



Switching Applications with Bias Resistance

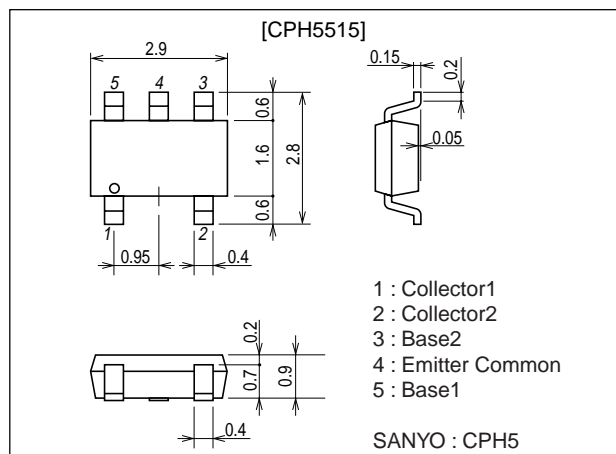
Features

- 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 CPH5515 is formed with two chips, being equivalent to the 2SC3402, 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_{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	$V_{CE}=10V, I_C=5\text{mA}$		250		MHz
Output Capacitance	C_{ob}	$V_{CB}=10V, f=1\text{MHz}$		3.3		pF

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

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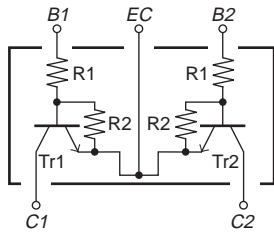
Marking : 3V

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

Electrical Connection

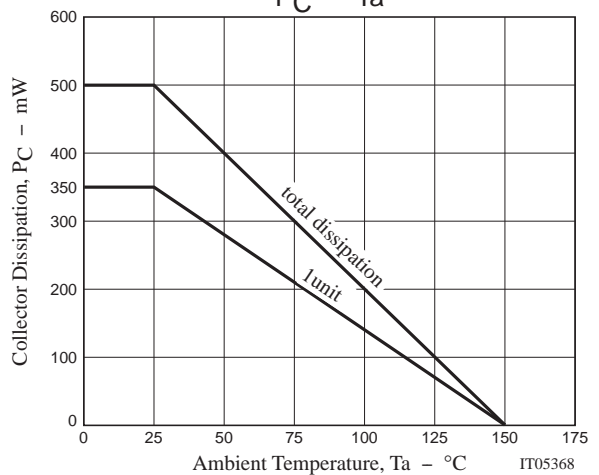
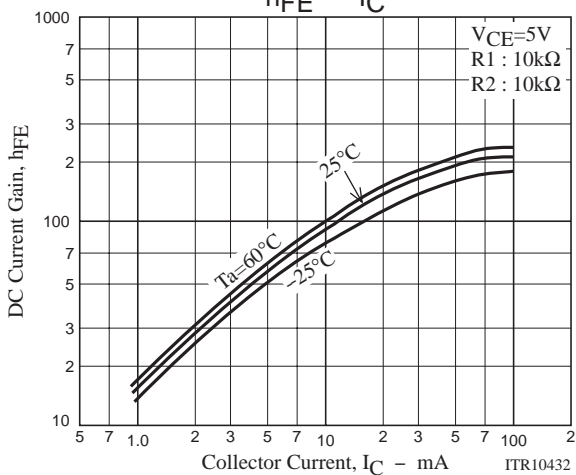
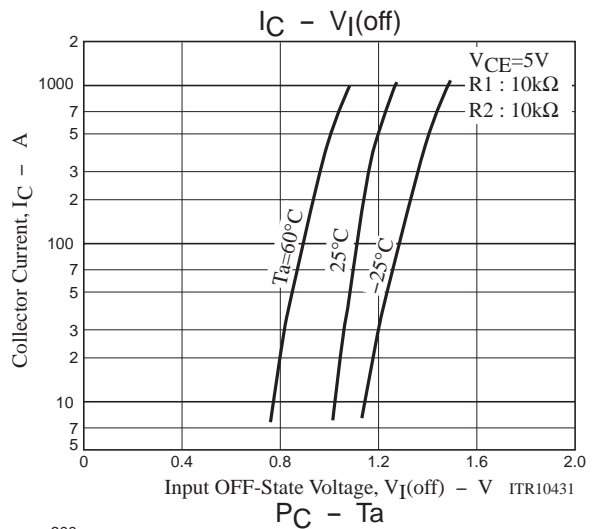
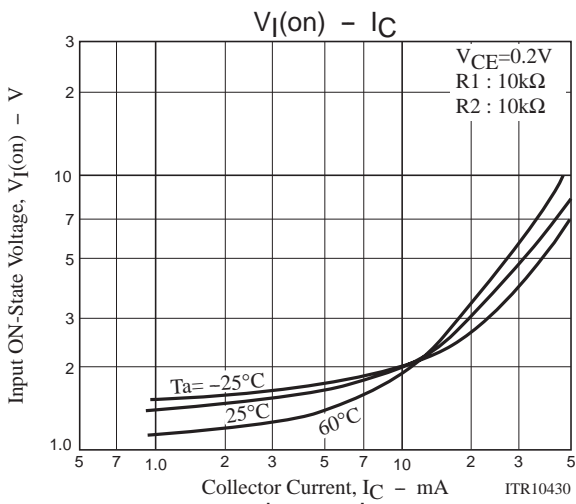
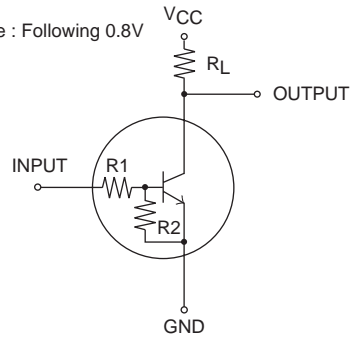


Sample Application Circuit

Input ON-State Voltage : Above 4V



Input OFF-State Voltage : Following 0.8V



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