



SANYO Semiconductors

## DATA SHEET

# CPH6531

 — PNP Epitaxial Planar Silicon Transistor  

## DC / DC Converter Applications

### Applications

- Relay drivers, lamp drivers, motor drivers, flash.

### Features

- Composite type with two PNP transistors contained in one package facilitating high-density mounting.
- The two chips contained are equivalent to the CPH3116.
- Ultrasmall package permitting applied sets to be small and slim.

### Specifications

#### Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CB0</sub>		-50	V
Collector-to-Emitter Voltage	V <sub>CES</sub>		-50	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>		-50	V
Emitter-to-Base Voltage	V <sub>EBO</sub>		-5	V
Collector Current	I <sub>C</sub>		-1.0	A
Collector Current (Pulse)	I <sub>CP</sub>		-2	A
Base Current	I <sub>B</sub>		-200	mA
Collector Dissipation	P <sub>C</sub>	Mounted on a ceramic board (600mm <sup>2</sup> ×0.8m) 1unit	0.9	W
Total Power Dissipation	P <sub>T</sub>	Mounted on a ceramic board (600mm <sup>2</sup> ×0.8m)	1.1	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> =0A			-0.1	μA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =-4V, I <sub>C</sub> =0A			-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		9		pF

Marking : ES

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# CPH6531

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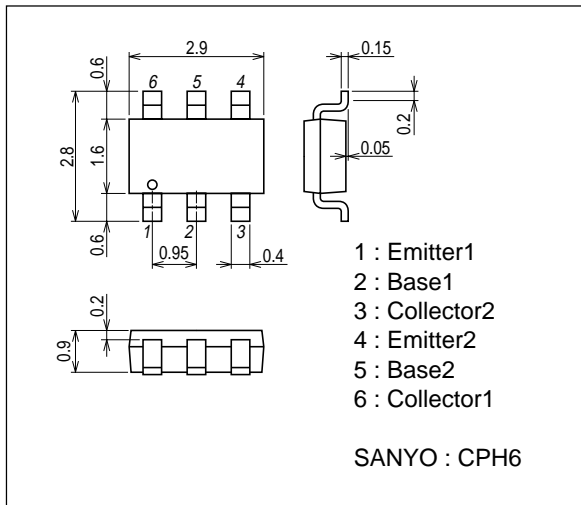
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C = -500\text{mA}, I_B = -10\text{mA}$		-230	-380	mV
	$V_{CE(sat)2}$	$I_C = -300\text{mA}, I_B = -6\text{mA}$		-125	-200	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -500\text{mA}, I_B = -10\text{mA}$		-0.81	-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}, I_E = 0\text{A}$	-50			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C = -100\mu\text{A}, R_{BE} = 0\Omega$	-50			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = -1\text{mA}, R_{BE} = \infty$	-50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = -10\mu\text{A}, I_C = 0\text{A}$	-5			V
Turn-ON Time	$t_{on}$	See specified Test Circuit.		35		ns
Storage Time	$t_{stg}$	See specified Test Circuit.		170		ns
Fall Time	$t_f$	See specified Test Circuit.		30		ns

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

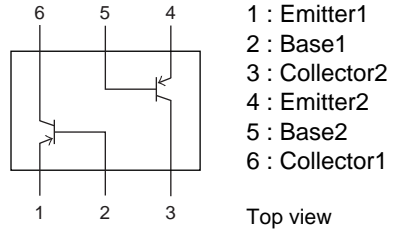
## Package Dimensions

unit : mm (typ)

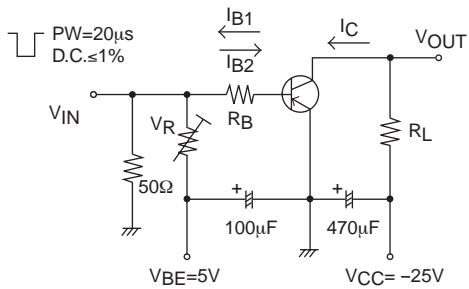
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## Electrical Connection

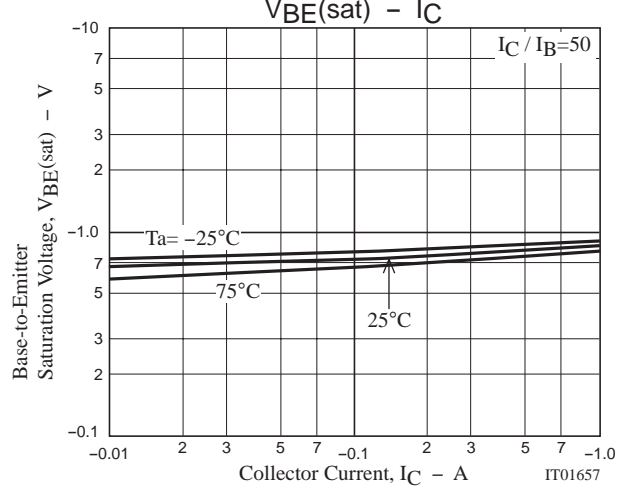
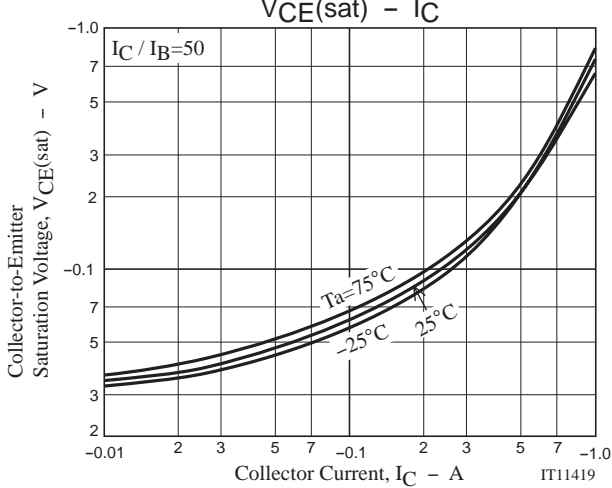
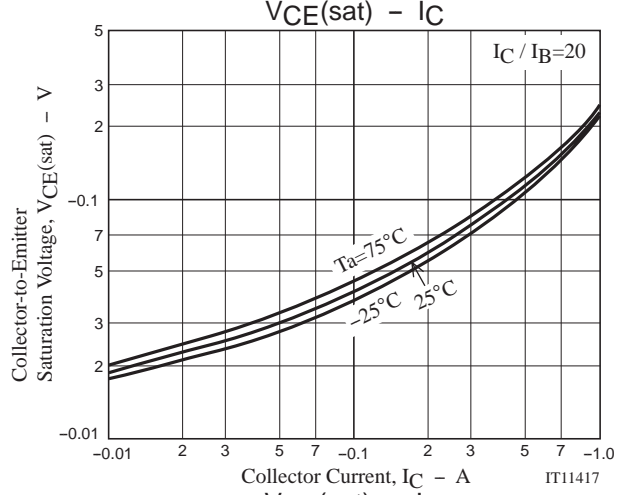
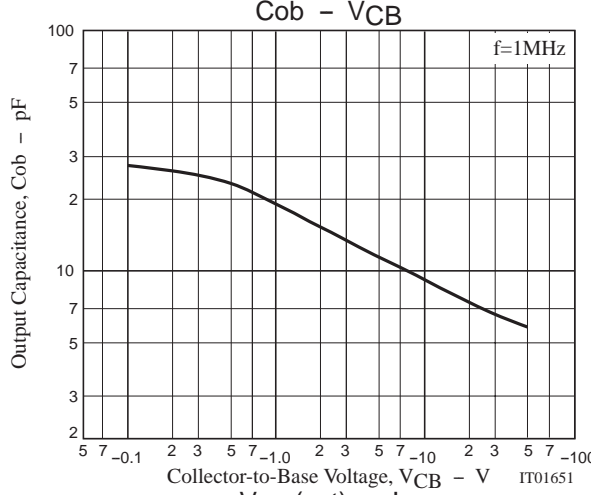
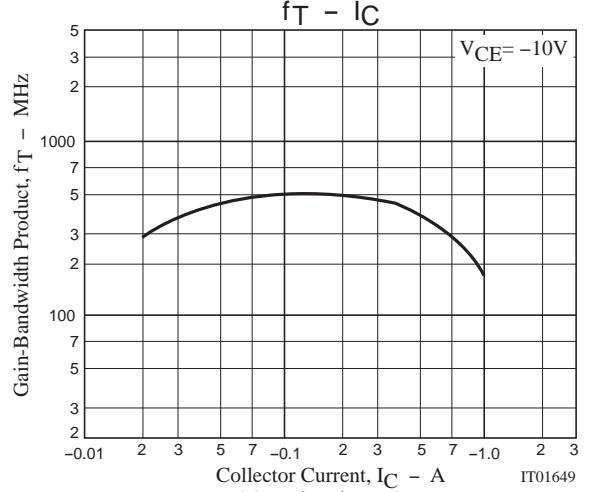
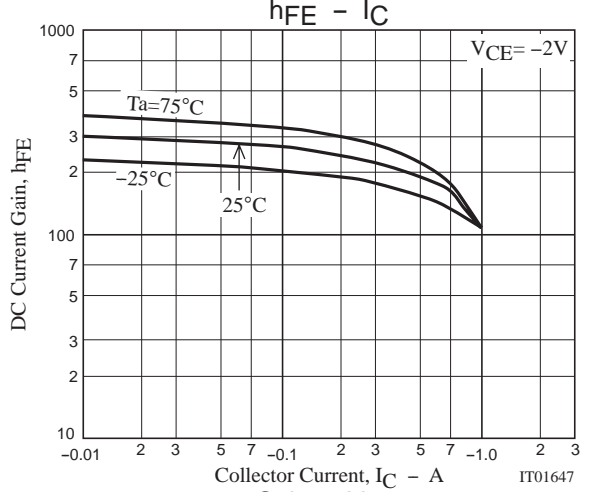
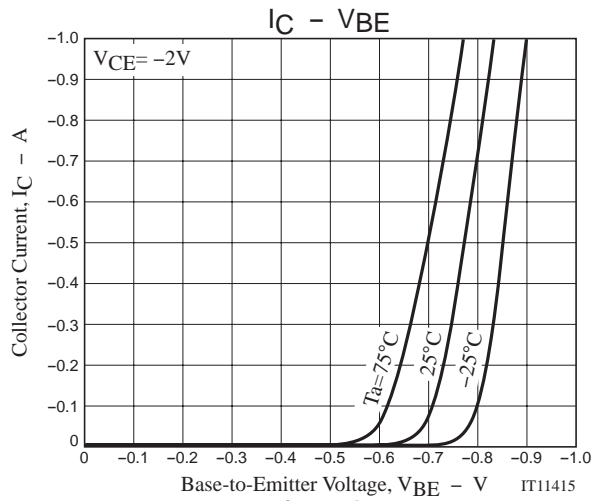
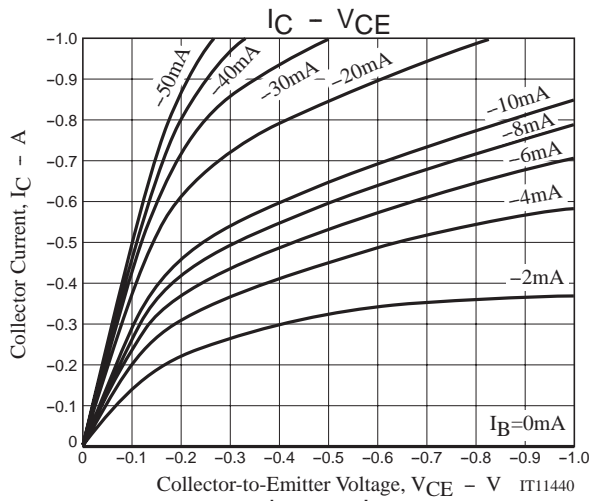


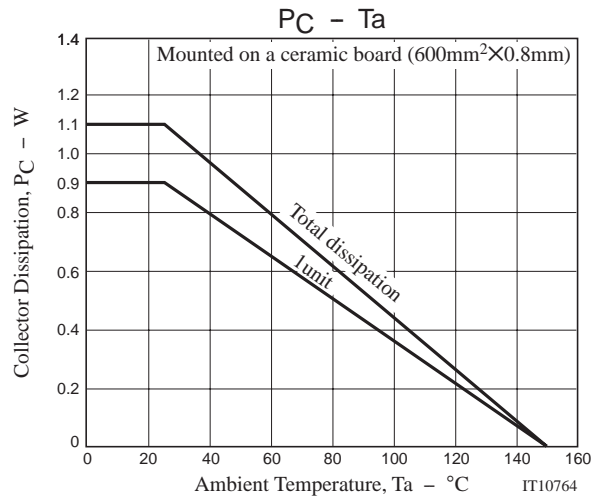
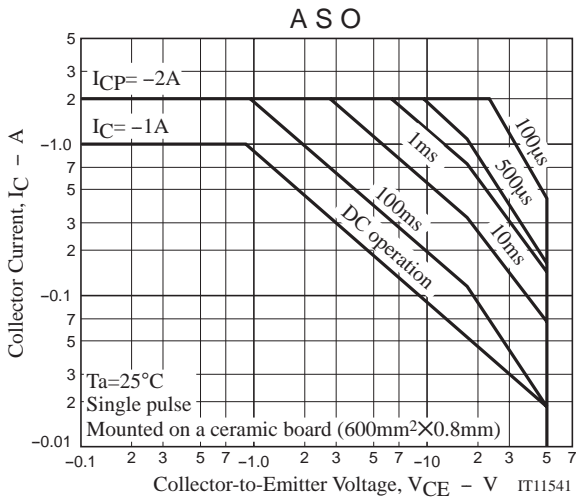
## Switching Time Test Circuit



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

CPH6531





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