

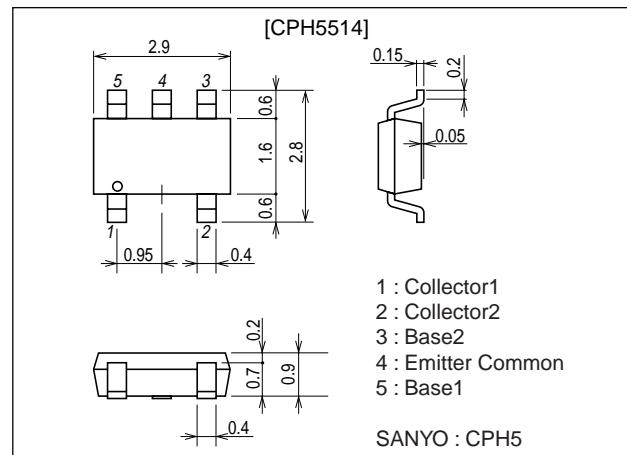
**CPH5514**

Switching Applications (with Bias Resistance)

Features

- On-chip bias resistance ($R1=10k\Omega$, $R2=10k\Omega$).
- Composite type with 2 transistors contained in the CPH package currently in use, improving the mounting efficiency greatly.
- The CPH5514 is formed with two chips, being equivalent to the 2SA1344, placed in one package.
- Excellent in thermal equilibrium and pair capability.

Package Dimensions

unit : mm
2218

Specifications

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

| Parameter | Symbol | Conditions | Ratings | Unit |
|------------------------------|-----------|------------|-------------|------------------|
| Collector-to-Base Voltage | V_{CBO} | | -50 | V |
| Collector-to-Emitter Voltage | V_{CEO} | | -50 | V |
| Emitter-to-Base Voltage | V_{EBO} | | -10 | V |
| Collector Current | I_C | | -100 | mA |
| Collector Current (Pulse) | I_{CP} | | -200 | mA |
| Collector Dissipation | P_C | 1unit | 350 | mW |
| Total Power Dissipation | P_T | | 500 | mW |
| Junction Temperature | T_J | | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | | -55 to +150 | $^\circ\text{C}$ |

Electrical Characteristics at $T_a=25^\circ\text{C}$

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--------------------------|-----------|--------------------------------|---------|------|------|---------------|
| | | | min | typ | max | |
| Collector Cutoff Current | I_{CBO} | $V_{CB}=-40V, I_E=0$ | | | -0.1 | μA |
| | I_{CEO} | $V_{CE}=-40V, I_E=0$ | | | -0.5 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB}=-5V, I_C=0$ | -170 | -250 | -360 | μA |
| DC Current Gain | h_{FE} | $V_{CE}=-5V, I_C=-10\text{mA}$ | 50 | | | |
| Gain-Bandwidth Product | f_T | $V_{CE}=-10V, I_C=-5\text{mA}$ | | 200 | | MHz |
| Output Capacitance | C_{ob} | $V_{CB}=-10V, f=1\text{MHz}$ | | 5.1 | | pF |

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

Continued on next page.

Marking : 3U

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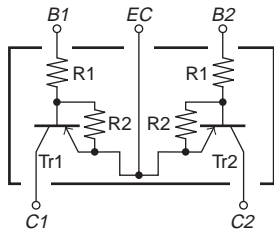
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CPH5514

Continued from preceding page.

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---------------|---|---------|------|------|-----------|
| | | | min | typ | max | |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = -10\text{mA}$, $I_B = -0.5\text{mA}$ | | -1.0 | -0.3 | V |
| Collector-to-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C = -10\mu\text{A}$, $I_E = 0$ | -50 | | | V |
| Collector-to-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = -100\mu\text{A}$, $R_{BE} = \infty$ | -50 | | | V |
| Input OFF-State Voltage | $V_{I(off)}$ | $V_{CE} = -5\text{V}$, $I_C = -100\mu\text{A}$ | -0.8 | -1.1 | -1.5 | V |
| Input ON-State Voltage | $V_{I(on)}$ | $V_{CE} = -0.2\text{V}$, $I_C = -10\text{mA}$ | -1.0 | -2.0 | -4.0 | V |
| Input Resistance | R1 | | 7.0 | 10 | 13 | $k\Omega$ |
| Resistance Ratio | R1 / R2 | | 0.9 | 1.0 | 1.1 | |

Electrical Connection

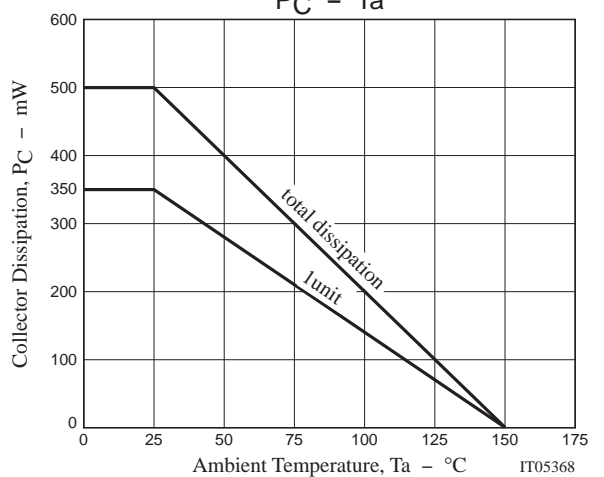
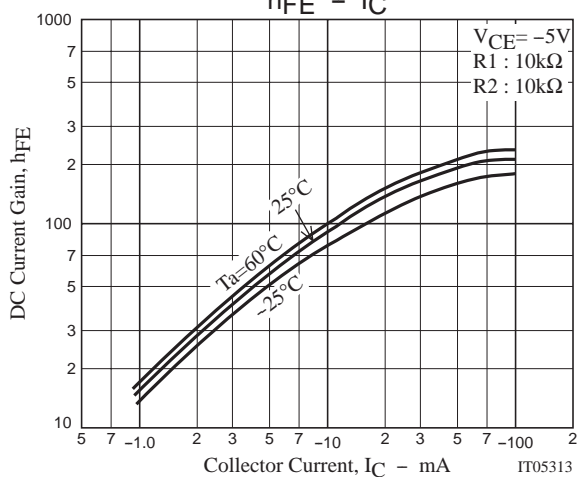
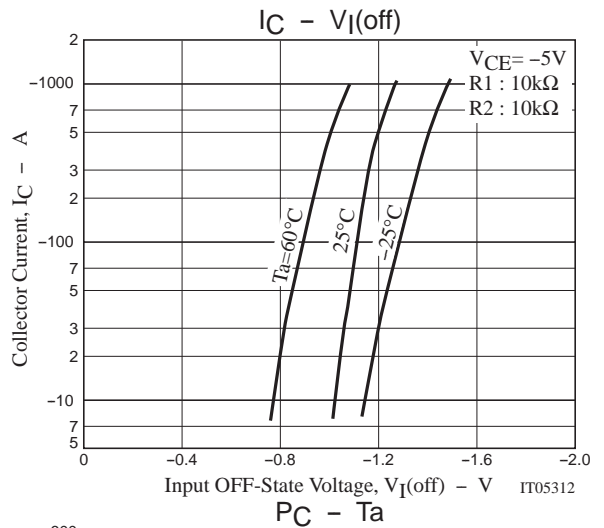
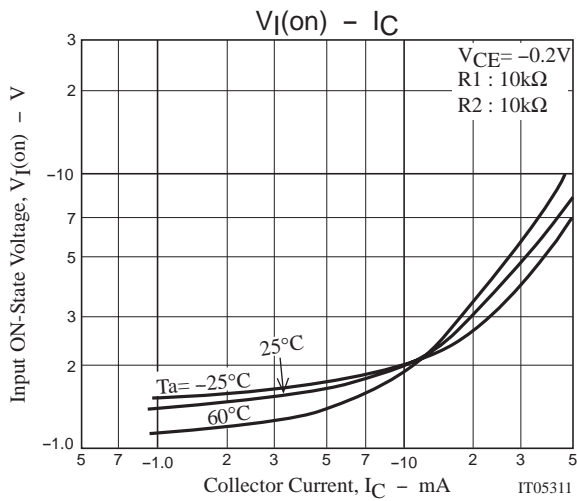
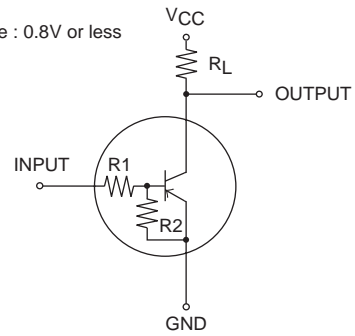


Application Circuit Example

Input ON-State Voltage : Above 4V



Input OFF-State Voltage : 0.8V or less



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