



SANYO Semiconductors

DATA SHEET

CPH5516

 — PNP / NPN Epitaxial Planar Silicon Transistors
High-Current Switching Applications

Applications

- Relay drivers, Lamp drivers, Motor drivers, IGBT gate drive.

Features

- Composite type with a PNP transistor and an NPN transistor contained in one package, facilitating high-density mounting.
- Ultrasmall package facilitate miniaturization in end products. (0.9mm mounting height)

Specifications () : PNP

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CB0}		(-30) 40	V
Collector-to-Emitter Voltage	V _{CEO}		(-) 30	V
Emitter-to-Base Voltage	V _{EBO}		(-) 5	V
Collector Current	I _C		(-) 2	A
Collector Current (Pulse)	I _{CP}	PW≤1s	(-) 6	A
Base Current	I _B		(-) 400	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	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I _{CBO}	V _{CB} =(-) 30V, 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		(440) 400		MHz
Output Capacitance	C _{ob}	V _{CB} =(-) 10V, f=1MHz		(17) 12		pF

Marking : EK

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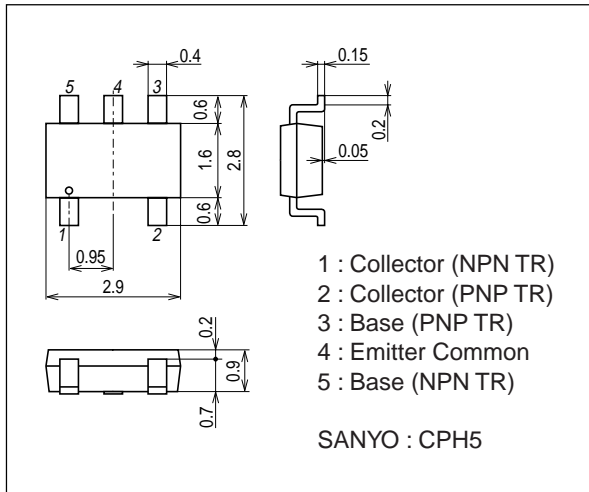
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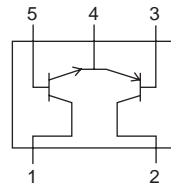
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-) 1.5A, I_B=(-) 75mA$		(-170) 160	(-260) 240	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-) 1.5A, I_B=(-) 75mA$		(-) 0.94	(-) 1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-) 10\mu A, I_E=0A$	(-30) 40			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-) 1mA, R_{BE}=\infty$	(-) 30			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.		(45) 40		ns
Storage Time	t_{stg}	See specified Test Circuit.		(200) 350		ns
Fall Time	t_f	See specified Test Circuit.		(23) 30		ns

Package Dimensions

unit : mm
7017-009



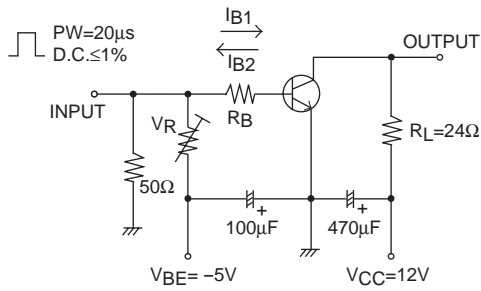
Electrical Connection



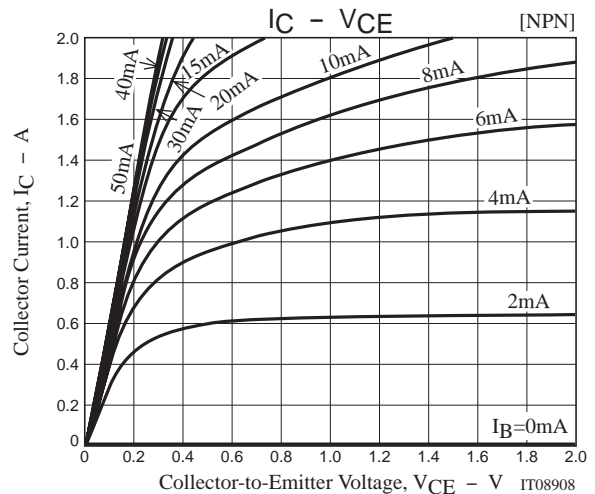
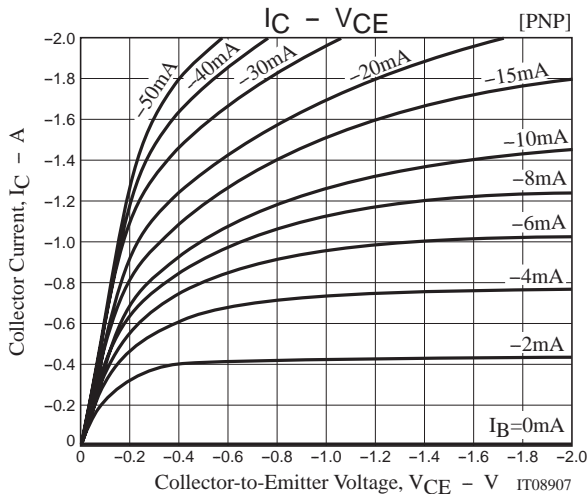
- 1 : Collector (NPN TR)
- 2 : Collector (PNP TR)
- 3 : Base (PNP TR)
- 4 : Emitter Common
- 5 : Base (NPN TR)

Top view

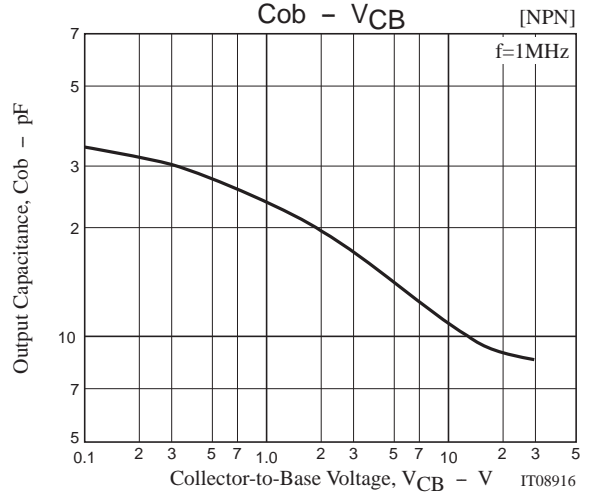
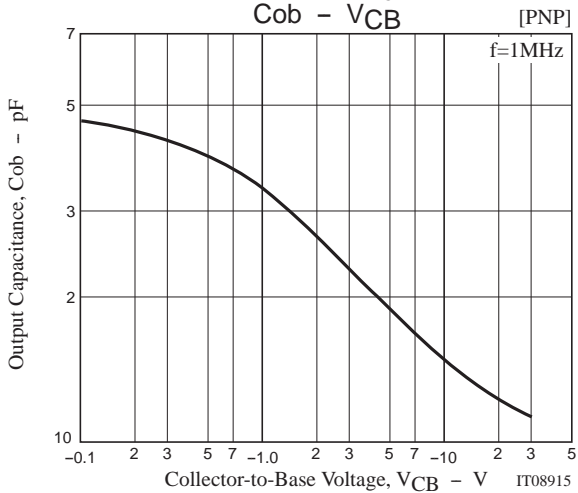
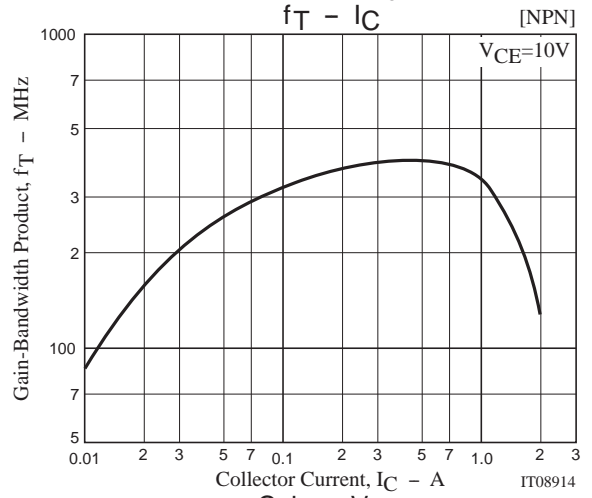
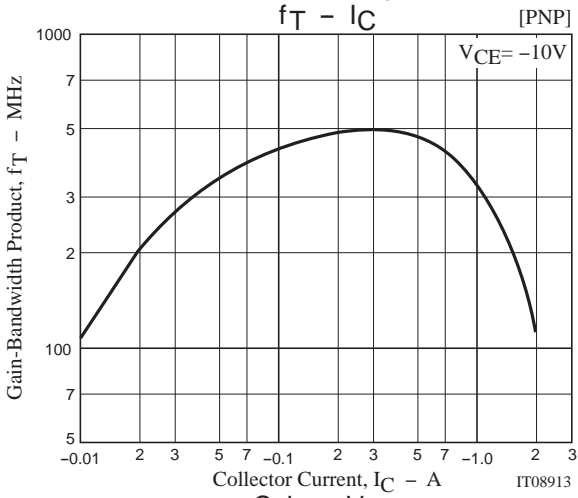
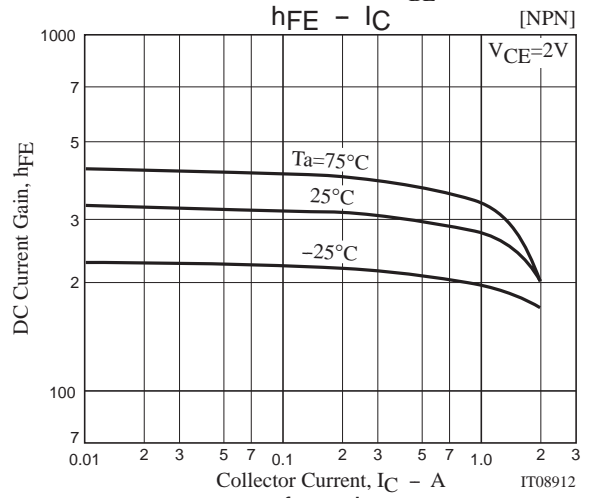
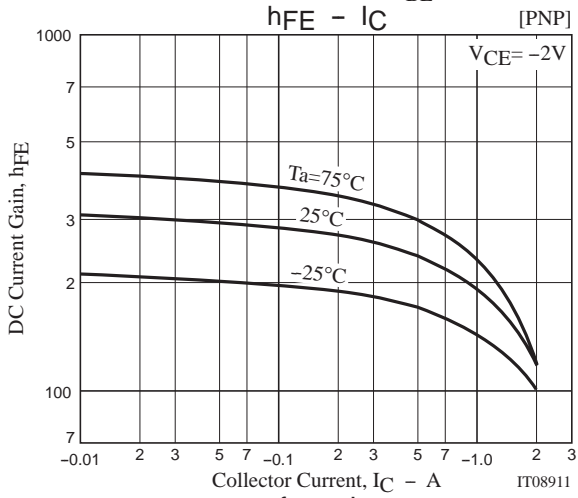
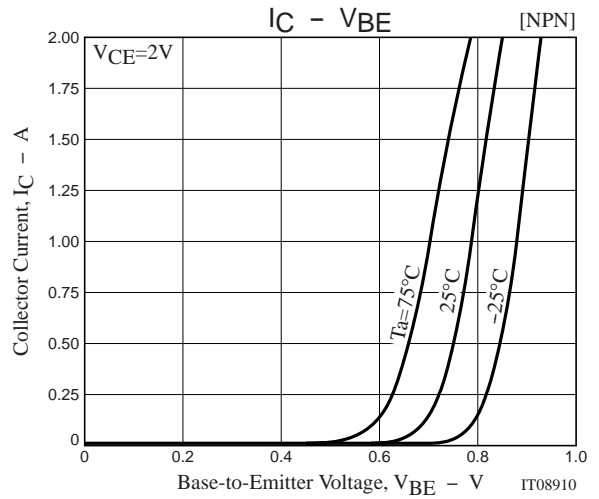
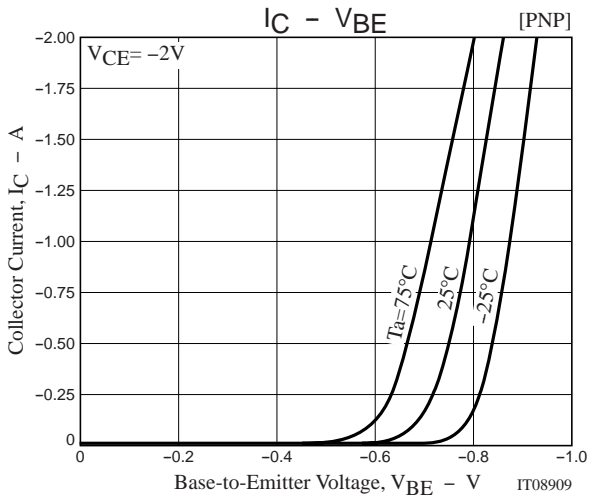
Switching Time Test Circuit



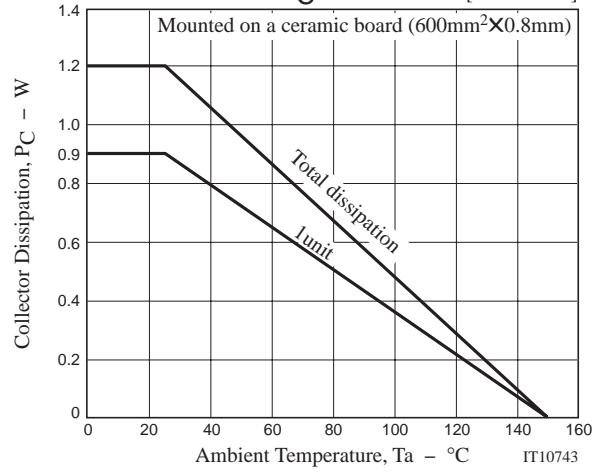
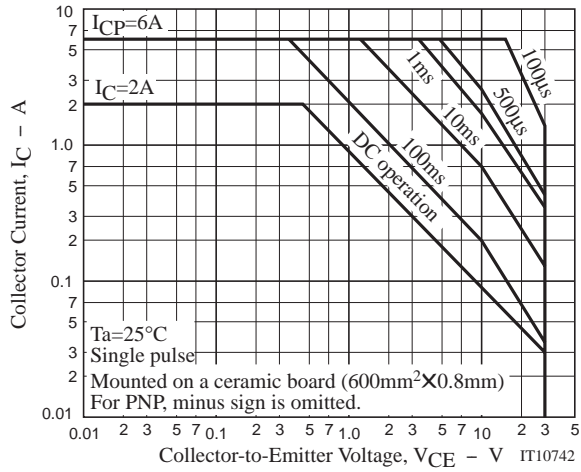
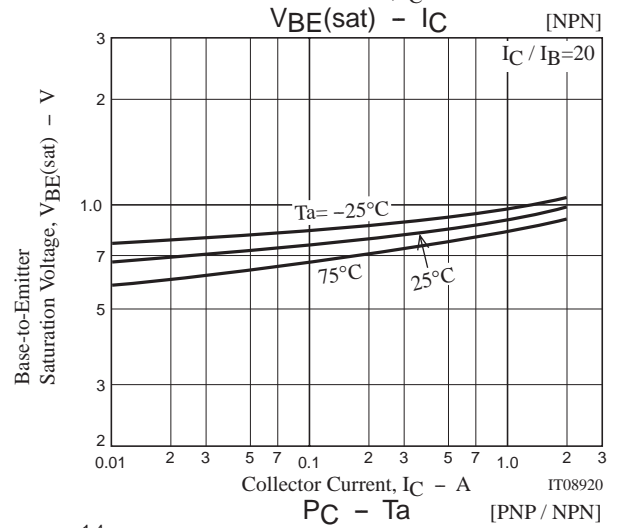
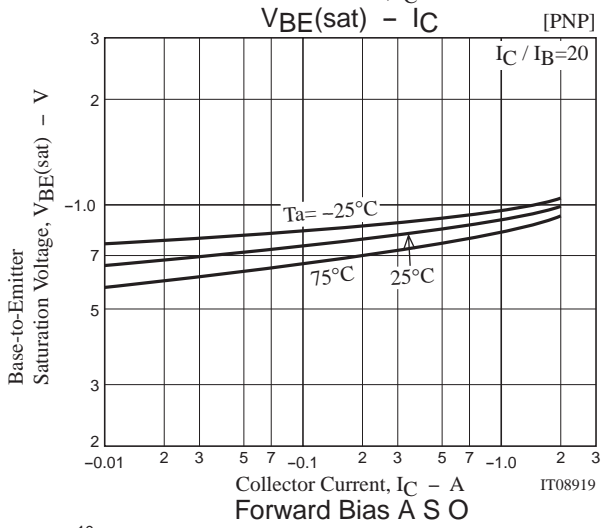
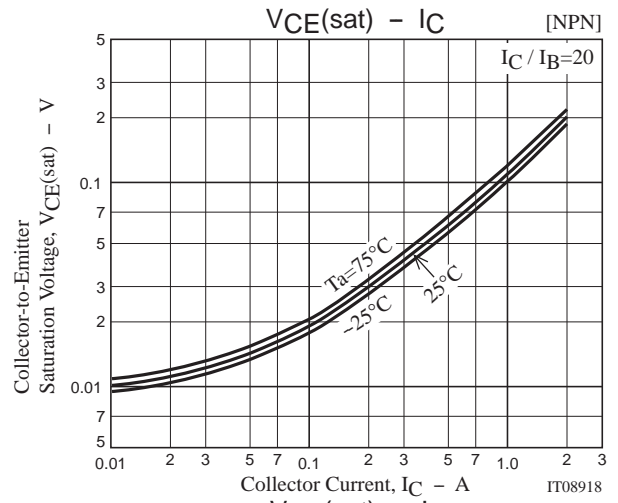
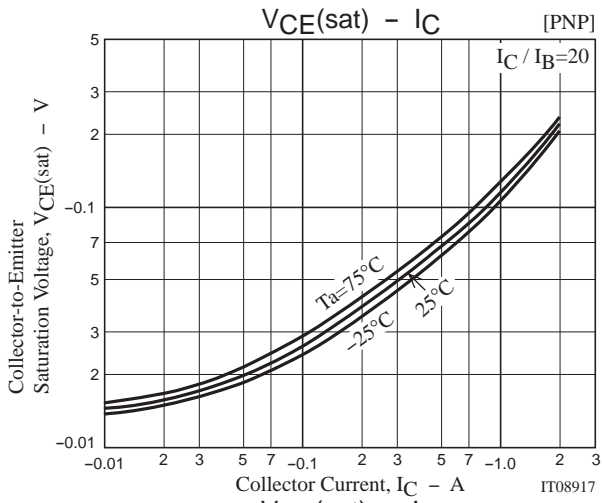
$I_C = 20I_{B1} = -20I_{B2} = 500mA$
For PNP, the polarity is reversed.



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