


SANYO Semiconductors

DATA SHEET

CPH5518 — PNP / NPN Epitaxial Planar Silicon Transistors

High-Current Switching Applications

Applications

- Relay drivers, lamp drivers, motor drivers.

Features

- Composite type with a PNP transistor and an NPN transistor contained in one package, facilitating high-density mounting.
- The CPH5518 consists of two chips encapsulated in a package which are equivalent to the CPH3116 and the CPH3216, respectively.
- Ultrasmall package facilitate miniaturization in end products (0.9mm mounting height).

() : PNP

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CB0}		(-50)80	V
Collector-to-Emitter Voltage	V _{CEO}		(-)50	V
Emitter-to-Base Voltage	V _{EB0}		(-)5	V
Collector Current	I _C		(-)1.0	A
Collector Current (Pulse)	I _{CP}		(-)3.0	A
Base Current	I _B		(-)200	mA
Collector Dissipation	P _C	Mounted on a ceramic board (600mm ² ×0.8mm) 1unit	0.9	W
Total Dissipation	P _C	Mounted on a ceramic board (600mm ² ×0.8mm)	1.2	W
Junction Temperature	T _J		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Marking: EN

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CPH5518

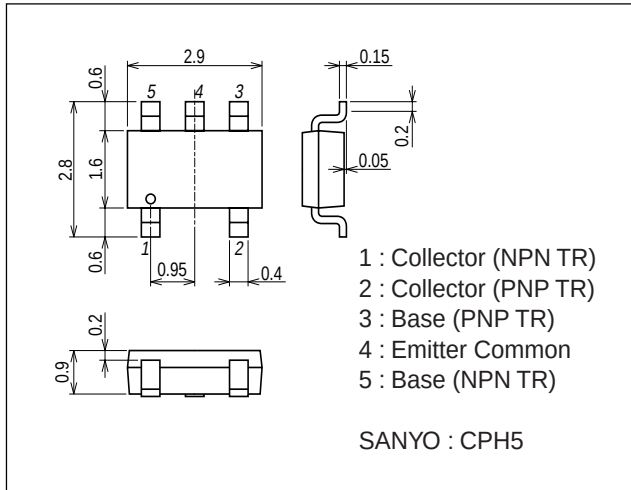
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=(-)40V, I_E=0A$			$(-)0.1$	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)4V, I_C=0A$			$(-)0.1$	μA
DC Current Gain	h_{FE}	$V_{CE}=(-)2V, I_C=(-)100mA$	200		560	
Gain-Bandwidth Product	f_T	$V_{CE}=(-)10V, I_C=(-)300mA$		420		MHz
Output Capacitance	C_{ob}	$V_{CB}=(-)10V, f=1MHz$		(9)6		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)500mA, I_B=(-)10mA$		(-230)	(-380)	mV
				130	190	mV
		$I_C=(-)300A, I_B=(-)6mA$		(-125)	(-200)	mV
				90	135	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	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0A$	(-50)80			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-)50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0A$	(-)5			V
Turn-ON Time	t_{on}	See specified Test Circuit.		(36)38		ns
Storage Time	t_{stg}	See specified Test Circuit.		(173)332		ns
Fall Time	t_f	See specified Test Circuit.		(28)40		ns

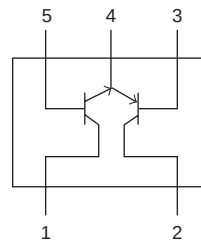
Package Dimensions

unit : mm (typ)

7017A-009

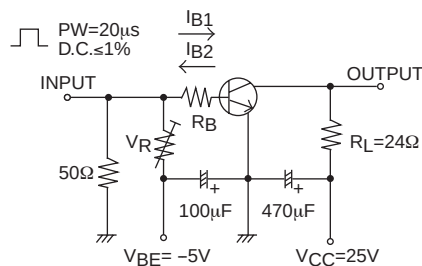


Electical Connection

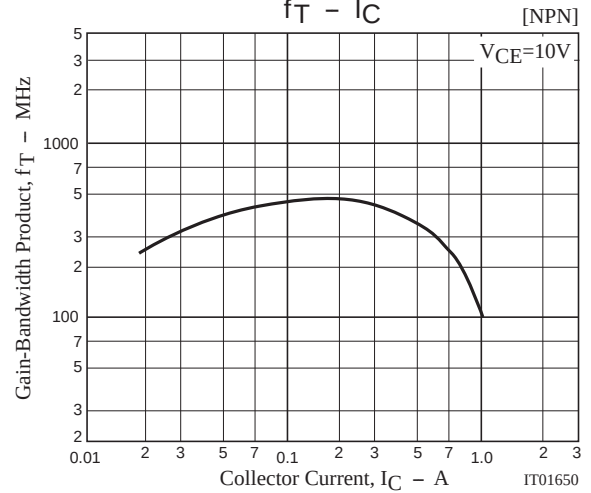
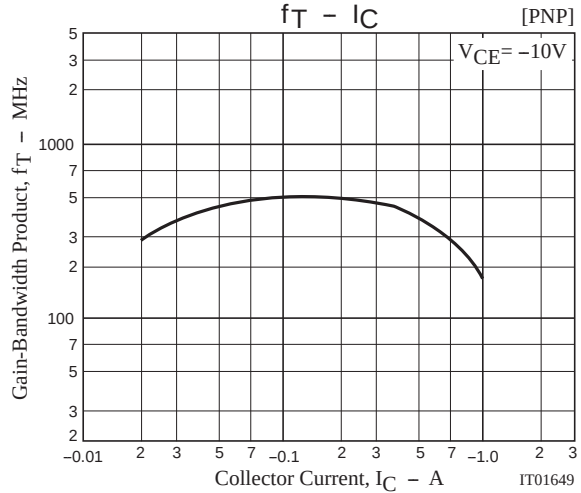
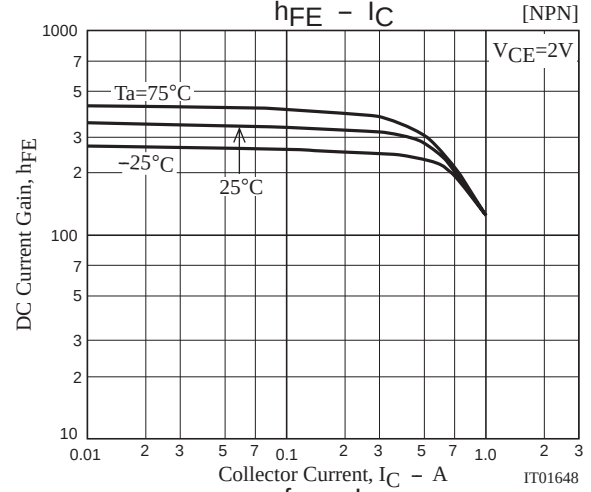
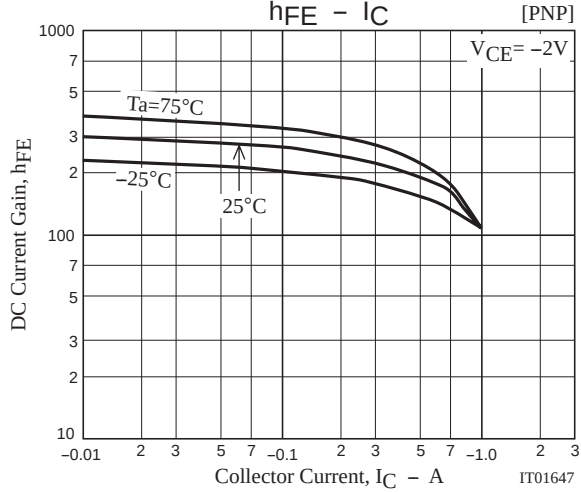
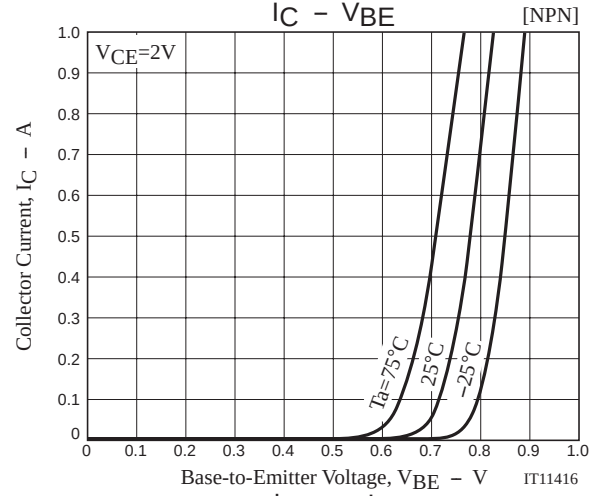
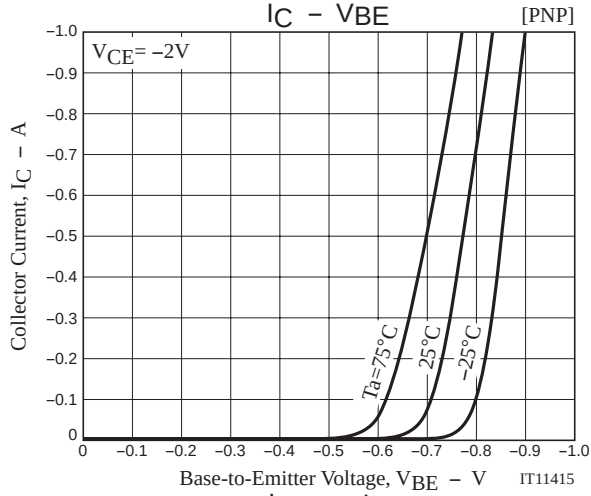
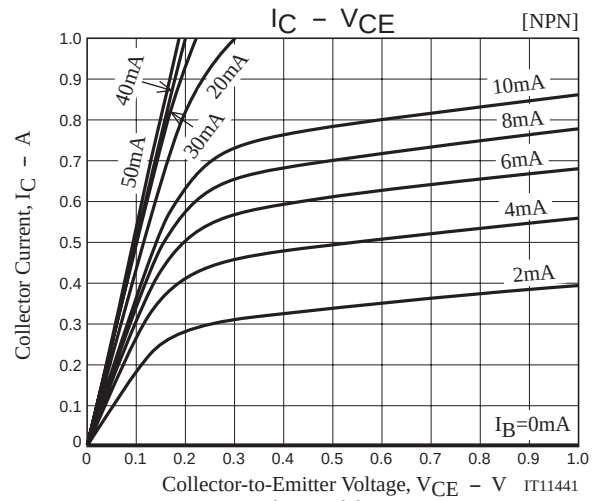
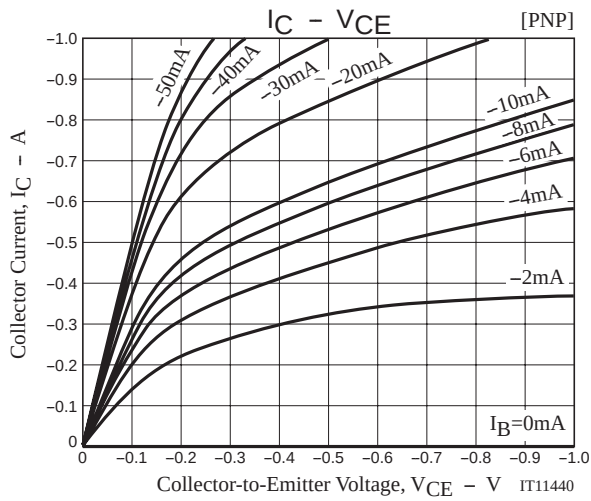


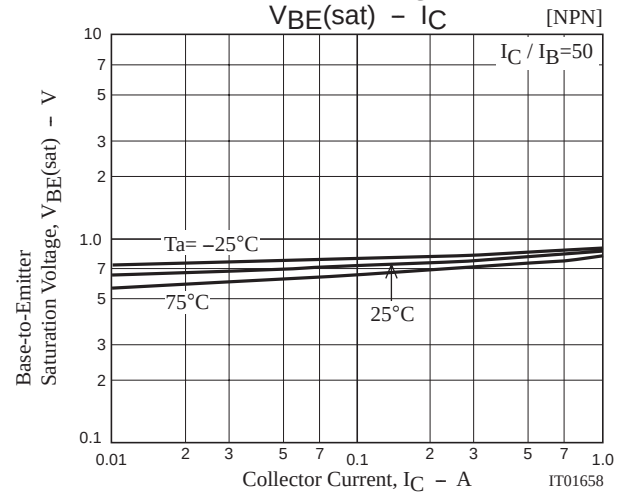
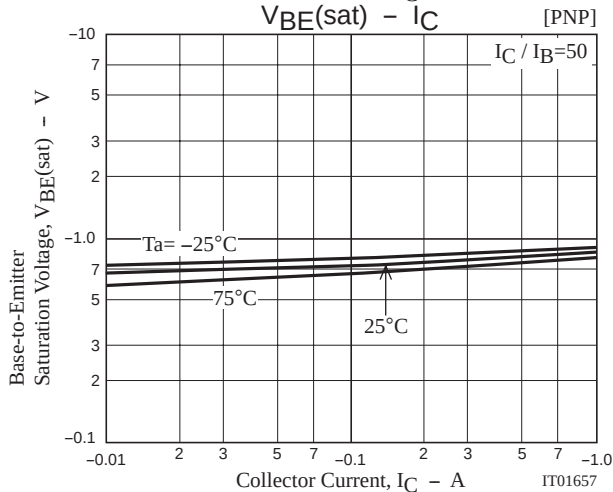
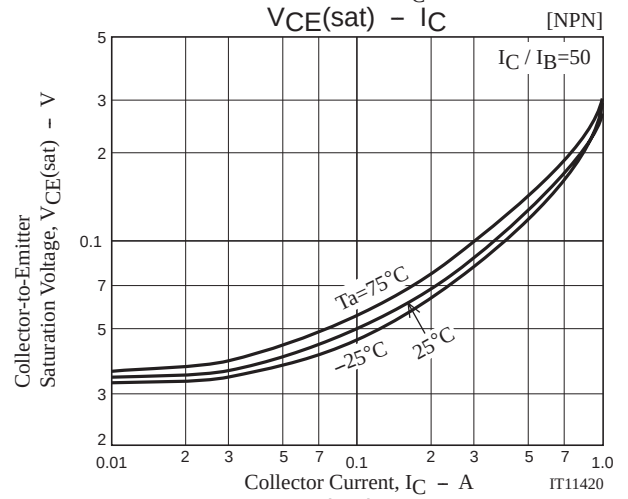
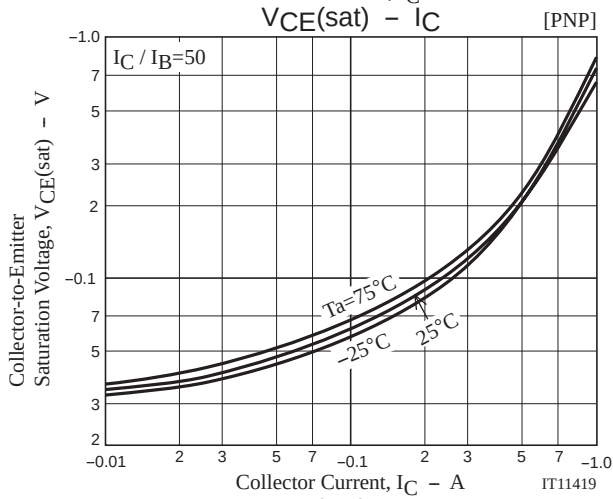
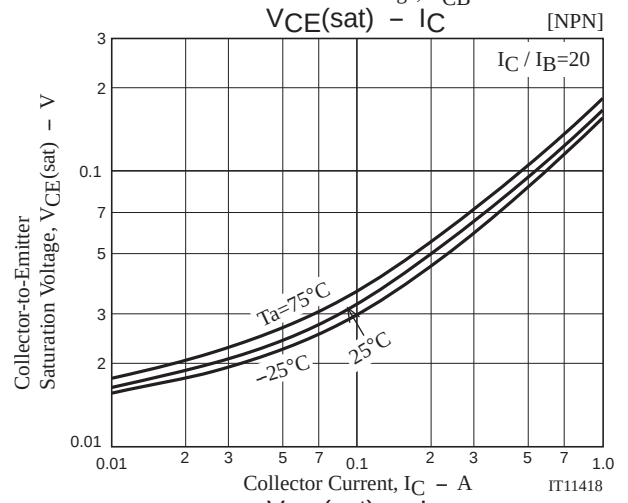
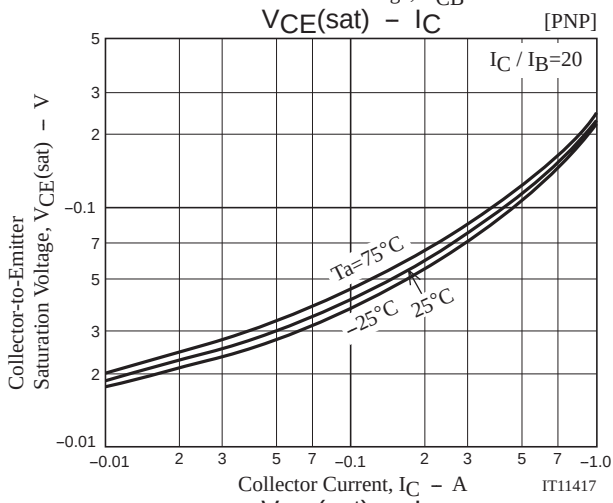
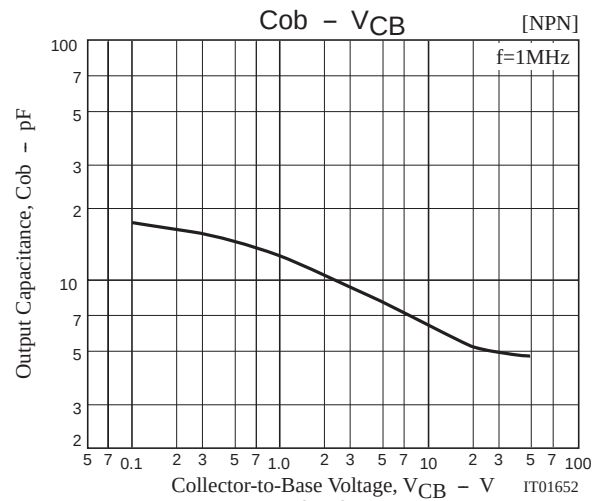
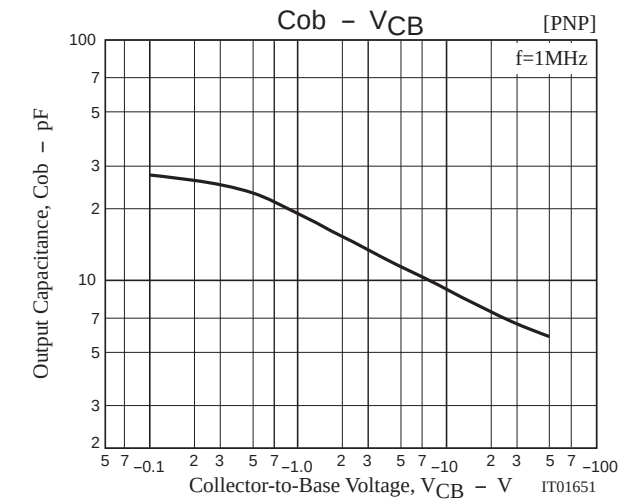
- 1 : Collector (NPN TR)
- 2 : Collector (PNP TR)
- 3 : Base (PNP TR)
- 4 : Emitter Common
- 5 : Base (NPN TR)

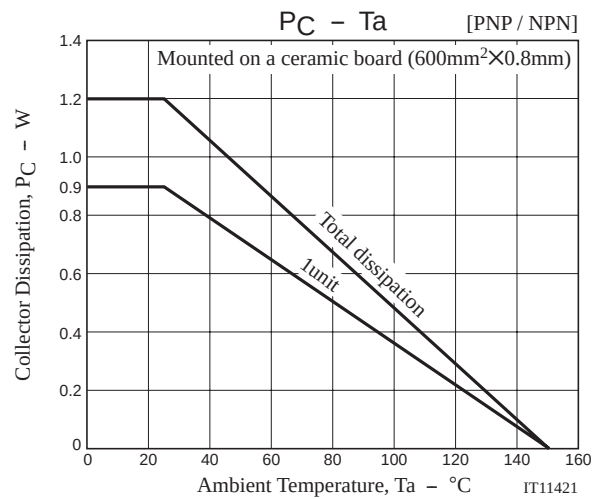
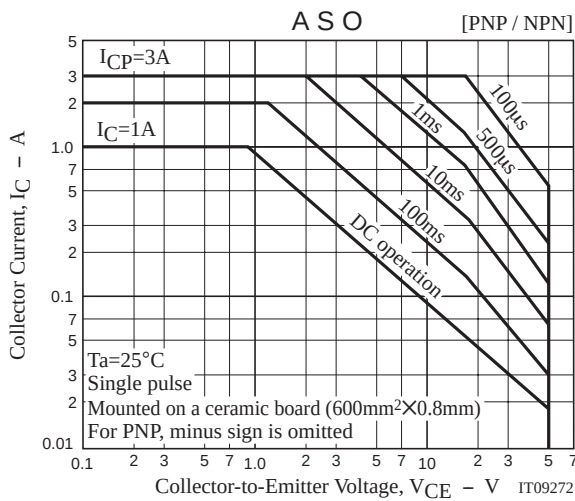
Switching Time Test Circuit



$I_C = 20I_{B1} = -20I_{B2} = 500mA$
(For PNP, the polarity is reversed.)







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