



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

PCP1201 — NPN Epitaxial Planar Silicon Transistor

High-Voltage Switching Applications

Applications

- DC / DC converter, relay drivers, lamp drivers, motor drivers, inverter.

Features

- Adoption of FBET, MBIT process.
- High current capacitance.
- Low collector-to-emitter saturation voltage.
- High-speed switching.
- High allowable power dissipation.

Specifications

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

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|-----------|---|-------------|------------------|
| Collector-to-Base Voltage | V_{CB0} | | 150 | V |
| Collector-to-Emitter Voltage | V_{CES} | | 150 | V |
| Collector-to-Emitter Voltage | V_{CEO} | | 120 | V |
| Emitter-to-Base Voltage | V_{EBO} | | 7 | V |
| Collector Current | I_C | | 2.5 | A |
| Collector Current (Pulse) | I_{CP} | | 4 | A |
| Base Current | I_B | | 500 | mA |
| Collector Dissipation | P_C | When mounted on ceramic substrate (450mm ² X0.8mm) | 1.3 | W |
| | | $T_c=25^\circ\text{C}$ | 3.5 | W |
| Junction Temperature | T_J | | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | | -55 to +150 | $^\circ\text{C}$ |

Marking : QH

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PCP1201

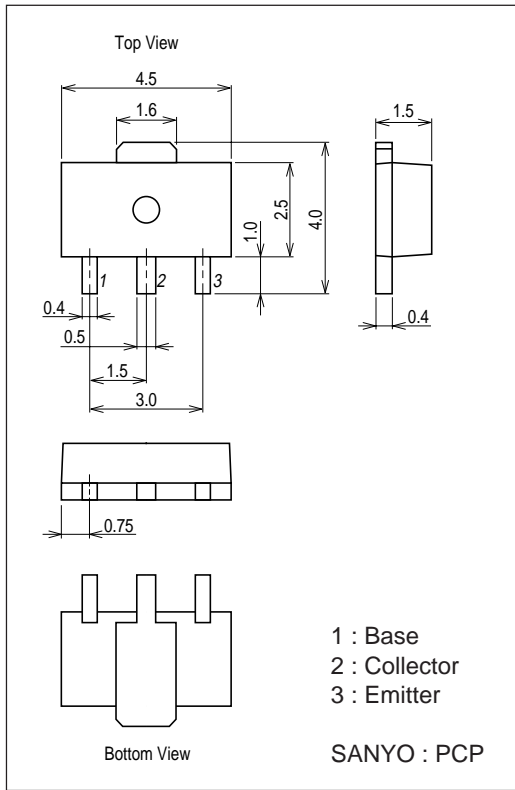
Electrical Characteristics at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---------------|--------------------------------|---------|------|-----|---------|
| | | | min | typ | max | |
| Collector Cutoff Current | I_{CBO} | $V_{CB}=100V, I_E=0A$ | | | 1 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB}=5V, I_C=0A$ | | | 1 | μA |
| DC Current Gain | h_{FE} | $V_{CE}=5V, I_C=100mA$ | 200 | | 560 | |
| Gain-Bandwidth Product | f_T | $V_{CE}=10V, I_C=100mA$ | | 130 | | MHz |
| Output Capacitance | C_{ob} | $V_{CB}=10V, f=1MHz$ | | 13 | | pF |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=1A, I_B=100mA$ | | 100 | 150 | mV |
| Base-to-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C=1A, I_B=100mA$ | | 0.85 | 1.2 | V |
| Collector-to-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C=10\mu A, I_E=0A$ | 150 | | | V |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CES}$ | $I_C=100\mu A, R_{BE}=0\Omega$ | 150 | | | V |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C=1mA, R_{BE}=\infty$ | 120 | | | V |
| Emitter-to-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E=10\mu A, I_C=0A$ | 7 | | | V |
| Turn-ON Time | t_{on} | See specified Test Circuit. | | 50 | | ns |
| Storage Time | t_{stg} | See specified Test Circuit. | | 1250 | | ns |
| Fall Time | t_f | See specified Test Circuit. | | 60 | | ns |

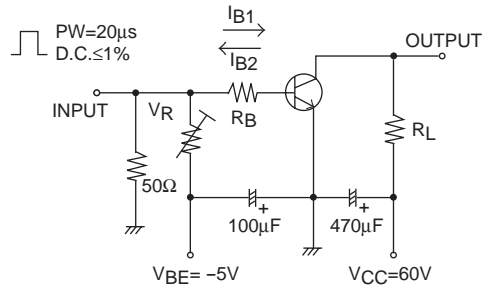
Package Dimensions

unit : mm (typ)

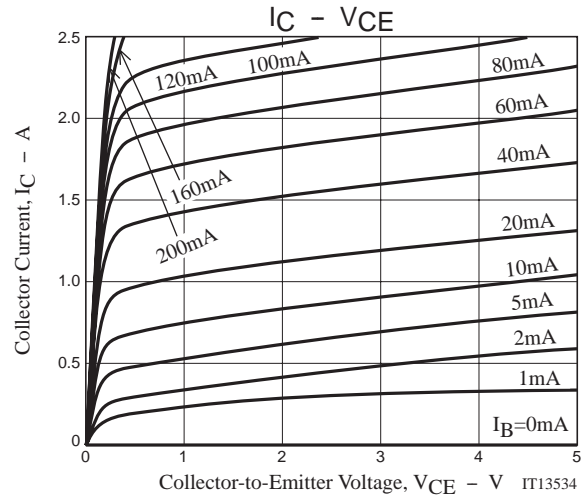
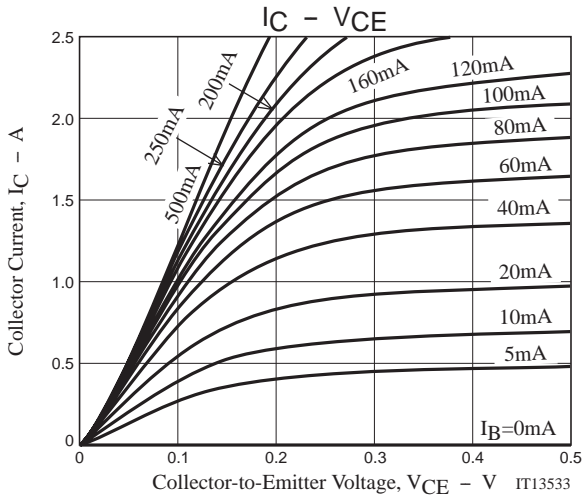
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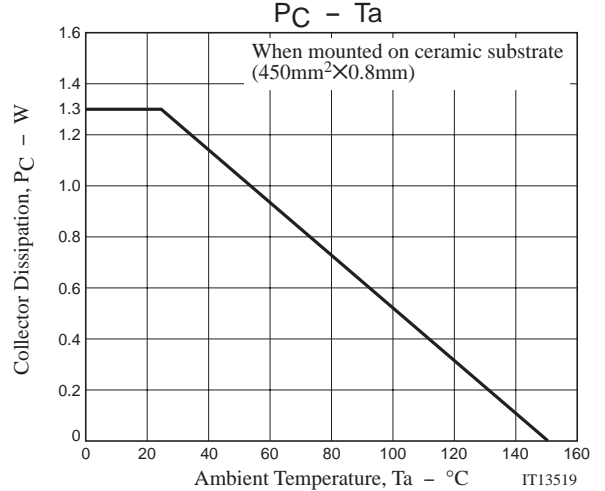
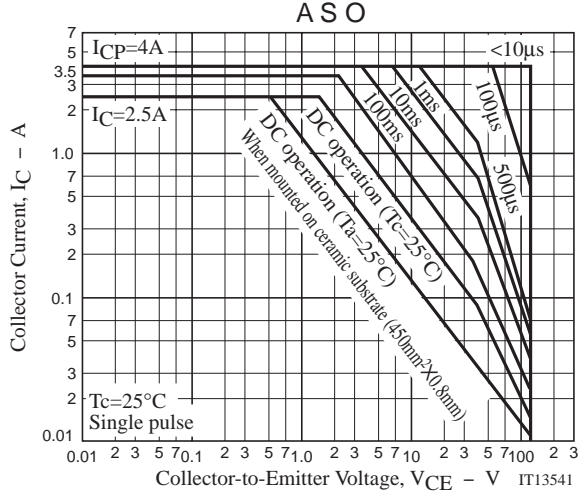
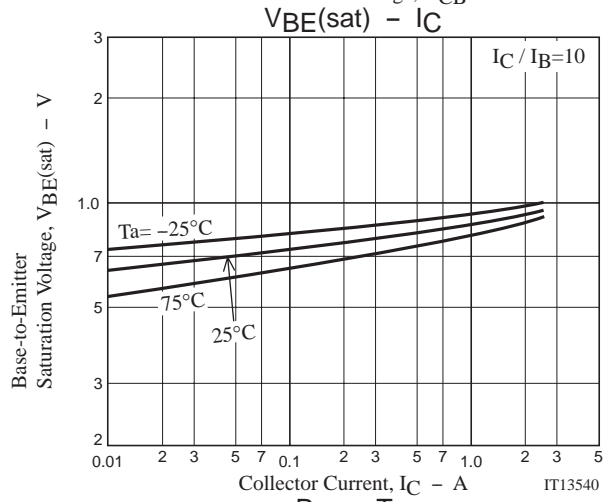
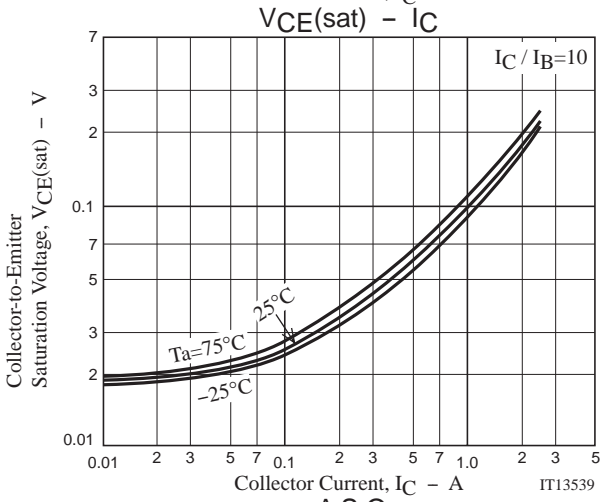
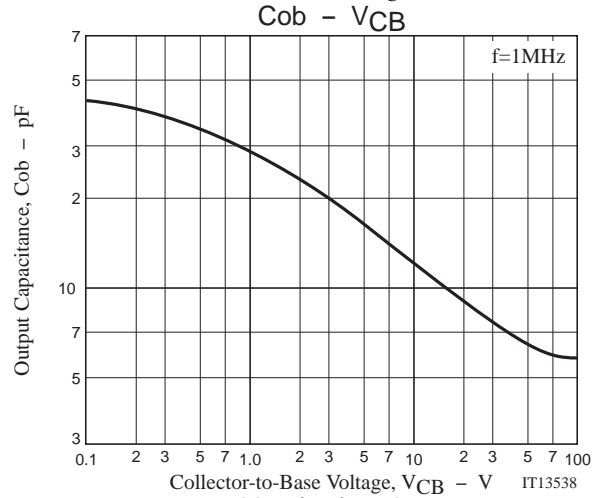
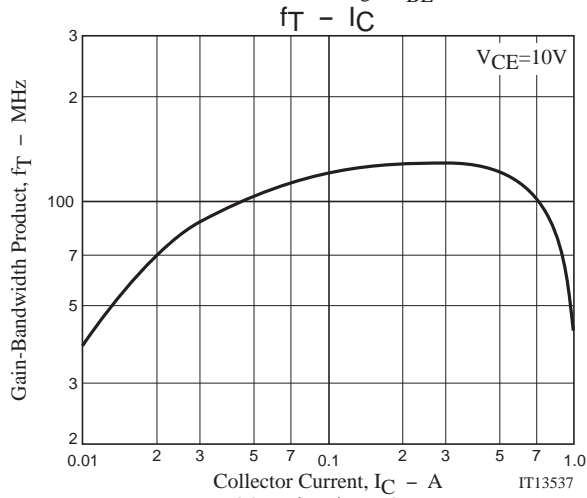
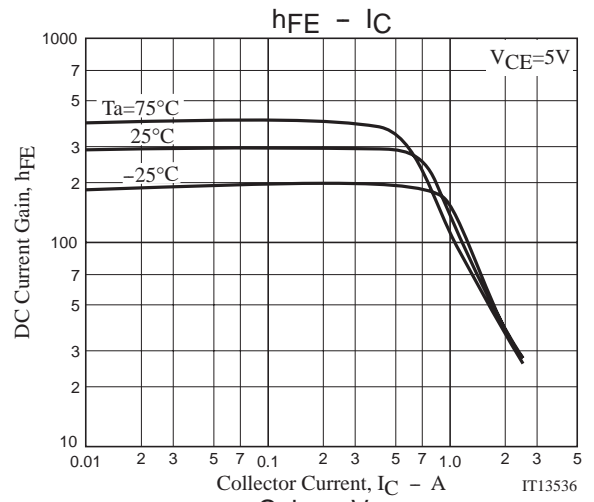
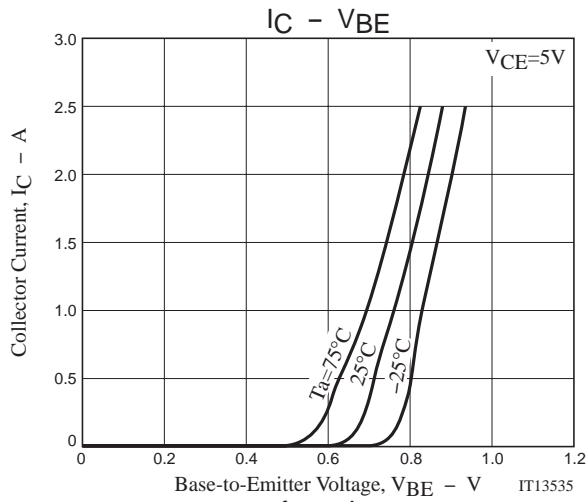


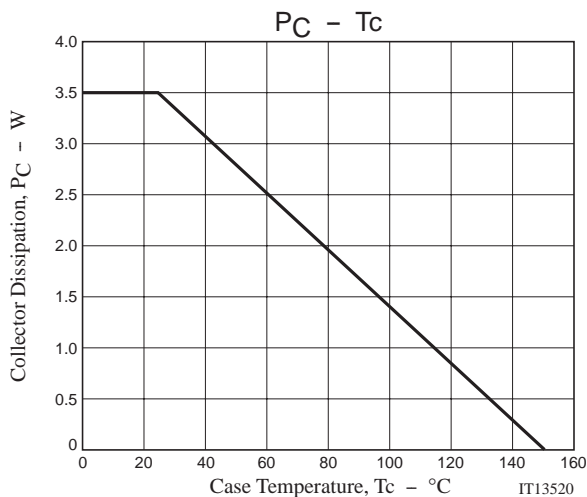
Switching Time Test Circuit



$$I_C=10I_{B1}=-10I_{B2}=0.5A$$







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