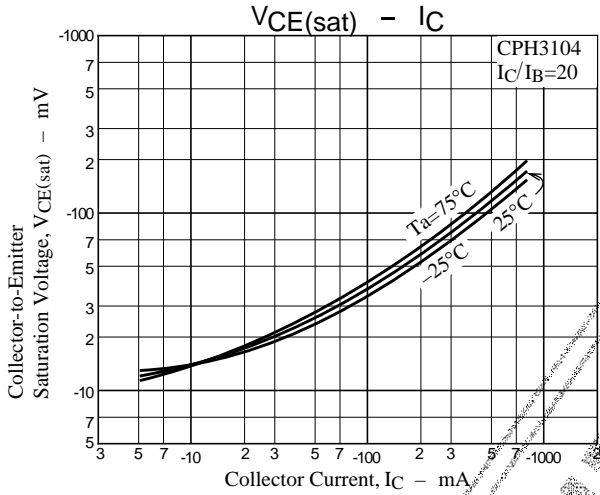
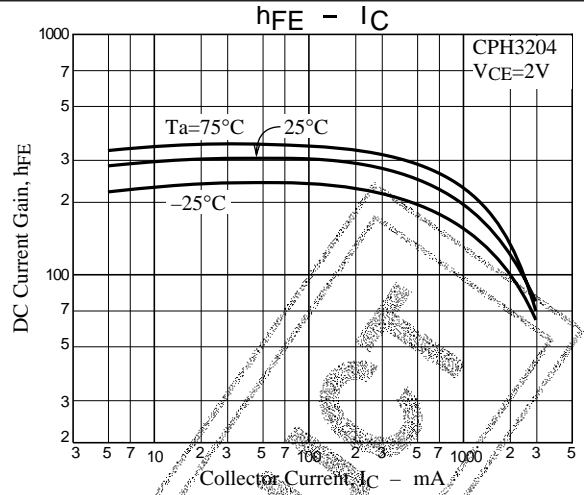
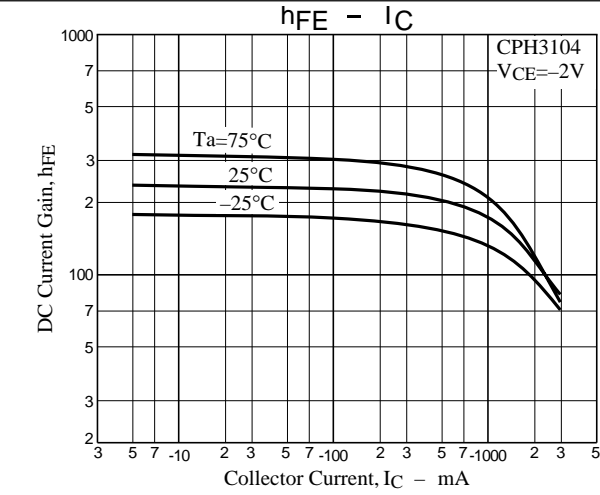
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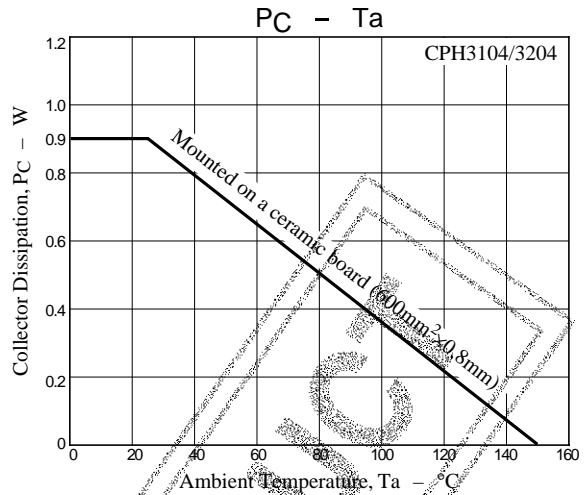
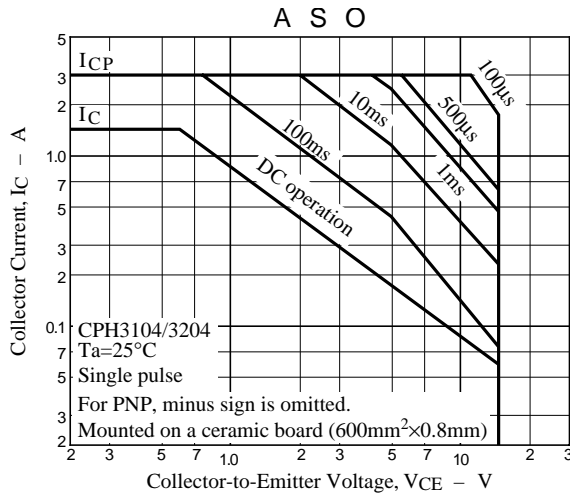
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|----------------|--------------------------------|---------|--------|--------|------|
| | | | min | typ | max | |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)1}$ | $I_C=(-)5mA, I_B=(-)0.5mA$ | | (-)10 | (-)25 | mV |
| | $V_{CE(sat)2}$ | $I_C=(-)500mA, I_B=(-)25mA$ | | (-)120 | (-)240 | mV |
| Base-to-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C=(-)500\mu A, I_E=(-)25mA$ | | (-)0.9 | (-)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 |



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