Ordering number:EN4697

# FP201

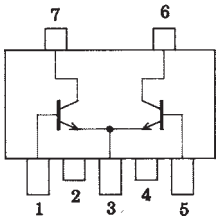
NPN Epitaxial Planar Silicon Composite Transistors

## High-Frequency Amp, Differential Amp Applications

## Features

- Composite type with 2 transistors contained in the PCP package currently in use, improving the mounting efficiency greatly.
- The FP201 is formed with two chips, being equivalent to the 2SC4504, placed in one package.
- Excellent in thermal equilibrium and pair capability.

### Electrical Connection



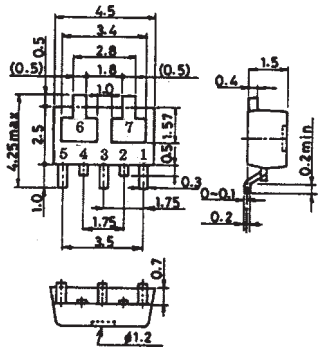

1:Base (NPN TR)
2:Collector (NPN TR)
3:Emitter Common
4:Collector (NPN TR)
5:Base (NPN TR)
6:Collector (NPN TR)
7:Collector (NPN TR)
(Top view)

## Package Dimensions

unit:mm

2107A

[FP201]




1:Base (NPN TR)
2:Collector (NPN TR)
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6:Collector (NPN TR)
7:Collector (NPN TR)

SANYO:PCP5
(Bottom view)

## Specifications

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

| Parameter | Symbol | Conditions | Ratings | Unit |
|---|---|---|---|---|
| Collector-to-Base Voltage | $V_{CBO}$ | | 30 | V |
| Collector-to-Emitter Voltage | $V_{CEO}$ | | 20 | V |
| Emitter-to-Base Voltage | $V_{EBO}$ | | 3 | V |
| Collector Current | $I_C$ | | 300 | mA |
| Collector Current (Pulse) | $I_{CP}$ | | 600 | mA |
| Collector Dissipation | $P_C$ | Mounted on ceramic board (250mm²×0.8mm) 1unit | 0.75 | W |
| Total Dissipation | $P_T$ | Mounted on ceramic board (250mm²×0.8mm) | 1.0 | W |
| Junction Temperature | Tj | | 150 | ˚C |
| Storage Temperature | Tstg | | –55 to +150 | ˚C |

### Electrical Characteristics at Ta=25˚C

| Parameter | Symbol | Conditons | Ratings | | | Unit |
|---|---|---|---|---|---|---|
| | | | min | typ | max | |
| Collector Cutoff Current | $I_{CBO}$ | $V_{CB}$=20V, $I_E$=0 | | | 1.0 | μA |
| Emitter Cutoff Current | $I_{EBO}$ | $V_{EB}$=2V, $I_C$=0 | | | 5.0 | μA |
| DC Current Gain | $h_{FE}1$ | $V_{CE}$=5V, $I_C$=50mA | 60 | | 200 | |
| | $h_{FE}2$ | $V_{CE}$=5V, $I_C$=300mA | 20 | | | |
| DC Current Gain Ratio | $h_{FE}1$(small/large) | $V_{CE}$=5V, $I_C$=50mA | 0.7 | 0.95 | | |
| Base-to-Emitter Voltage Difference | $V_{BE}$(large-small | $V_{CE}$=5V, $I_C$=100mA | | 3.0 | 15 | mV |
| Gain-Bandwidth Product | $f_T$ | $V_{CE}$=5V, $I_C$=50mA | | 2.2 | | GHz |
| Output Capacitance | Cob | $V_{CB}$=10V, f=1MHz | | 2.9 | | pF |
| Reverse Transfer Capacitance | Cre | $V_{CB}$=10V, f=1MHz | | 2.6 | | pF |
| C-E Saturation Voltage | $V_{CE(sat)}$ | $I_C$=200mA, $I_B$=20mA | | 0.2 | 0.5 | V |
| B-E Saturation Voltage | $V_{BE(sat)}$ | $I_C$=200mA, $I_B$=20mA | | 0.9 | 1.2 | V |

Note:The specifications shown above are for each individual transistor.

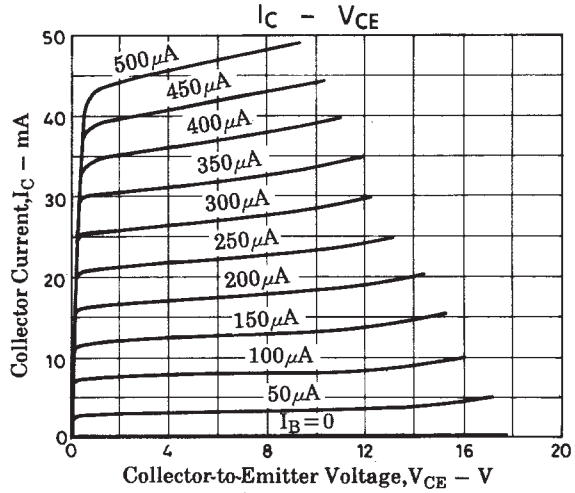
However, the DC Current Gain Ratio and Base Emitter to Voltage Difference are for the paired transistors.

Marking:201

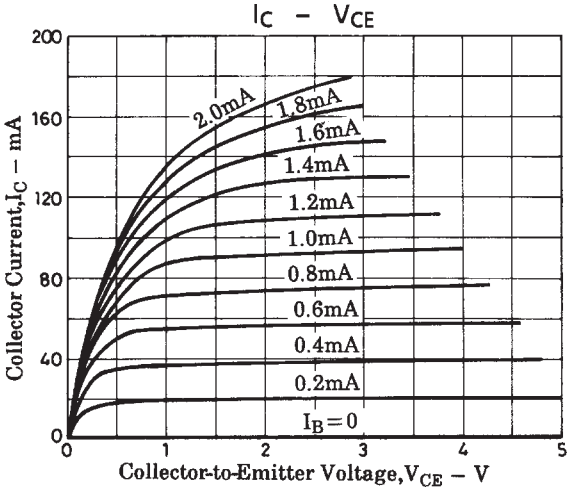

**SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters**

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

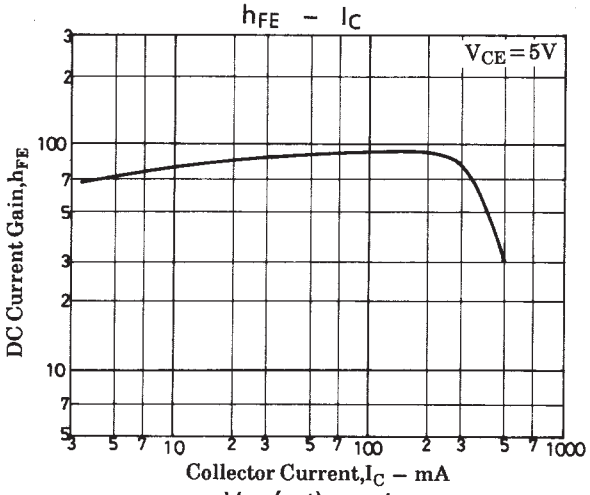
$I_C$ – $V_{CE}$



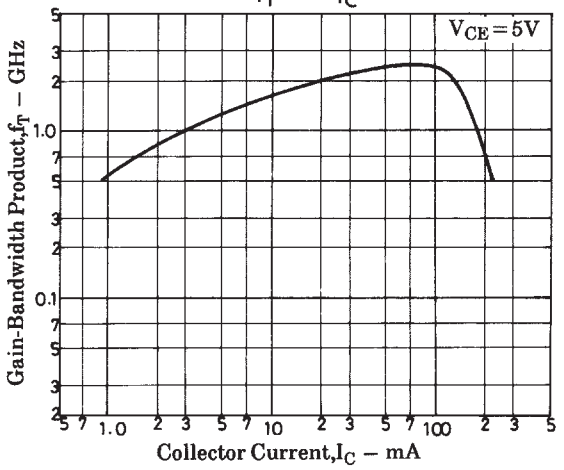

$I_C$ – $V_{CE}$



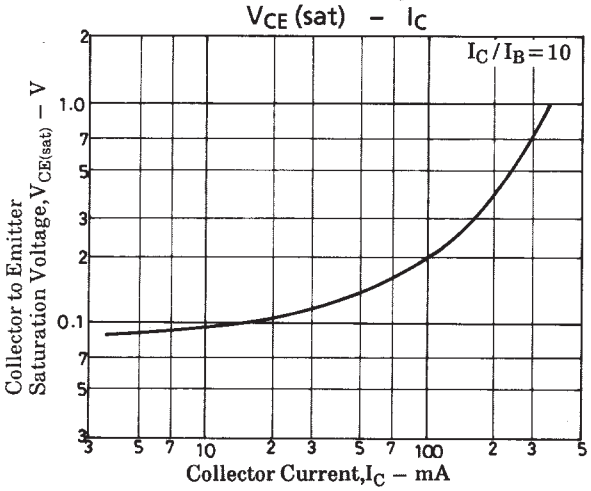

$h_{FE}$ – $I_C$



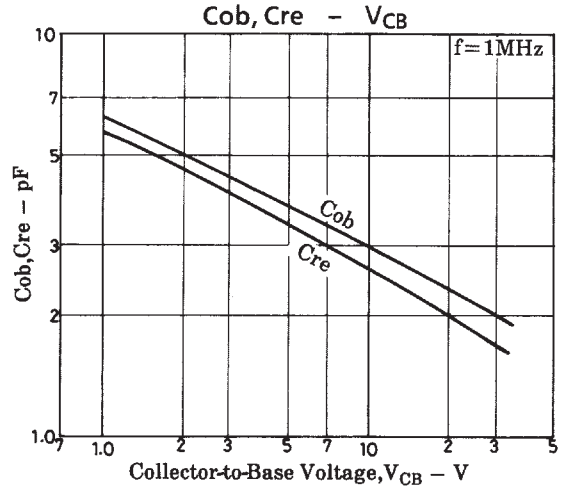

$f_T$ – $I_C$



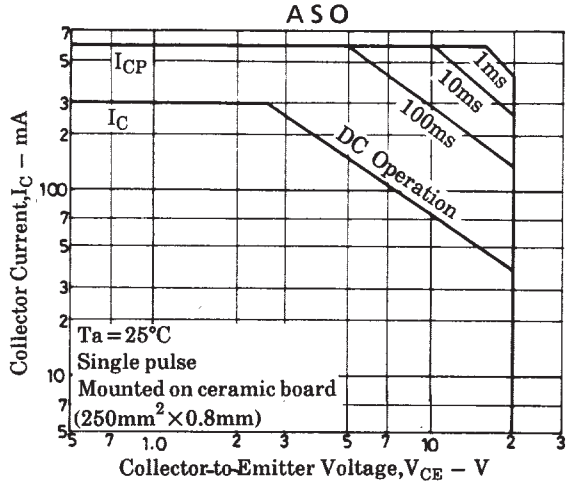

$V_{CE}$ (sat) – $I_C$




Cob, Cre – $V_{CB}$




ASO




Collector Dissipation (Total)