Ordering number:ENN6479

PNP Epitaxial Planar Silicon Transistor

CPH5505

DC/DC Converter Applications

Applications

· Relay drivers, lamp drivers, motor drivers, strobes.

Features

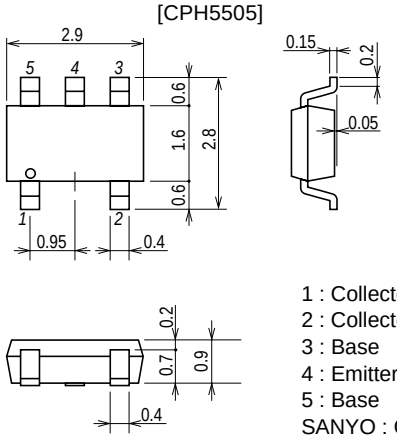
· Composite type with two PNP transistors contained in a single package facilitating high-density mounting.
· The CPH5505 consists of two chips which are equivalent to the CPH3109 encapsulated in a package.
· Ultrasmall package facilitates miniaturization in end products (mounting height : 0.9mm).

Package Dimensions

unit:mm

2182

[CPH5505]



1 : Collector
2 : Collector
3 : Base
4 : Emitter Common
5 : Base
SANYO : CPH5

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		–30	V
Collector-to-Emitter Voltage	V_{CEO}		–30	V
Emitter-to-Base Voltage	V_{EBO}		–5	V
Collector Current	I_C		–3	A
Collector Current (Pulse)	I_{CP}		–5	A
Base Current	I_B		–600	mA
Collector Dissipation	P_C	Mounted on a ceramic board (600mm²×0.8mm)	0.9	W
Total Dissipation	P_T	Mounted on a ceramic board (600mm²×0.8mm)	1.2	W
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–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=0			–0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=–4V, I_C=0			–0.1	μA
DC Current Gain	h_{FE}	V_{CE}=–2V, I_C=–500mA	200		560	
Gain-Bandwidth Product	f_T	V_{CE}=–10V, I_C=–500mA		380		MHz
Output Capacitance	Cob	V_{CB}=–10V, f=1MHz		25		pF

Marking CPH5505 : EE

Continued on next page.

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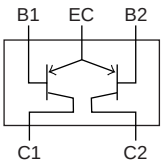
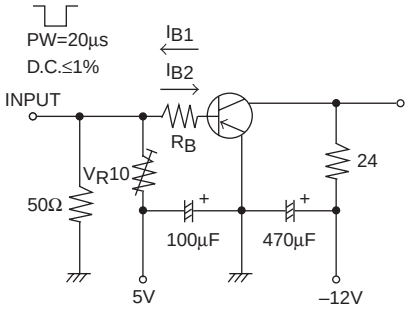
Continued from preceding page.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)1	I_C=–1.5A, I_B=–30mA		–155	–230	mV
	V_{CE}(sat)2	I_C=–1.5A, I_B=–75mA		–105	–155	mV
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C=–1.5A, I_B=–30mA		–0.83	–1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=–10μA, I_E=0	–30			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=–1mA, R_{BE}=∞	–30			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_C=–10μA, I_C=0	–5			V
Turn-ON Time	t_{on}	See specified Test Circuit.		50		ns
Storage Time	t_{stg}	See specified Test Circuit.		270		ns
Turn-OFF Time	t_f	See specified Test Circuit.		25		ns

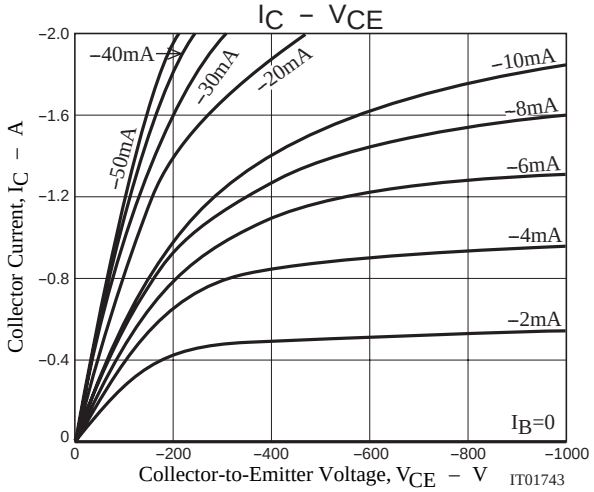
Electrical Connection

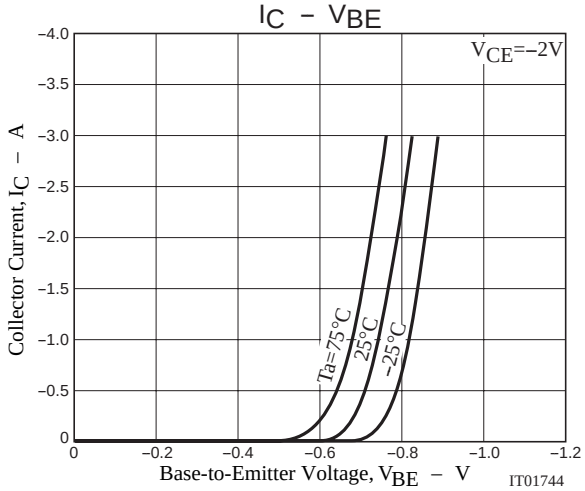


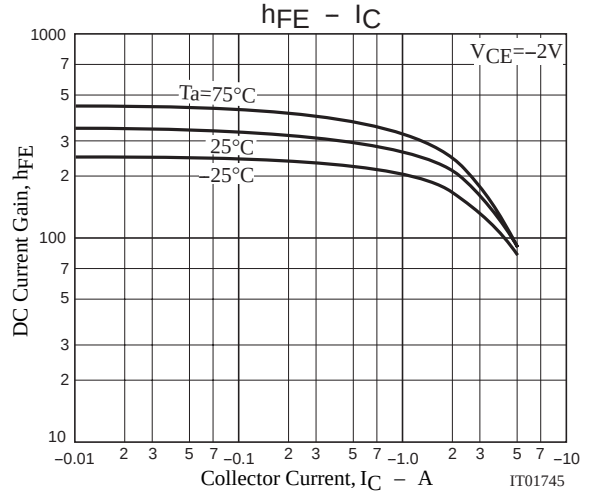
Switching Time Test Circuit

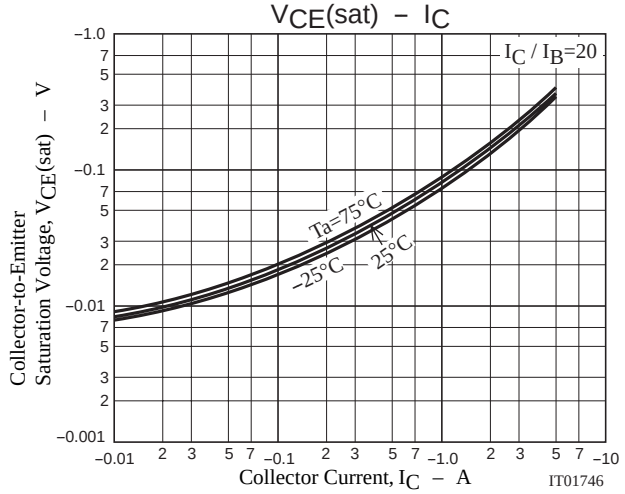


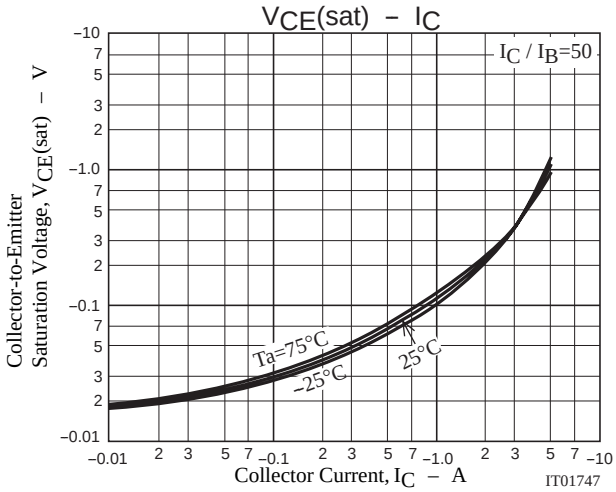
$-20I_{B1}=20I_{B2}=I_C=-500mA$

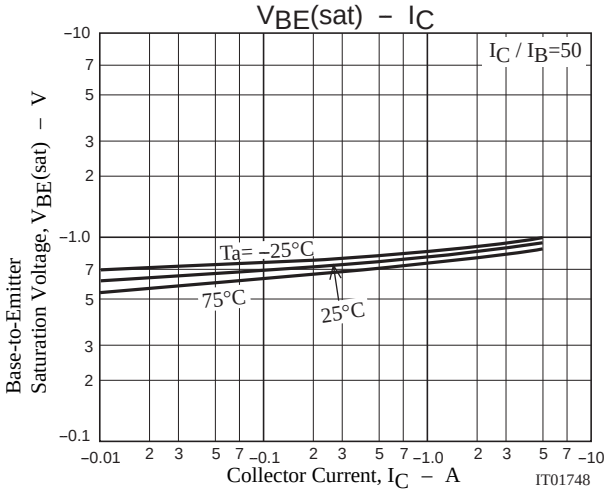


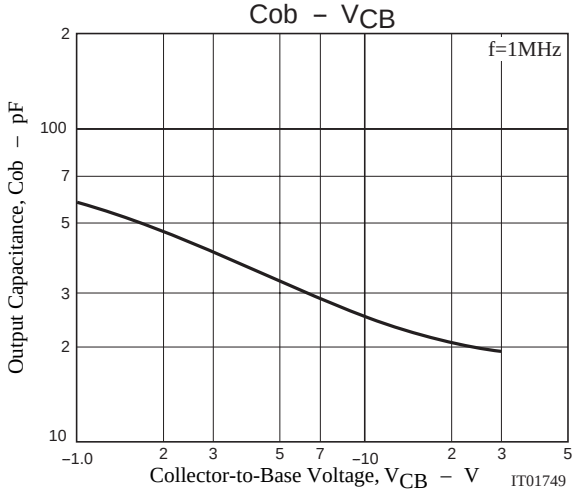


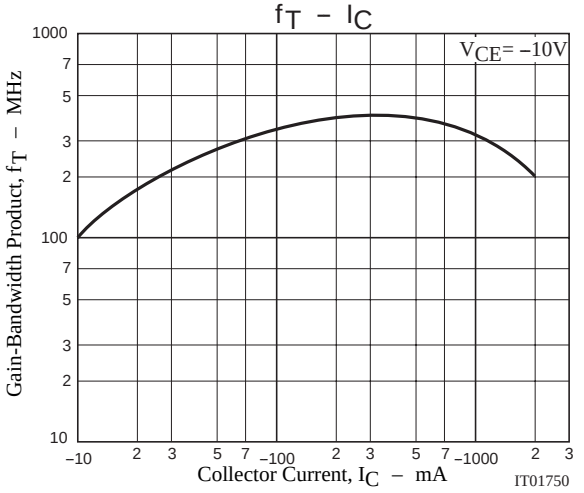


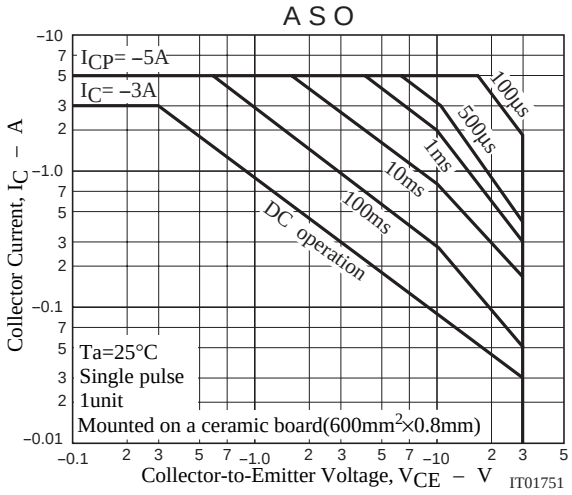


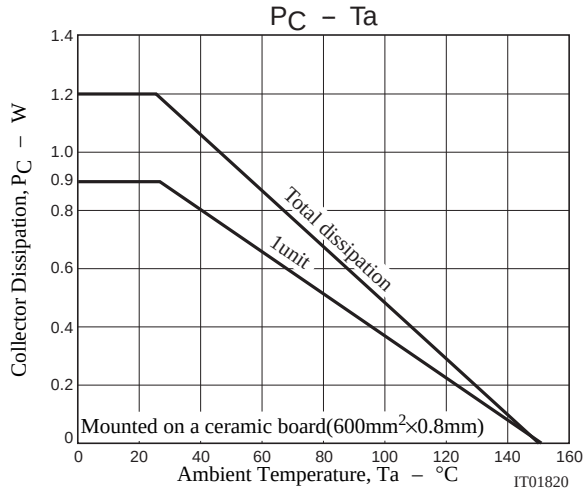

VCE(sat) – IC
IC / IB=50
Ta=75°C
25°C
–25°C
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A
IT01747

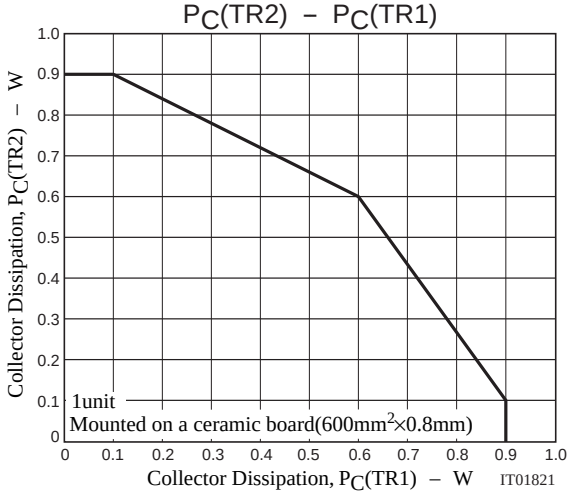

VBE(sat) – IC
IC / IB=50
Ta= –25°C
75°C
25°C
Base-to-Emitter Saturation Voltage, VBE(sat) – V
Collector Current, IC – A
IT01748


Cob – VCB
f=1MHz
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V
IT01749


fT – IC
VCE= –10V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – mA
IT01750


A S O
ICP= –5A
IC= –3A
100µs
500µs
1ms
10ms
100ms
DC operation
Ta=25°C
Single pulse
1unit
Mounted on a ceramic board(600mm2×0.8mm)
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V
IT01751


PC – Ta
Total dissipation
1unit
Mounted on a ceramic board(600mm2×0.8mm)
Collector Dissipation, PC – W
Ambient Temperature, Ta – °C
IT01820


PC(TR2) – PC(TR1)
1unit
Mounted on a ceramic board(600mm2×0.8mm)
Collector Dissipation, PC(TR2) – W
Collector Dissipation, PC(TR1) – W
IT01821