



SANYO Semiconductors

# DATA SHEET

An ON Semiconductor Company

## PCP1103 — PNP Epitaxial Planar Silicon Transistor DC / DC Converter Applications

### Applications

- DC / DC converters, relay drivers, lamp drivers, motor drivers, IGBT gate drivers.

### Features

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

### Specifications

#### Absolute Maximum Ratings at Ta=25°C

| Parameter                    | Symbol           | Conditions                                                    | Ratings     | Unit |
|------------------------------|------------------|---------------------------------------------------------------|-------------|------|
| Collector-to-Base Voltage    | V <sub>CBO</sub> |                                                               | -30         | V    |
| Collector-to-Emitter Voltage | V <sub>CEO</sub> |                                                               | -30         | V    |
| Emitter-to-Base Voltage      | V <sub>EBO</sub> |                                                               | -5          | V    |
| Collector Current            | I <sub>C</sub>   |                                                               | -1.5        | A    |
| Collector Current (Pulse)    | I <sub>CP</sub>  |                                                               | -5          | A    |
| Base Current                 | I <sub>B</sub>   |                                                               | -300        | mA   |
| Collector Dissipation        | P <sub>C</sub>   | When mounted on ceramic substrate (450mm <sup>2</sup> ×0.8mm) | 1.3         | W    |
|                              |                  | T <sub>C</sub> =25°C                                          | 3.5         | W    |
| Junction Temperature         | T <sub>J</sub>   |                                                               | 150         | °C   |
| Storage Temperature          | T <sub>stg</sub> |                                                               | -55 to +150 | °C   |

Marking : RF

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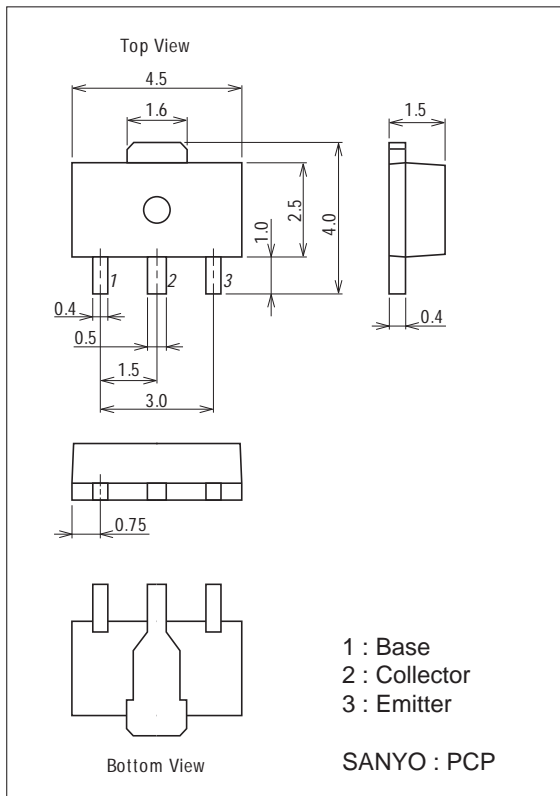
Electrical Characteristics at Ta=25°C

| Parameter                               | Symbol               | Conditions                                      | Ratings |       |      | Unit |
|-----------------------------------------|----------------------|-------------------------------------------------|---------|-------|------|------|
|                                         |                      |                                                 | min     | typ   | max  |      |
| Collector Cutoff Current                | ICBO                 | V <sub>CB</sub> = -30V, I <sub>E</sub> = 0A     |         |       | -0.1 | μA   |
| Emitter Cutoff Current                  | IEBO                 | V <sub>EB</sub> = -4V, I <sub>C</sub> = 0A      |         |       | -0.1 | μA   |
| DC Current Gain                         | h <sub>FE</sub>      | V <sub>CE</sub> = -2V, I <sub>C</sub> = -100mA  | 200     |       | 560  |      |
| Gain-Bandwidth Product                  | f <sub>T</sub>       | V <sub>CE</sub> = -10V, I <sub>C</sub> = -300mA |         | 450   |      | MHz  |
| Output Capacitance                      | C <sub>ob</sub>      | V <sub>CB</sub> = -10V, f = 1MHz                |         | 9     |      | pF   |
| Collector-to-Emitter Saturation Voltage | V <sub>CE(sat)</sub> | I <sub>C</sub> = -0.75A, I <sub>B</sub> = -15mA |         | -250  | -375 | mV   |
| Base-to-Emitter Saturation Voltage      | V <sub>BE(sat)</sub> | I <sub>C</sub> = -0.75A, I <sub>B</sub> = -15mA |         | -0.85 | -1.2 | V    |
| Collector-to-Base Breakdown Voltage     | V <sub>(BR)CBO</sub> | I <sub>C</sub> = -10μA, I <sub>E</sub> = 0A     | -30     |       |      | V    |
| Collector-to-Emitter Breakdown Voltage  | V <sub>(BR)CEO</sub> | I <sub>C</sub> = -1mA, R <sub>BE</sub> = ∞      | -30     |       |      | V    |
| Emitter-to-Base Breakdown Voltage       | V <sub>(BR)EBO</sub> | I <sub>E</sub> = -10μA, I <sub>C</sub> = 0A     | -5      |       |      | V    |
| Turn-On Time                            | t <sub>on</sub>      | See specified Test Circuit.                     |         | 35    |      | ns   |
| Storage Time                            | t <sub>stg</sub>     | See specified Test Circuit.                     |         | 115   |      | ns   |
| Fall Time                               | t <sub>f</sub>       | See specified Test Circuit.                     |         | 30    |      | ns   |

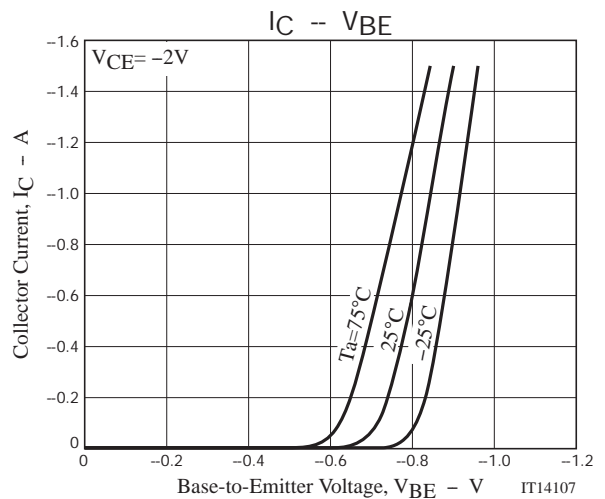
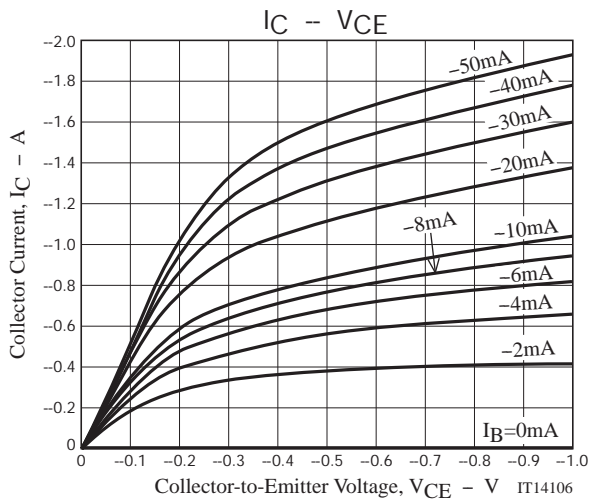
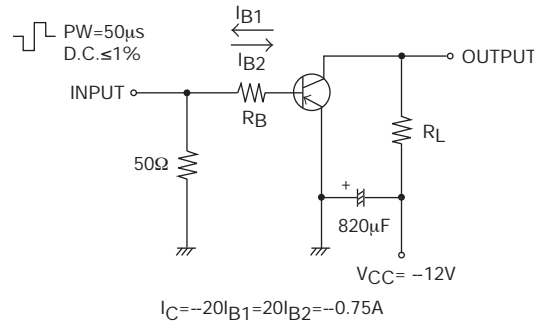
Package Dimensions

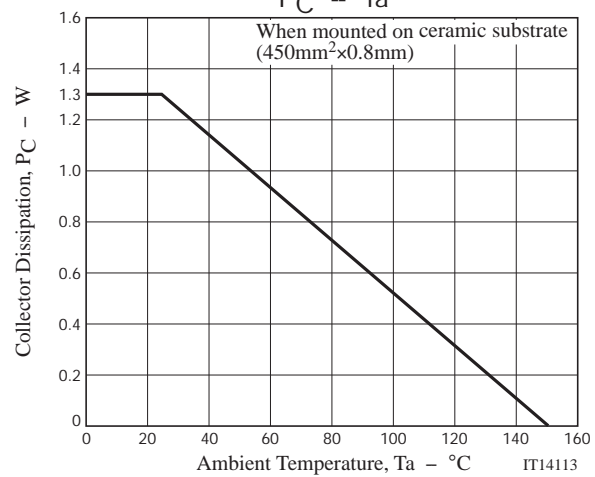
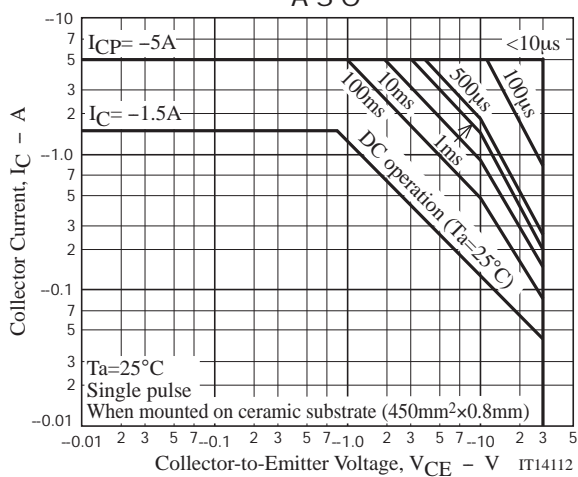
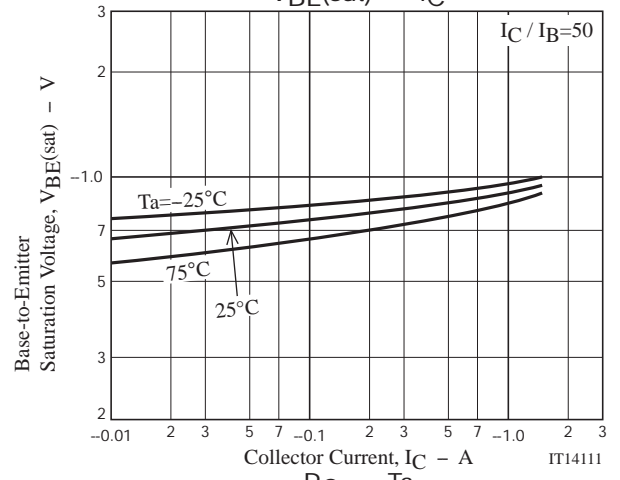
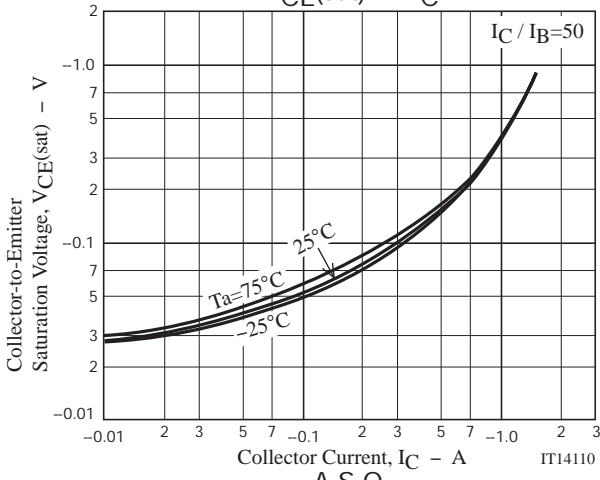
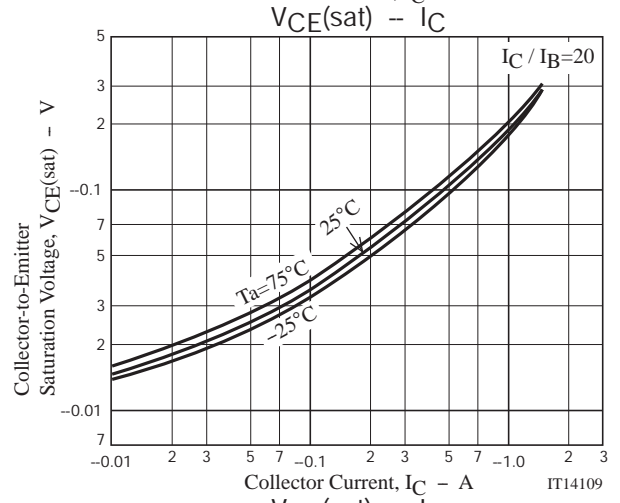
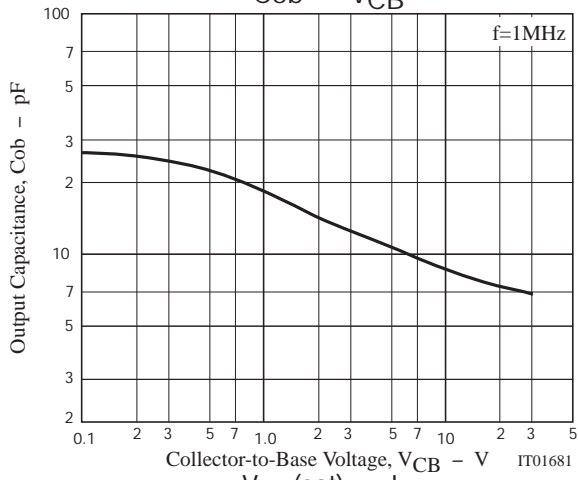
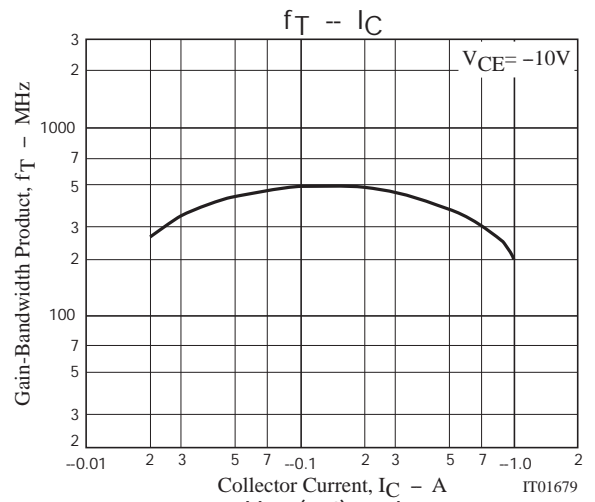
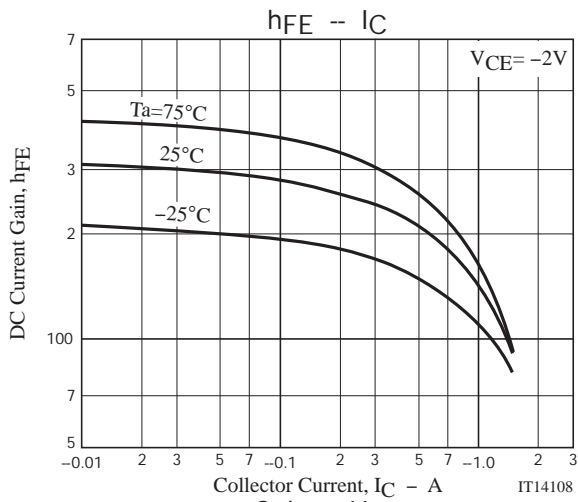
unit : mm (typ)

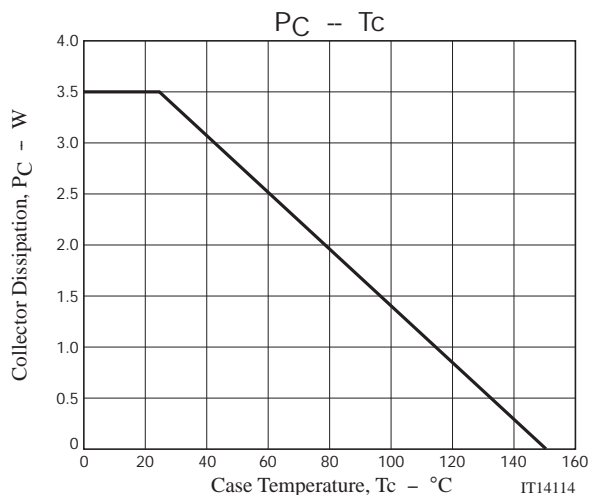
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Switching Time Test Circuit







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