



NPN / PNP Epitaxial Planar Silicon Transistors

# CPH6071 — Video Output Driver, High-Frequency Amplifier Applications

## Features

- Composite type with NPN transistor and PNP transistor contained in the conventional CPH package improving the mounting efficiency greatly.
- The CPH6071 is formed with two chips, being equivalent to the 2SC4504 and the other the 2SA1724, placed in one package.

## Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
[TR1(NPN Tr)]				
Collector-to-Base Voltage	$V_{CBO}$		30	V
Collector-to-Emitter Voltage	$V_{CEO}$		20	V
Emitter-to-Base Voltage	$V_{EBO}$		3	V
Collector Current	$I_C$		300	mA
Collector Current (Pulse)	$I_{CP}$		600	mA
Collector Dissipation	$P_C$	Mounted on a ceramic board (600mm <sup>2</sup> X0.8mm)	0.9	W
[TR2(PNP Tr)]				
Collector-to-Base Voltage	$V_{CBO}$		-30	V
Collector-to-Emitter Voltage	$V_{CEO}$		-20	V
Emitter-to-Base Voltage	$V_{EBO}$		-3	V
Collector Current	$I_C$		-300	mA
Collector Current (Pulse)	$I_{CP}$		-600	mA
Collector Dissipation	$P_C$	Mounted on a ceramic board (600mm <sup>2</sup> X0.8mm)	0.9	W
[Common Ratings]				
Total Dissipation	$P_T$	Mounted on a ceramic board (600mm <sup>2</sup> X0.8mm)	1.1	W
Junction Temperature	$T_J$		150	°C
Storage Temperature	$T_{stg}$		-55 to +150	°C

Marking : GH

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# CPH6071

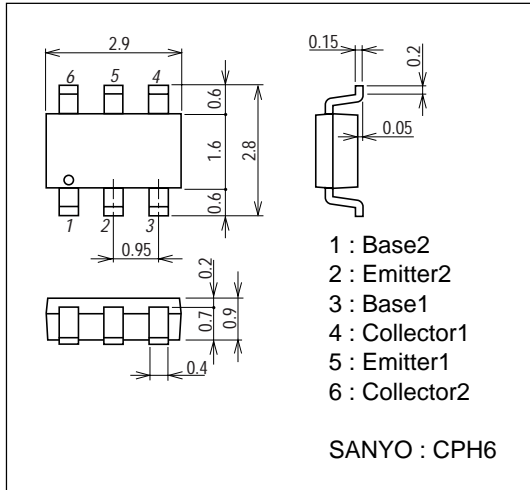
## Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
[TR1(NPN Tr)]						
Collector Cutoff Current	ICBO	V <sub>CB</sub> =20V, I <sub>E</sub> =0			0.1	μA
Emitter Cutoff Current	IEBO	V <sub>EB</sub> =2V, I <sub>C</sub> =0			5.0	μA
DC Current Gain	hFE(1)	V <sub>CE</sub> =5V, I <sub>C</sub> =50mA	100		200	
	hFE(2)	V <sub>CE</sub> =5V, I <sub>C</sub> =300mA	20			
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =50mA		2.2		GHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, f=1MHz		2.9		pF
Reverse Transfer Capacitance	C <sub>re</sub>	V <sub>CB</sub> =10V, f=1MHz		2.6		pF
Collector-to-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =10mA		0.15	0.5	V
Base-to-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =10mA		0.9	1.2	V
[TR2(PNP Tr)]						
Collector Cutoff Current	ICBO	V <sub>CB</sub> =-20V, I <sub>E</sub> =0			-0.1	μA
Emitter Cutoff Current	IEBO	V <sub>EB</sub> =-2V, I <sub>C</sub> =0			-1.0	μA
DC Current Gain	hFE(1)	V <sub>CE</sub> =-5V, I <sub>C</sub> =-50mA	15		100	
	hFE(2)	V <sub>CE</sub> =-5V, I <sub>C</sub> =-300mA	5			
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =-5V, I <sub>C</sub> =-100mA		1.5		GHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =-10V, f=1MHz		4.9		pF
Reverse Transfer Capacitance	C <sub>re</sub>	V <sub>CB</sub> =-10V, f=1MHz		4.4		pF
Collector-to-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =-100mA, I <sub>B</sub> =-10mA		-0.4	-1.0	V
Base-to-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =-100mA, I <sub>B</sub> =-10mA		-0.9	-1.2	V

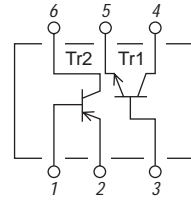
## Package Dimensions

unit : mm

2229

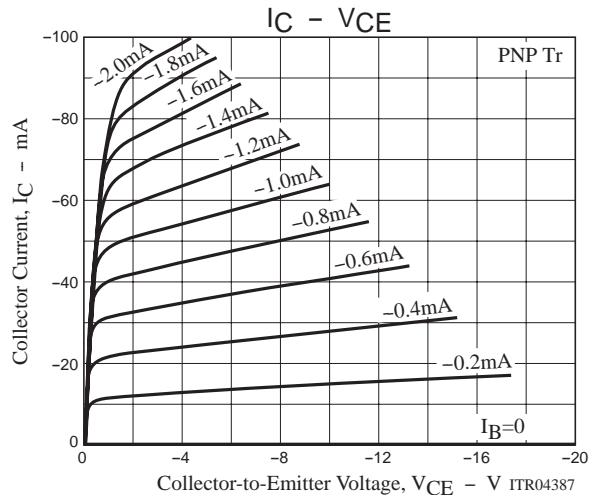
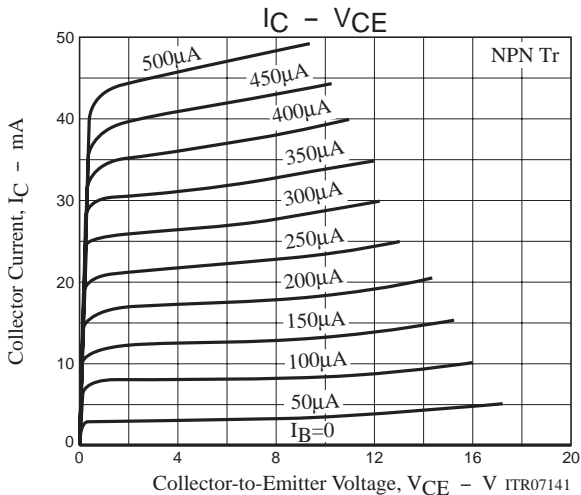


## Electrical Connection

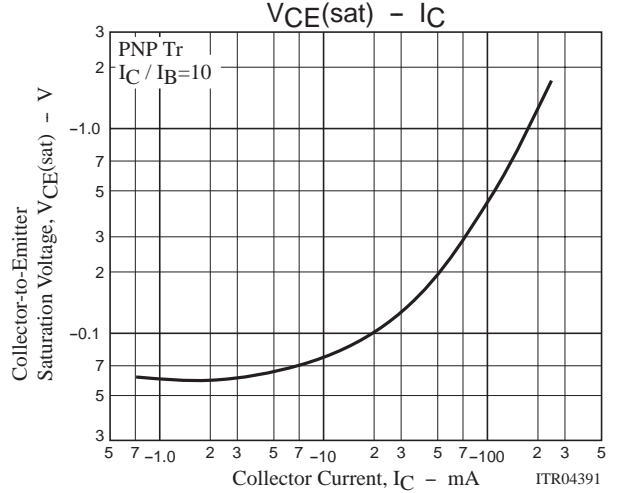
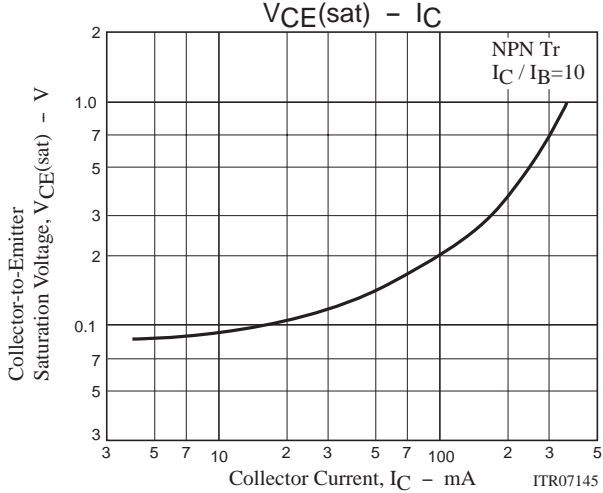
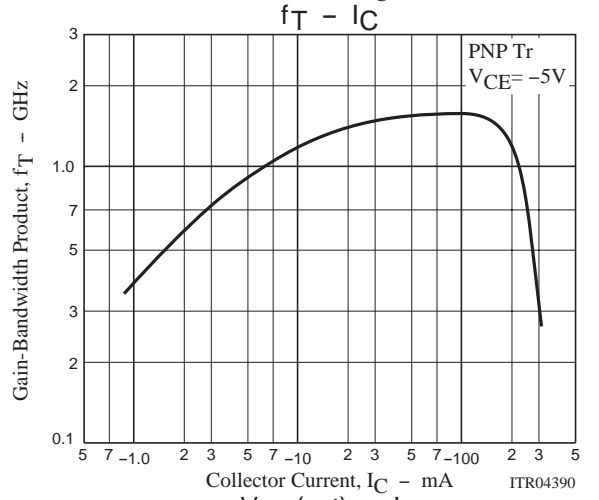
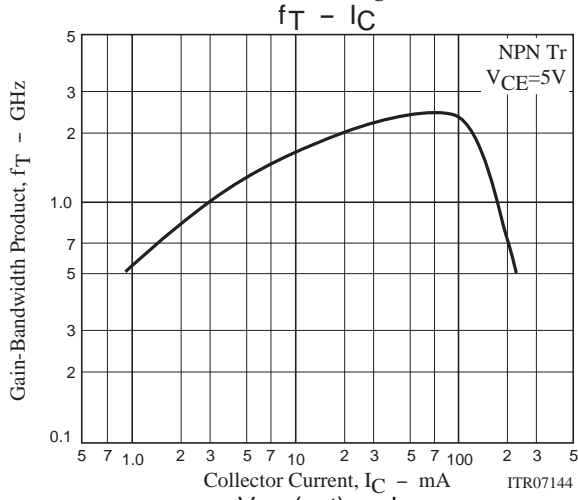
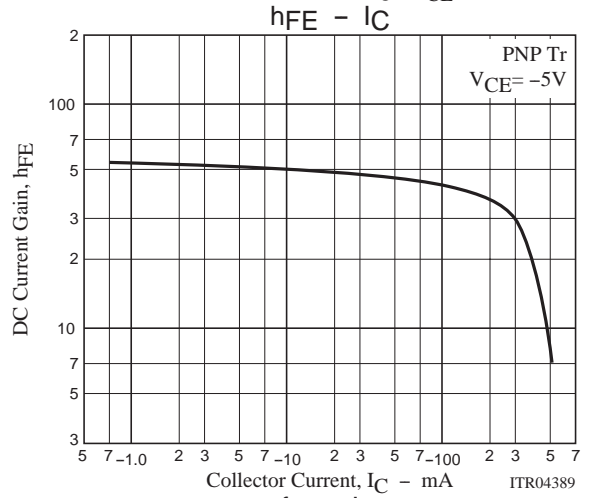
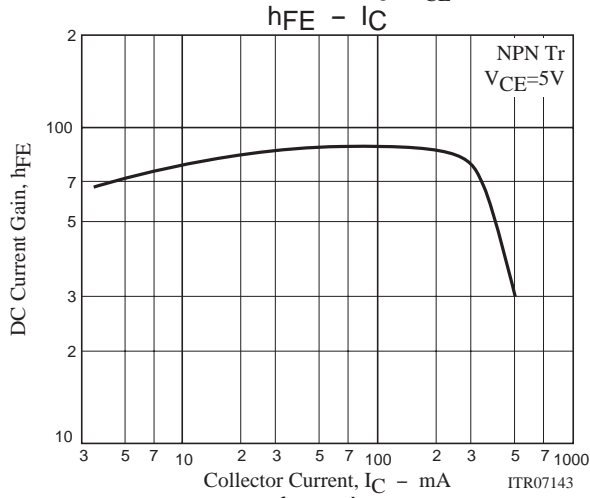
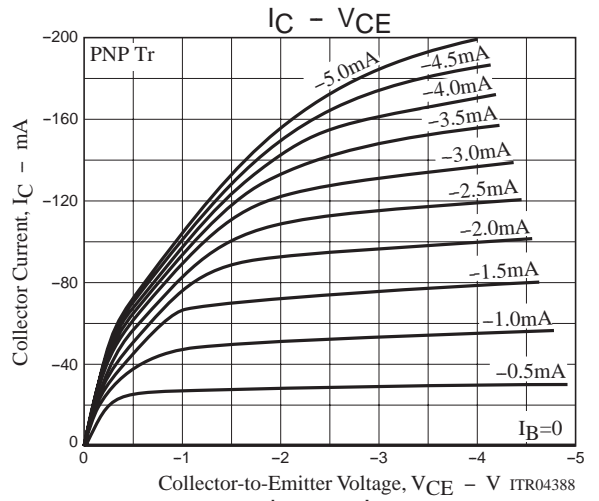
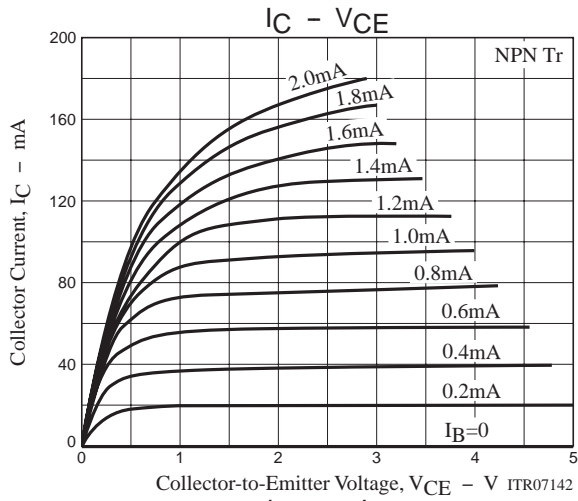


- 1 : Base2
- 2 : Emitter2
- 3 : Base1
- 4 : Collector1
- 5 : Emitter1
- 6 : Collector2

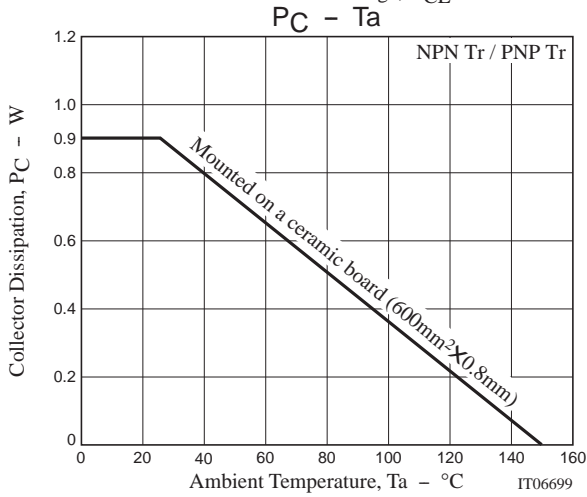
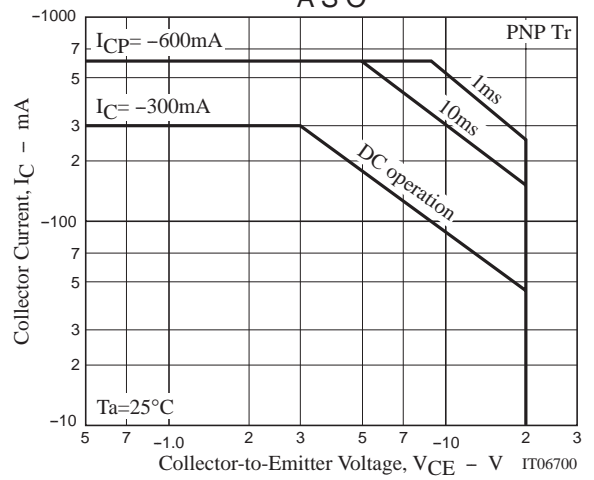
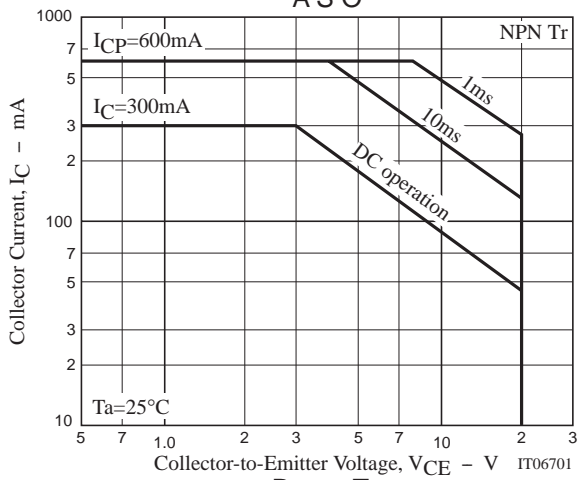
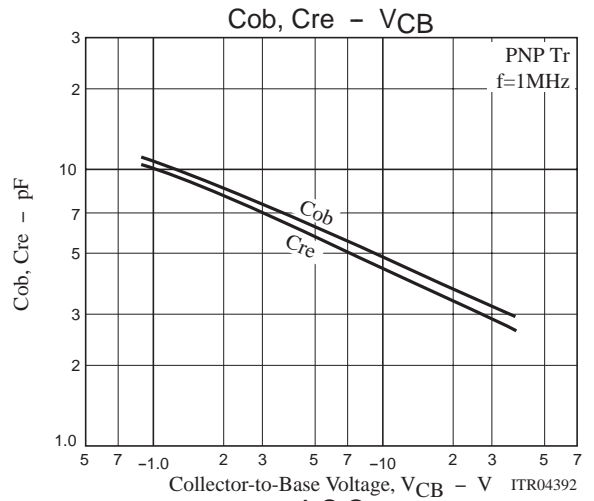
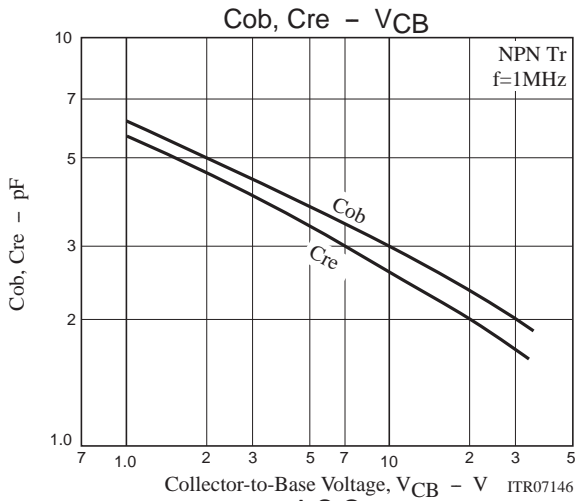
Top view



CPH6071



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