



## High-Current Switching Applications

### Applications

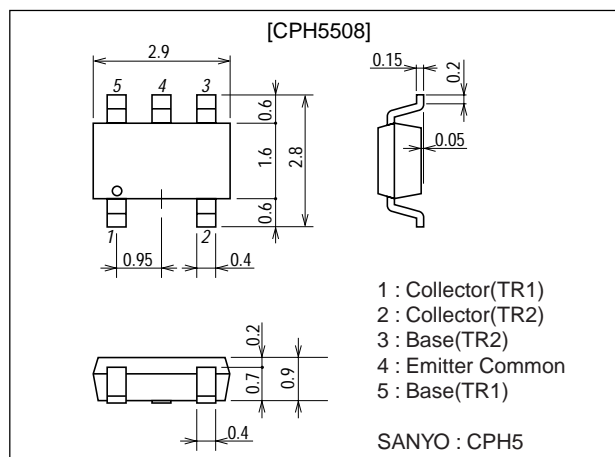
- Inverters, Relay drivers, Lamp drivers, Motor drivers, Strobes.

### Features

- Composite type with 2 NPN transistors in one package facilitating high-density mounting.
- The CPH5508 is composed of 2 CPH3216 equivalent chips.
- Ultrasmall package facilitates miniaturization in end products (mounting height : 0.9mm).

### Package Dimensions

unit : mm  
2162



### Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CB0</sub>		100	V
Collector-to-Emitter Voltage	V <sub>CE0</sub>		100	V
Collector-to-Base Voltage	V <sub>CEO</sub>		50	V
Emitter-to-Base Voltage	V <sub>EBO</sub>		5	V
Collector Current	I <sub>C</sub>		1	A
Collector Current (Pulse)	I <sub>CP</sub>		3	A
Base Current	I <sub>B</sub>		200	mA
Collector Dissipation	P <sub>C</sub>	Mounted on a ceramic board (600mm <sup>2</sup> X0.8mm) 1unit	0.9	W
Total Dissipation	P <sub>T</sub>	Mounted on a ceramic board (600mm <sup>2</sup> X0.8mm)	1.2	W
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
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =4V, I <sub>C</sub> =0			0.1	μA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =2V, I <sub>C</sub> =100mA	200		560	
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =300mA		420		MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, f=1MHz		6		pF

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

Continued on next page.

Marking : EH

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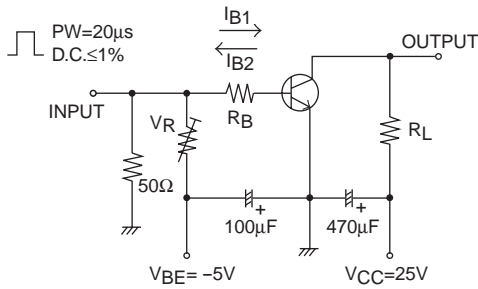
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# CPH5508

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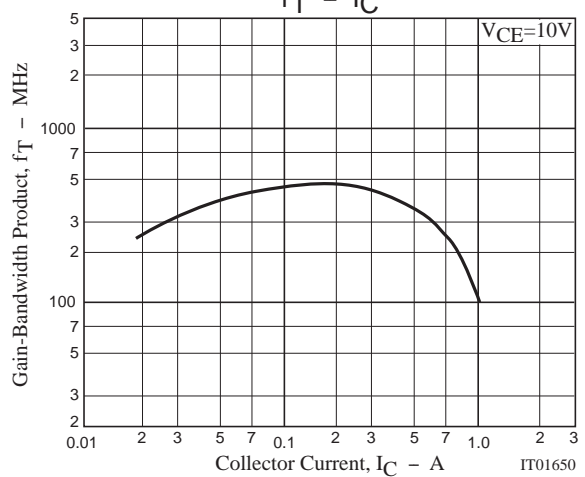
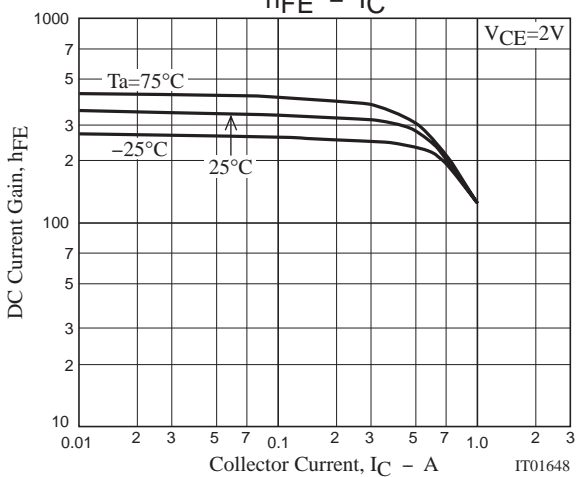
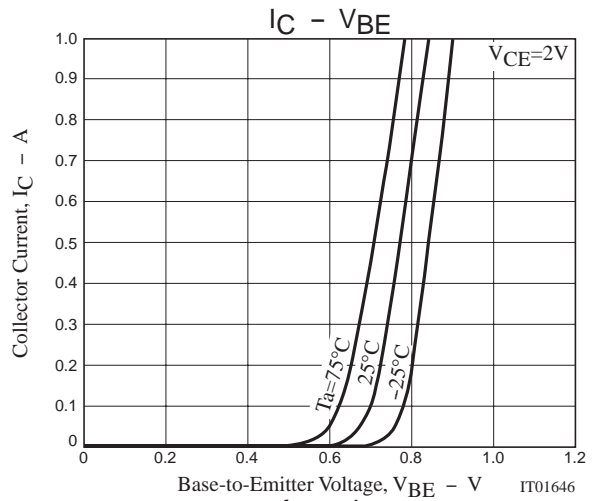
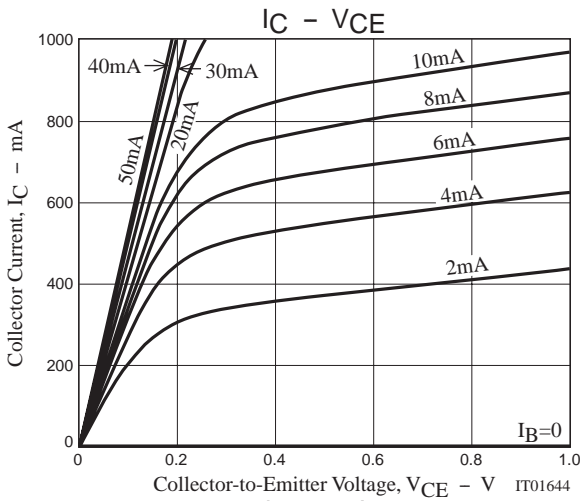
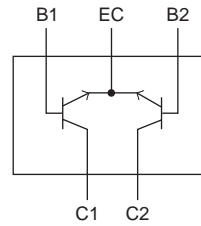
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=500mA, I_B=10mA$		130	190	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=500mA, I_B=10mA$		0.81	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	100			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C=100\mu A, R_{BE}=0$	100			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	6			V
Turn-ON Time	$t_{on}$	See specified Test Circuit.		35		ns
Storage Time	$t_{stg}$	See specified Test Circuit.		330		ns
Fall Time	$t_f$	See specified Test Circuit.		40		ns

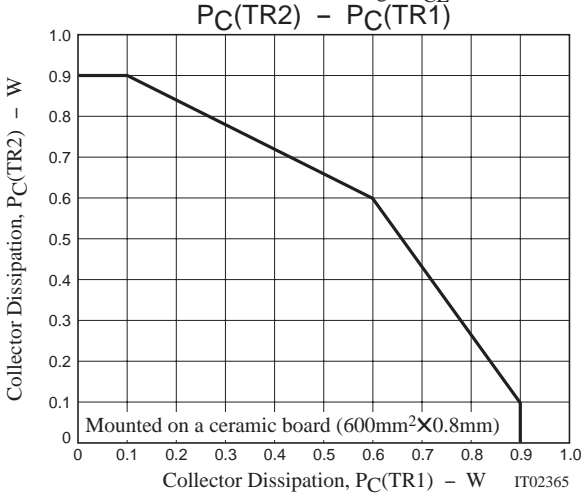
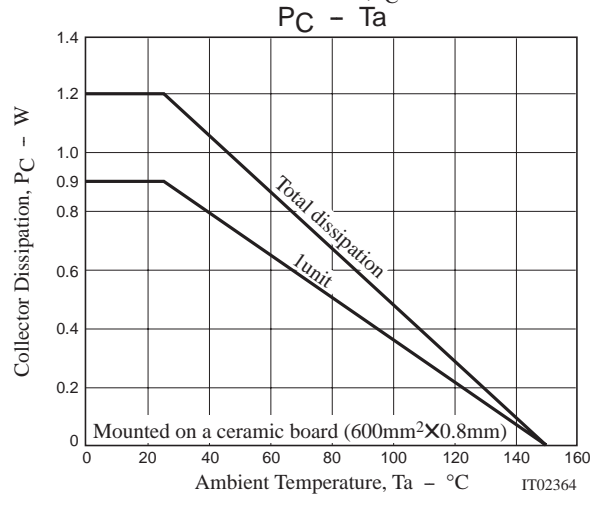
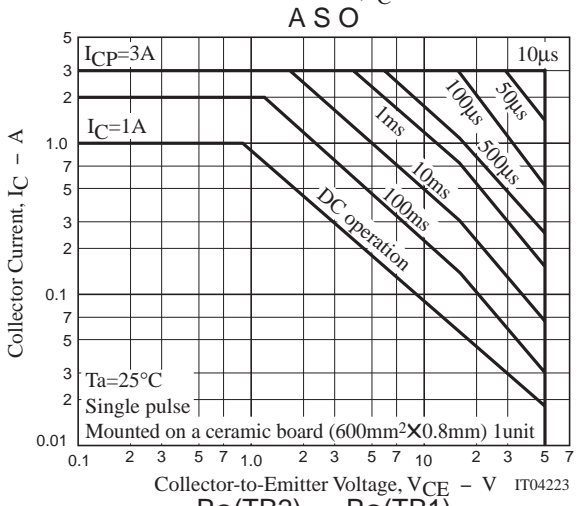
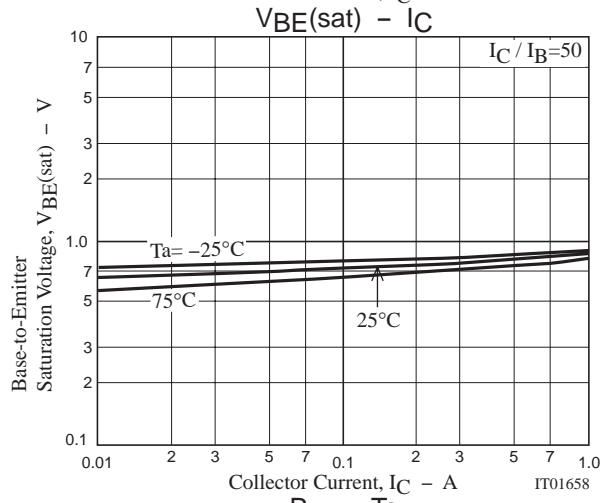
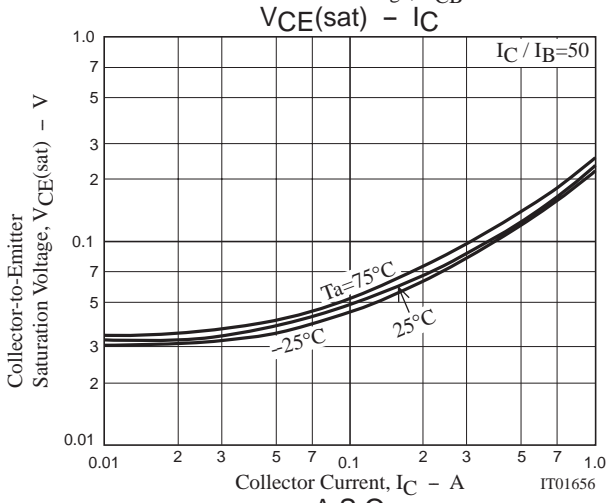
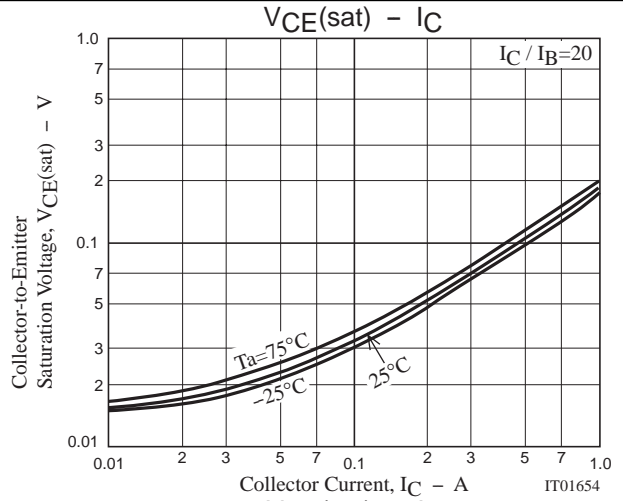
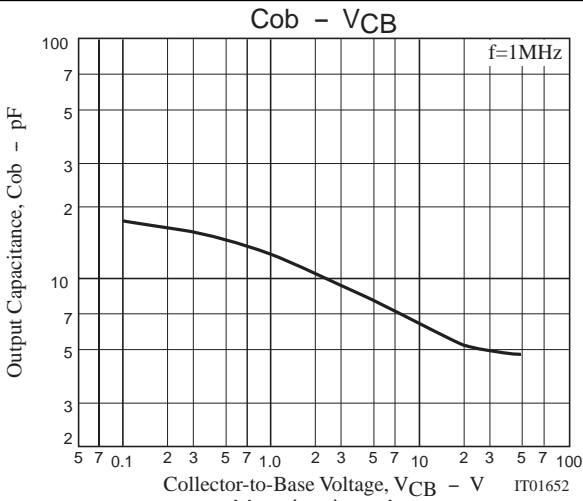
## Switching Time Test Circuit



$$I_C = 20I_{B1} = -20I_{B2} = 500mA$$

## Electrical Connection





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