

**CPH5514**

Switching Applications (with Bias Resistance)

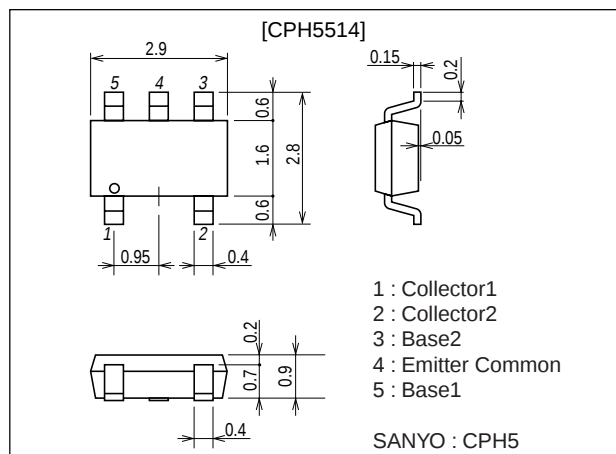
Features

- On-chip bias resistance ($R_1=10k\Omega$, $R_2=10k\Omega$).
- 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_{CB0}		-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_{CB0}	$V_{CB}=-40V, I_E=0$			-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.

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Marking : 3U

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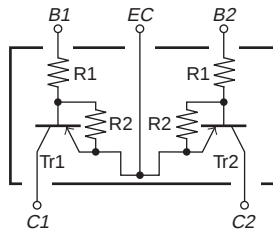
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -10\text{mA}$, $I_B = -0.5\text{mA}$		-1.0	-0.3	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}$, $I_E = 0$	-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

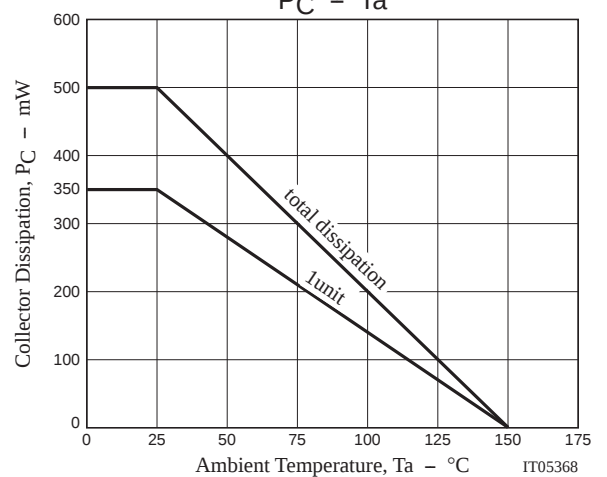
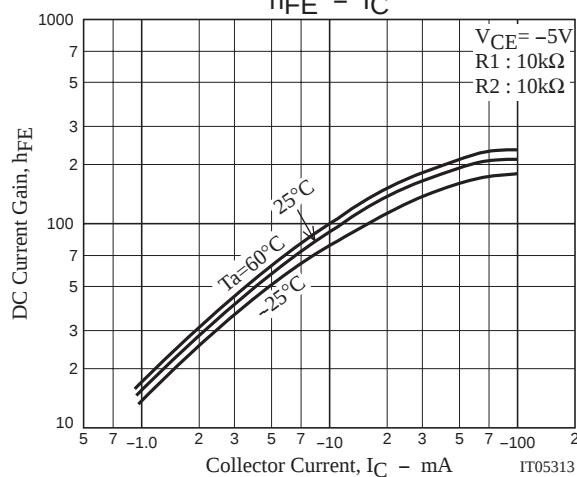
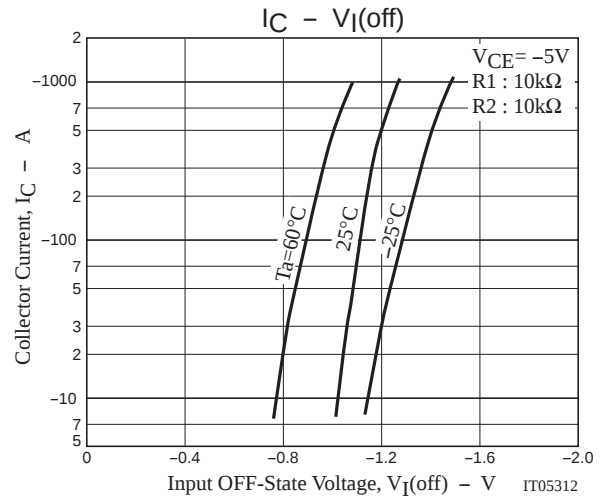
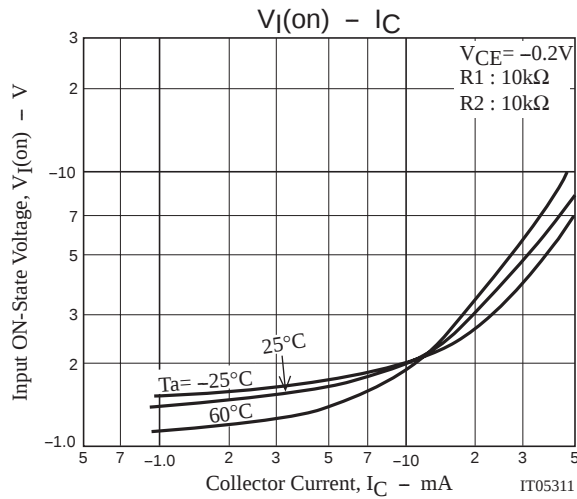
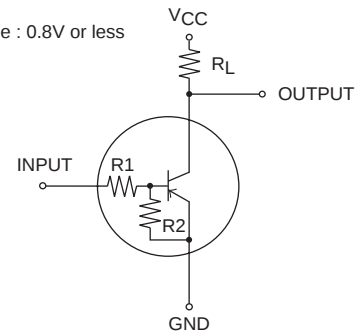


Application Circuit Example

Input ON-State Voltage : Above 4V



Input OFF-State Voltage : 0.8V or less



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