

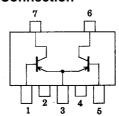
# **FP215**

PNP 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 FP215 is formed with two chips, being equivalent to the 2SA1724, placed in one package.
- · Excellent in thermal equilibrium and pair capability.

#### **Electrical Connection**

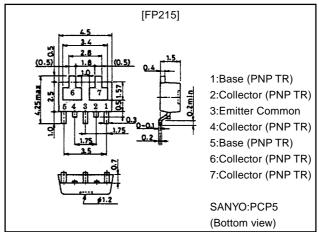


1:Base (PNP TR)
2:Collector (PNP TR)
3:Emitter Common
4:Collector (PNP TR)
5:Base (PNP TR)
6:Collector (PNP TR)
7:Collector (PNP TR)
(Top view)

## **Package Dimensions**

unit:mm

2108A



# **Specifications**

Marking:215

## Absolute Maximum Ratings at Ta = 25°C

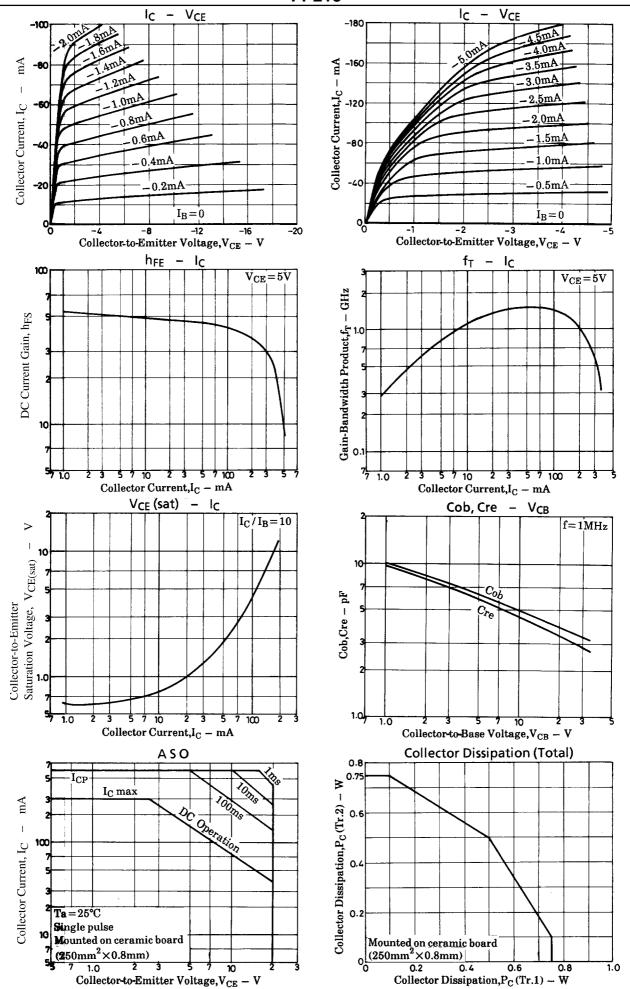
| Parameter                    | Symbol           | Conditions  | Ratings     | Unit |
|------------------------------|------------------|---|-------------|------|
| Collector-to-Base Voltage    | V <sub>CBO</sub> |   | -30         | V    |
| Collector-to-Emitter Voltage | VCEO             |   | -20         | V    |
| Emitter-to-Base Voltage      | V <sub>EBO</sub> |   | -3          | V    |
| Collector Current            | IC               |   | -300        | mA   |
| Collector Current (Pulse)    | I <sub>CP</sub>  |   | -600        | mA   |
| Collector Dissipation        | PC               | Mounted on ceramic board (250mm <sup>2</sup> ×0.8mm) 1 unit | 0.75        | W    |
| Total Dissipation            | PT               | Mounted on ceramic board (250mm <sup>2</sup> ×0.8mm)        | 1.0         | W    |
| Junction Temperature         | Tj               |   | 150         | °C   |
| Storage Temperature          | Tstg             |   | -55 to +150 | °C   |

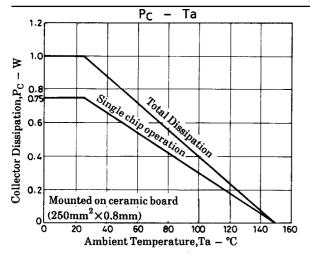
### Electrical Characteristics at Ta=25°C

| Parameter                          | Symbol                             | Conditons                                     | Ratings |      |      | Unit  |
|------------------------------------|------------------------------------|---|---------|------|------|-------|
|                                    | Symbol                             |   | min     | typ  | max  | Utill |
| Collector Cutoff Current           | ICBO                               | V <sub>CB</sub> =-20V, I <sub>E</sub> =0      |         |      | -0.1 | μA    |
| Emitter Cutoff Current             | I <sub>EBO</sub>                   | V <sub>EB</sub> =-2V, I <sub>C</sub> =0       |         |      | -1.0 | μA    |
| DC Current Gain                    | h <sub>FE</sub> 1                  | V <sub>CE</sub> =-5V, I <sub>C</sub> =-50mA   | 15      |      | 100  |       |
|                                    | h <sub>FE</sub> 2                  | V <sub>CE</sub> =-5V, I <sub>C</sub> =-3000mA | 5       |      |      |       |
| DC Current Gain Ratio              | h <sub>FE</sub> 1<br>(small-large) | V <sub>CE</sub> =-5V, I <sub>C</sub> =-50mA   | 0.6     | 0.93 |      |       |
| Base-to-Emitter Voltage Difference | V <sub>BE</sub> (large-small)      | V <sub>CE</sub> =-5V, I <sub>C</sub> =-100mA  |         | 3.0  | 25   | mV    |
| Gain-Bandwidth Product             | fT                                 | V <sub>CE</sub> =-5V, I <sub>C</sub> =-50mA   |         | 1.5  |      | GHz   |
| Output Capacitance                 | Cob                                | V <sub>CB</sub> =-10V, f=1MHz                 |         | 4.9  |      | pF    |
| Reverse Transfer Capacitance       | Cre                                | V <sub>CB</sub> =-10V, f=1MHz                 |         | 4.4  |      | pF    |
| C-E Saturation Voltage             | VCE(sat)                           | I <sub>C</sub> =-100mA, I <sub>B</sub> =-10mA |         | -0.4 | -1.0 | V     |
| B-E Saturation Voltage             | V <sub>BE(sat)</sub>               | I <sub>C</sub> =-100mA, I <sub>B</sub> =-10mA |         | -0.9 | -1.2 | V     |

Note: The specifications shown above are for individual transistor.

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





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