



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

CPH5504 — NPN Epitaxial Planar Silicon Transistor

High-Current Switching Applications

Applications

- DC-DC converter, relay drivers, lamp drivers, motor drivers, flash.

Features

- Composite type with 2 NPN transistors in one package facilitating high-density mounting.
- The CPH5504 is composed of 2 chips each equivalent to the CPH3205.
- Ultrasmall package facilitates miniaturization in end products. (mounting height : 0.9mm)

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		100	V
Collector-to-Emitter Voltage	V_{CES}		100	V
Collector-to-Emitter Voltage	V_{CEO}		50	V
Emitter-to-Base Voltage	V_{EBO}		6	V
Collector Current	I_C		3	A
Collector Current (Pulse)	I_{CP}		6	A
Base Current	I_B		600	mA
Collector Dissipation	P_C	Mounted on a ceramic board (600mm ² X0.8mm)	0.9	W
Total Power Dissipation	P_T	Mounted on a ceramic board (600mm ² X0.8mm)	1.2	W
Junction Temperature	T_J		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +15	$^\circ\text{C}$

Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=40\text{V}, I_E=0\text{A}$			1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0\text{A}$			1	μA
DC Current Gain	h_{FE1}	$V_{CE}=2\text{V}, I_C=100\text{mA}$	200		560	
	h_{FE2}	$V_{CE}=2\text{V}, I_C=3\text{A}$	70			
Gain-Bandwidth Product	f_T	$V_{CE}=10\text{V}, I_C=500\text{mA}$		380		MHz
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, f=1\text{MHz}$		13		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=1\text{A}, I_B=50\text{mA}$		80	120	mV
		$I_C=2\text{A}, I_B=100\text{mA}$		140	210	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=2\text{A}, I_B=100\text{mA}$		0.88	1.2	V

Marking : ED

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CPH504

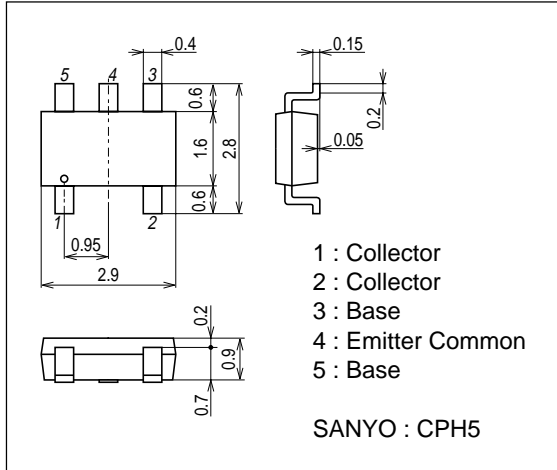
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0A$	100			V
Collector-to-Base Breakdown Voltage	$V_{(BR)CES}$	$I_C=100\mu A, R_{BE}=0\Omega$	100			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0A$	6			V
Turn-ON Time	t_{on}	See specified Test Circuit.		35		ns
Storage Time	t_{stg}	See specified Test Circuit.		300		ns
Fall Time	t_f	See specified Test Circuit.		22		ns

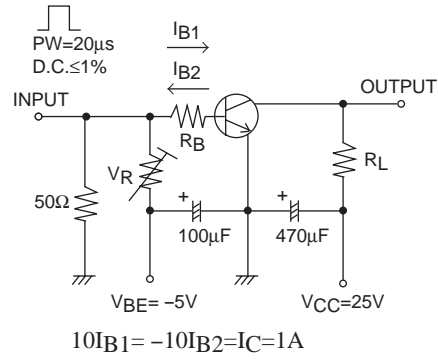
Package Dimensions

unit : mm

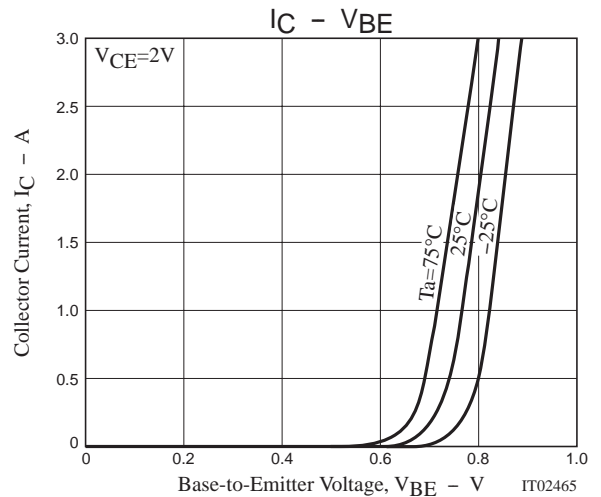
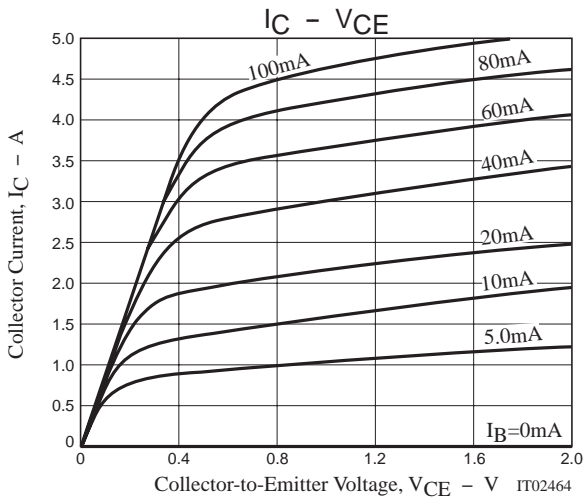
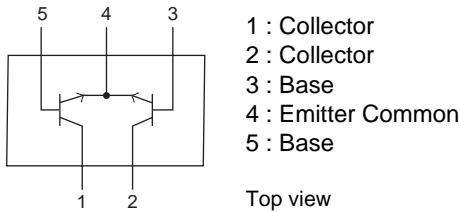
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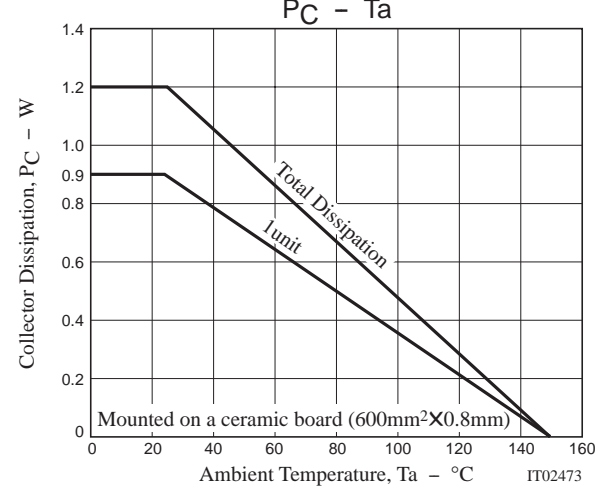
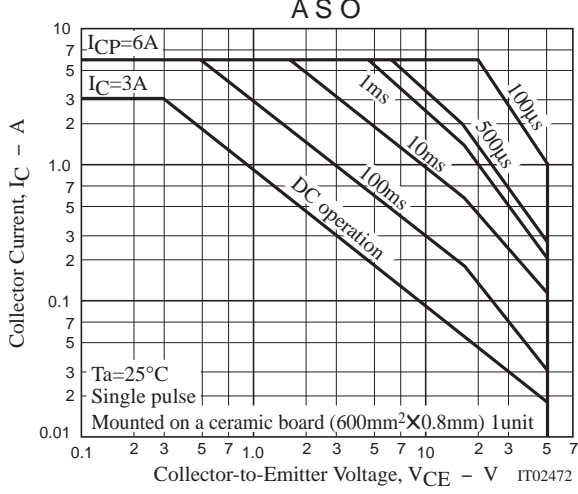
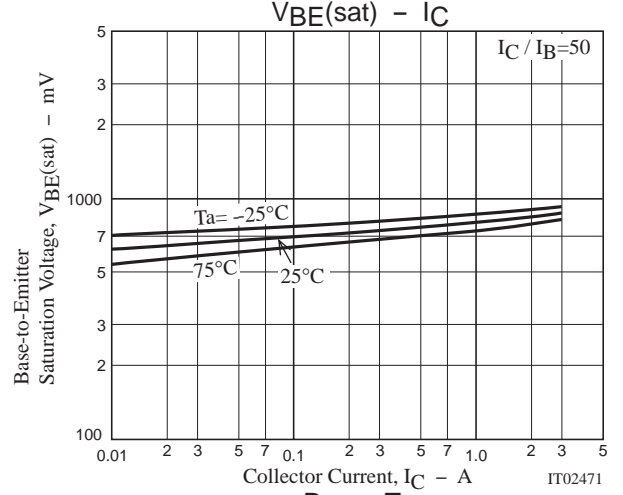
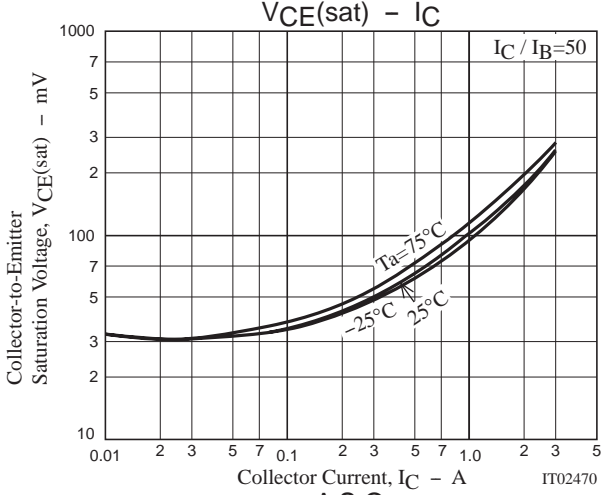
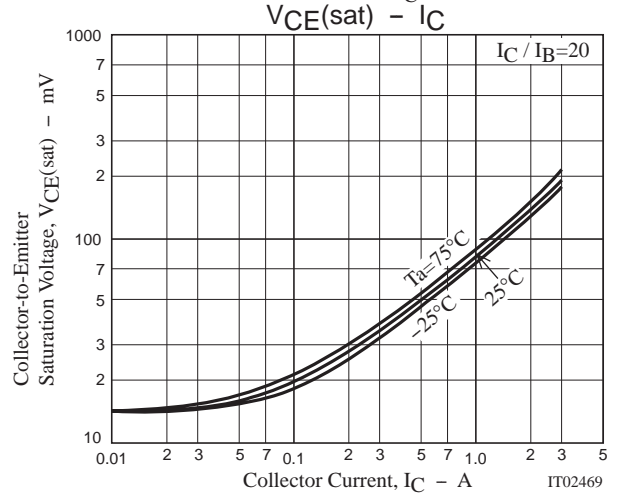
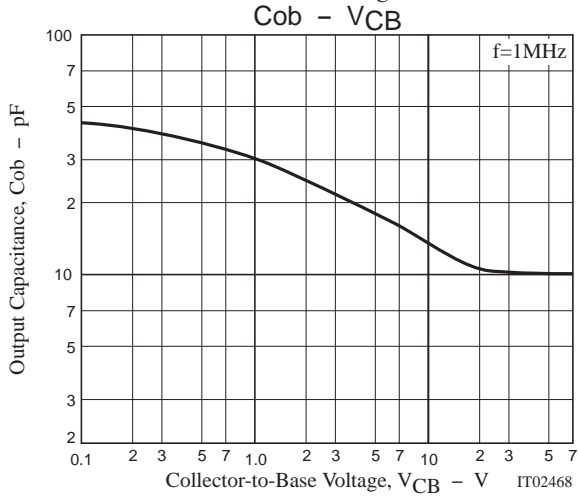
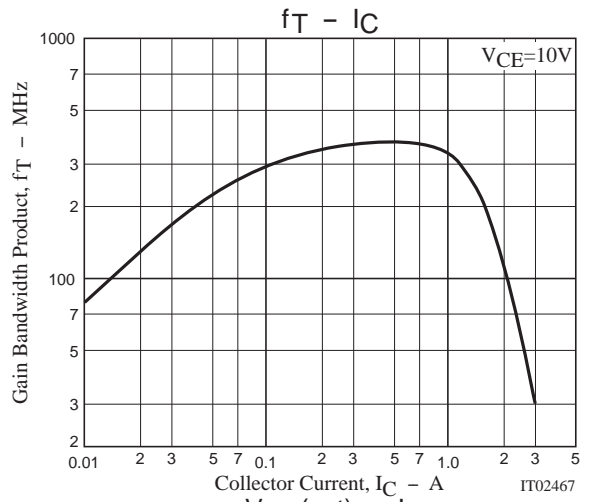
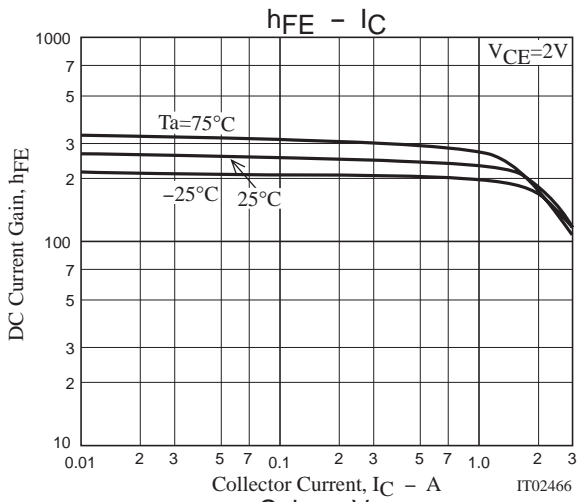
Switching Time Test Circuit

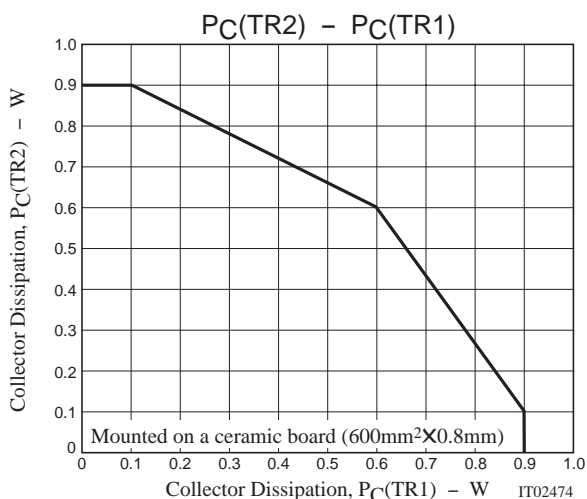


Electrical Connection



CPH5504





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