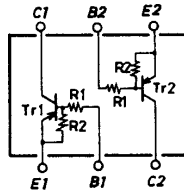


**FC109**

PNP Epitaxial Planar Silicon Composite Transistor

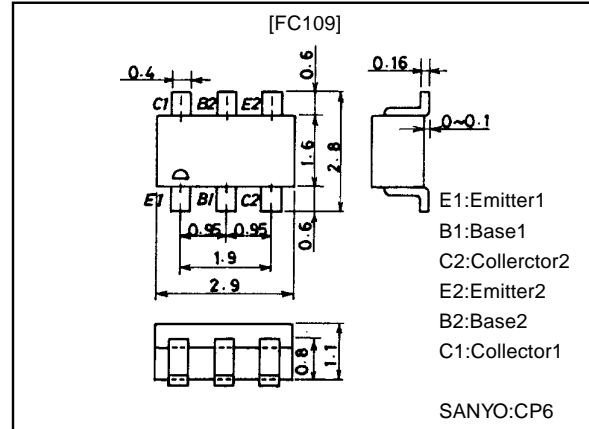
**Switching Applications****Features**

- On-chip bias resistors (R1=22kΩ, R2=22kΩ)
- Composite type with 2 transistors contained in the CP package currently in use, improving the mounting efficiency greatly.
- The FC109 is formed with two chips, being equivalent to the 2SA1342, placed in one package.
- Excellent in thermal equilibrium and pair capability.

**Electrical Connection****Package Dimensions**

unit:mm

2067

**Specifications****Absolute Maximum Ratings at Ta = 25°C**

| Parameter                    | Symbol           | Conditions | Ratings     | Unit |
|------------------------------|------------------|------------|-------------|------|
| Collector-to-Base Voltage    | V <sub>CB0</sub> |            | -50         | V    |
| Collector-to-Emitter Voltage | V <sub>CEO</sub> |            | -50         | V    |
| Emitter-to-Base Voltage      | V <sub>EBO</sub> |            | -10         | V    |
| Collector Current            | I <sub>C</sub>   |            | -100        | mA   |
| Collector Current (Pulse)    | I <sub>CP</sub>  |            | -200        | mA   |
| Collector Dissipation        | P <sub>C</sub>   | 1 unit     | 200         | mW   |
| Total Dissipation            | P <sub>T</sub>   |            | 300         | mW   |
| Junction Temperature         | T <sub>J</sub>   |            | 150         | °C   |
| Storage Temperature          | T <sub>stg</sub> |            | -55 to +150 | °C   |

**Electrical Characteristics at Ta = 25°C**

| Parameter                | Symbol               | Conditions                                    | Ratings |      |      | Unit |
|--------------------------|----------------------|---|---------|------|------|------|
|                          |                      |   | min     | typ  | max  |      |
| Collector Cutoff Current | I <sub>CB0</sub>     | V <sub>CB</sub> =-40V, I <sub>E</sub> =0      |         |      | -0.1 | μA   |
| Collector Cutoff Current | I <sub>CEO</sub>     | V <sub>CE</sub> =-40V, I <sub>B</sub> =0      |         |      | -0.5 | μA   |
| Emitter Cutoff Current   | I <sub>EBO</sub>     | V <sub>EB</sub> =-5V, I <sub>C</sub> =0       | -70     | -113 | -160 | μA   |
| DC Current Gain          | h <sub>FE</sub>      | V <sub>CE</sub> =-5V, I <sub>C</sub> =-5mA    | 50      |      |      |      |
| Gain-Bandwidth Product   | f <sub>T</sub>       | V <sub>CE</sub> =-10V, I <sub>C</sub> =-5mA   |         | 200  |      | MHz  |
| Output Capacitance       | C <sub>ob</sub>      | V <sub>CB</sub> =-10V, f=1MHz                 |         | 5.1  |      | pF   |
| C-E Saturation Voltage   | V <sub>CE(sat)</sub> | I <sub>C</sub> =-10mA, I <sub>B</sub> =-0.5mA |         | -0.1 | -0.3 | V    |
| C-B Breakdown Voltage    | V <sub>(BR)CBO</sub> | I <sub>C</sub> =-10μA, I <sub>E</sub> =0      | -50     |      |      | V    |
| C-E Breakdown Voltage    | V <sub>(BR)CEO</sub> | I <sub>C</sub> =-100μA, R <sub>BE</sub> =∞    | -50     |      |      | V    |
| Input OFF-State Voltage  | V <sub>I(off)</sub>  | V <sub>CE</sub> =-5V, I <sub>C</sub> =-100μA  | -0.8    | -1.1 | -1.5 | V    |
| Input ON-State Voltage   | V <sub>I(on)</sub>   | V <sub>CE</sub> =-0.2V, I <sub>C</sub> =-5mA  | -1.0    | -1.9 | -3.0 | V    |
| Input Resistance         | R1                   |   | 15      | 22   | 29   | kΩ   |
| Resistance Ratio         | R1/R2                |   | 0.9     | 1.0  | 1.1  |      |

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

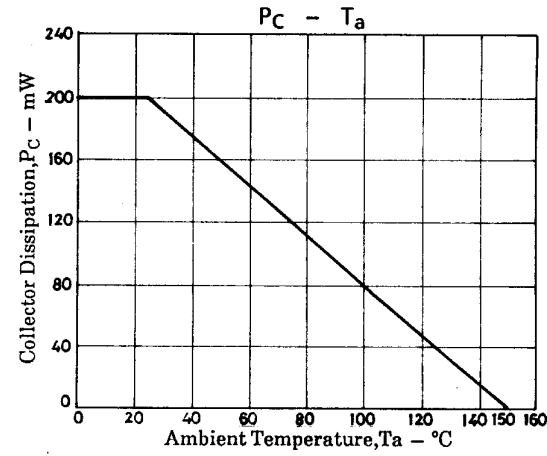
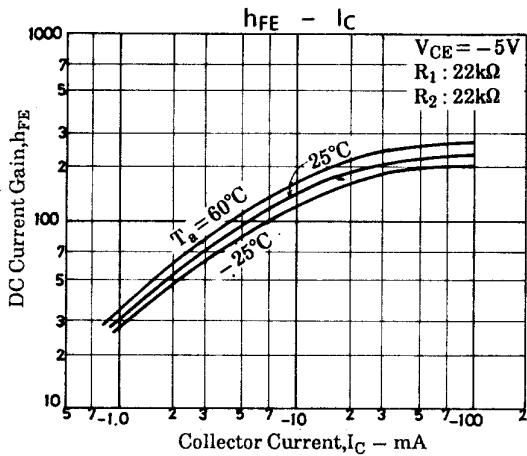
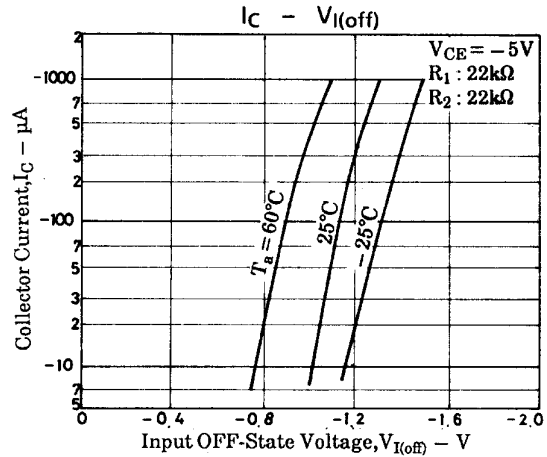
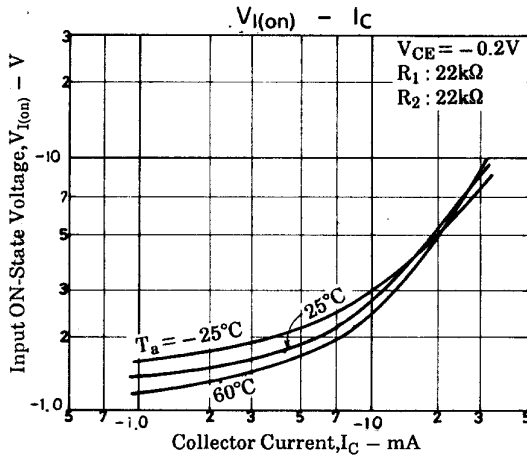
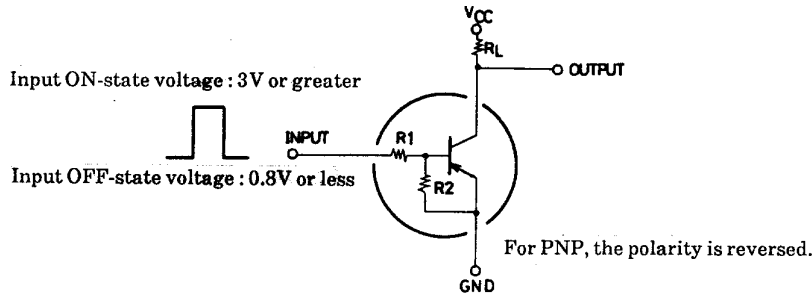
Marking:109

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Sample Application Circuit



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