



# CPH6121

## DC / DC Converter Applications

### Applications

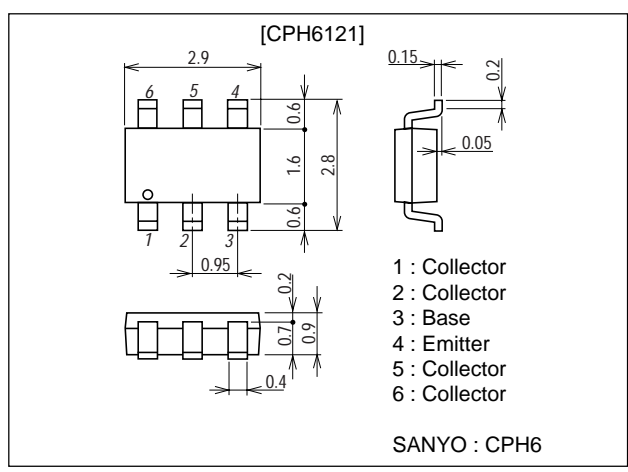
- Relay drivers, lamp drivers, motor drivers, strobes.

### Features

- Adoption of MBIT process.
- High current capacitance.
- Low collector-to-emitter saturation voltage.
- High speed switching.
- Ultrasmall-sized package permitting applied sets to be made small and slim (0.9mm).
- High allowable power dissipation.

### Package Dimensions

unit : mm  
2146A



### Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CB0</sub>		-15	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>		-12	V
Emitter-to-Base Voltage	V <sub>EBO</sub>		-5	V
Collector Current	I <sub>C</sub>		-3	A
Collector Current(Pulse)	I <sub>CP</sub>		-5	A
Base Current	I <sub>B</sub>		-600	mA
Collector Dissipation	P <sub>C</sub>	Mounted on a ceramic board (600mm <sup>2</sup> X0.8mm)	1.3	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> =-12V, 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> =-500mA	200		560	
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =-2V, I <sub>C</sub> =-500mA		380		MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =-10V, f=1MHz		40		pF
Collector-to-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =-1.5A, I <sub>B</sub> =-30mA	-110		-165	mV
Base-to-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =-1.5A, I <sub>B</sub> =-30mA	-0.85		-1.2	V

Marking : AV

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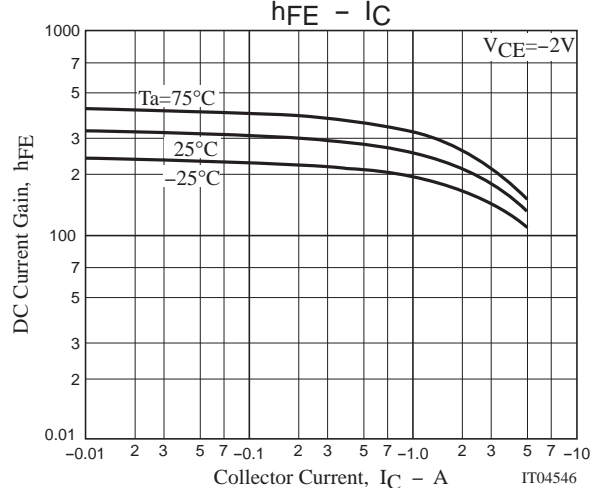
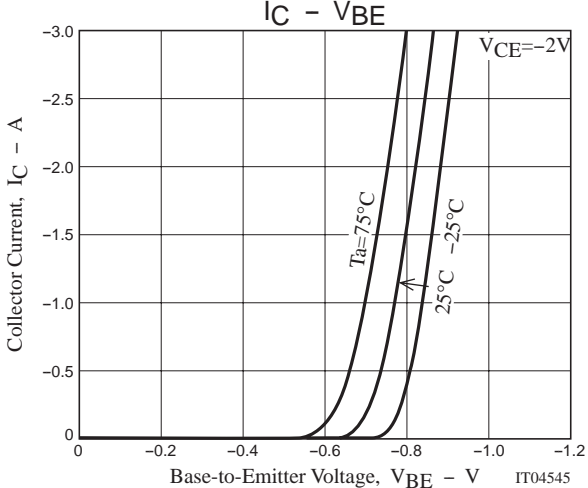
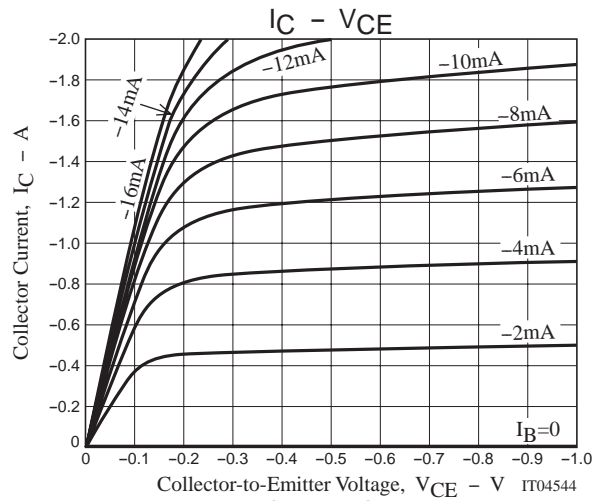
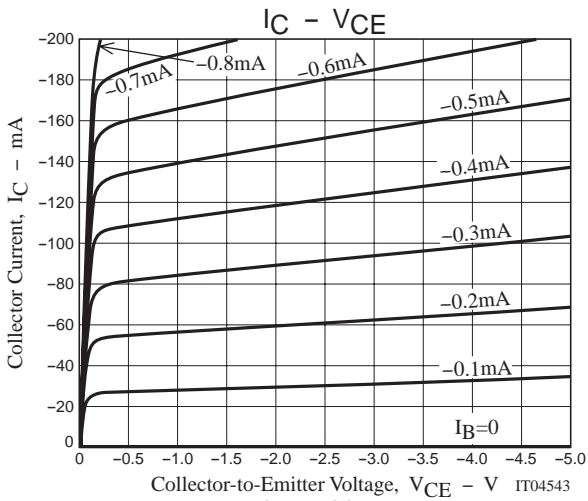
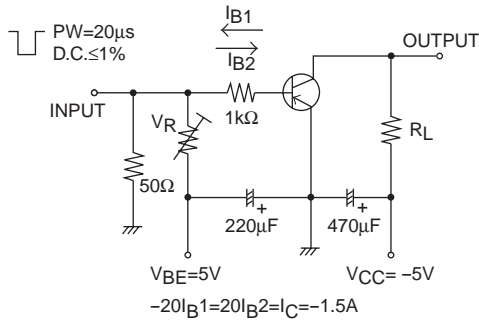
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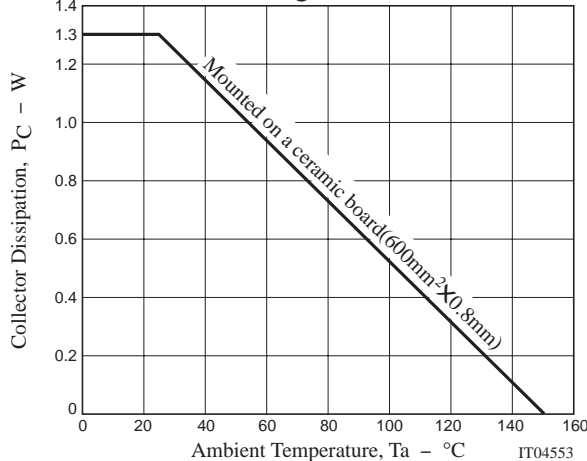
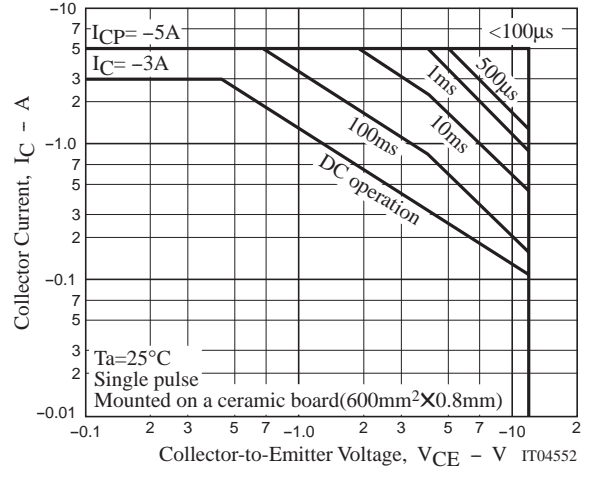
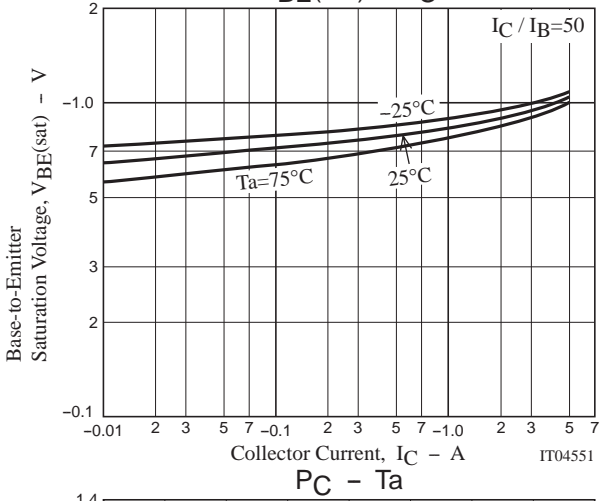
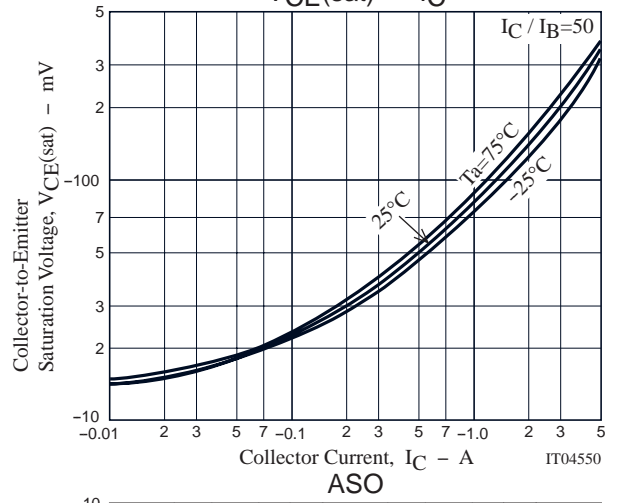
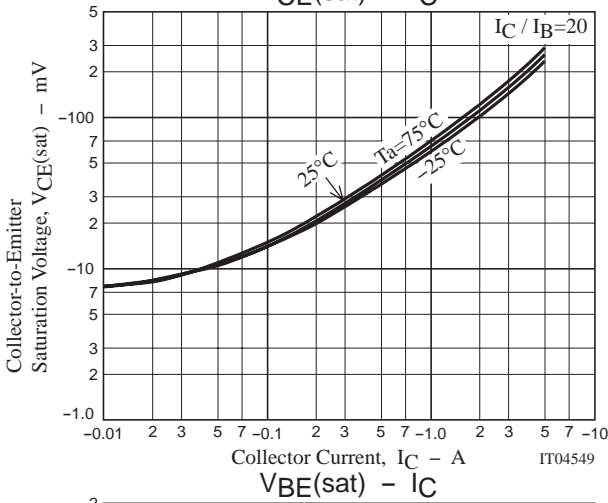
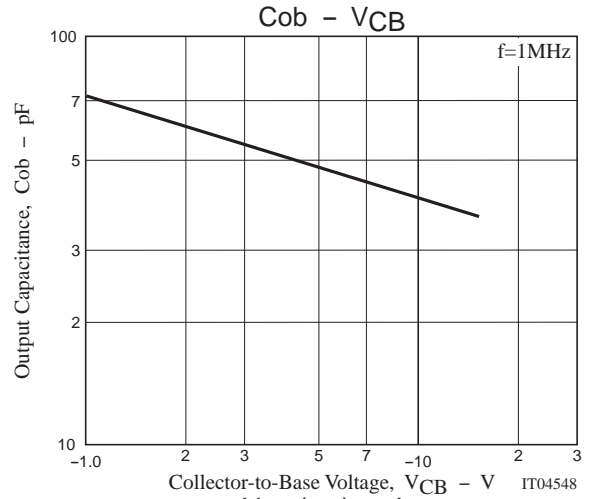
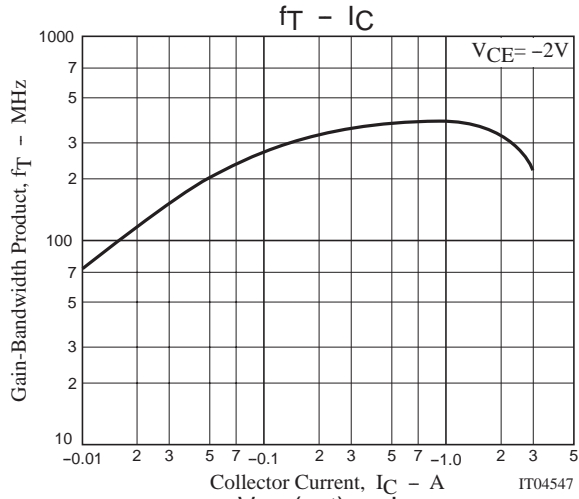
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu A, I_E = 0$	-15			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1mA, R_{BE} = \infty$	-12			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu A, I_C = 0$	-5			V
Turn-On Time	$t_{on}$	See specified Test Circuit.		30		ns
Storage Time	$t_{stg}$	See specified Test Circuit.		90		ns
Fall Time	$t_f$	See specified Test Circuit.		14		ns

## Switching Time Test Circuit



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