Ordering number : ENN6005A

SANYO Semiconductors
DATA SHEET

CPH3106 — PNP Epitaxial Planar Silicon Transistor
DC / DC Converter Applications

Applications

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

Features

- Adoption of MBIT processes.
- High current capacitance.
- Low collector-to-emitter saturation voltage.
- High-speed switching.
- Ultrasmall package facilitates miniaturization in end products (mounting height : 0.9mm).
- High allowable power dissipation.

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		-15	V
Collector-to-Emitter Voltage	V_{CEO}		-12	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 (600mm^2×0.8mm)	0.9	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}=-12V, 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}=-2V, I_C=-500mA		280		MHz
Output Capacitance	Cob	V_{CB}=-10V, f=1MHz		36		pF

Marking : AF

Continued on next page.

SANYO Electric Co.,Ltd. Semiconductor Company
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

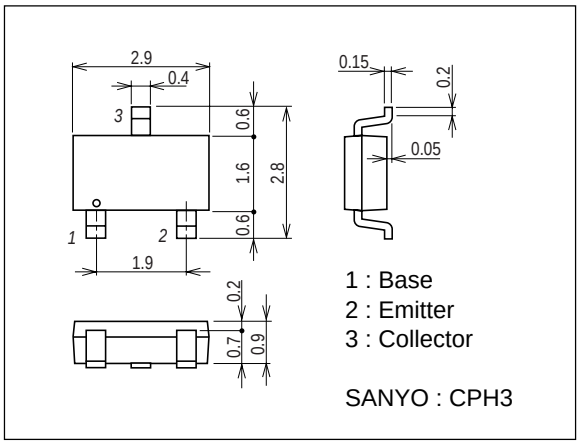
Continued from preceding page.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C=-1.5A, I_B=-30mA		-110	-165	mV
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C=-1.5A, I_B=-30mA		-0.85	-1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=-10μA, I_E=0	-15			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=-1mA, R_{BE}=∞	-12			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=-10μA, I_C=0	-5			V
Turn-ON Time	t_{on}	See specified test circuit.		30		ns
Storage Time	t_{stg}	See specified test circuit.		90		ns
Fall Time	t_f	See specified test circuit.		10		ns

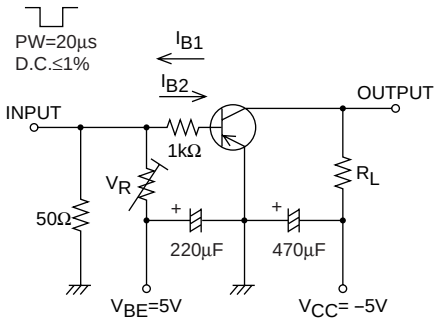
Package Dimensions

unit : mm

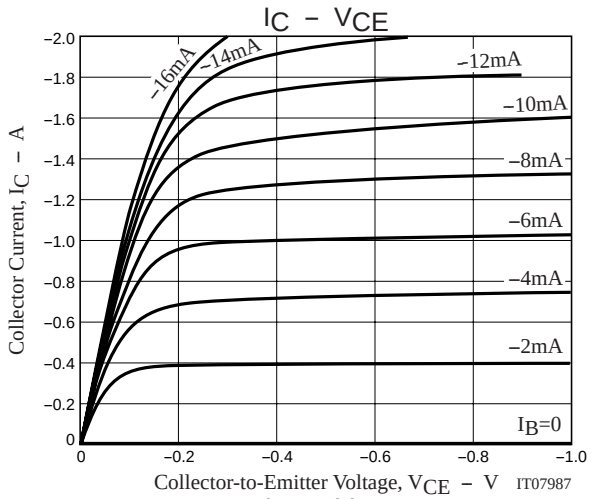
2150A

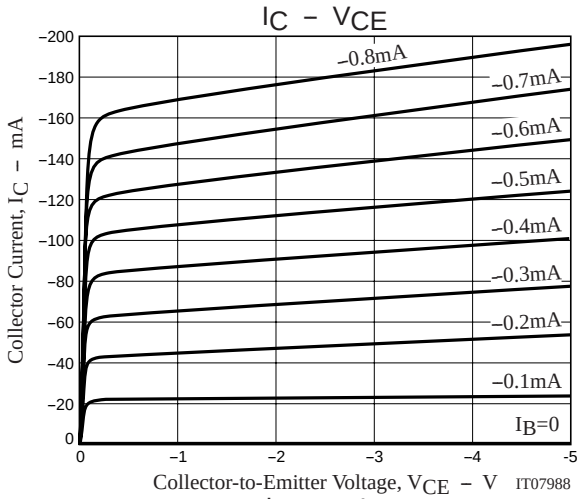


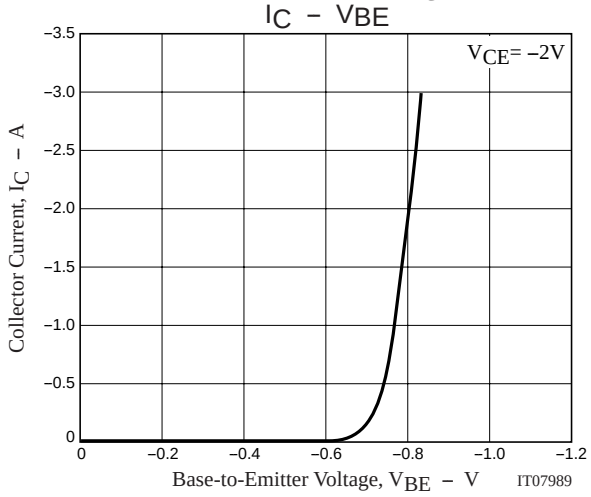
Switching Time Test Circuit

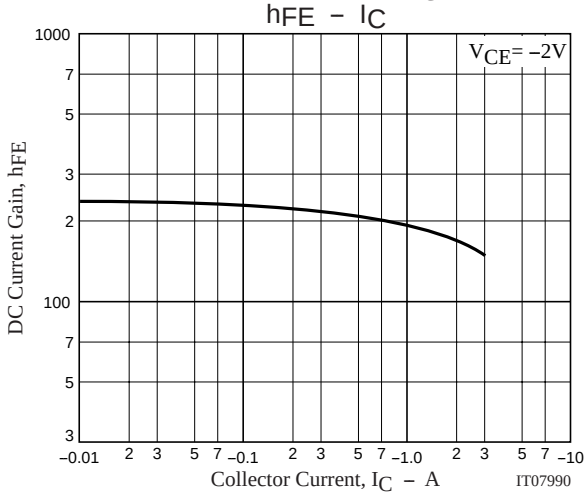


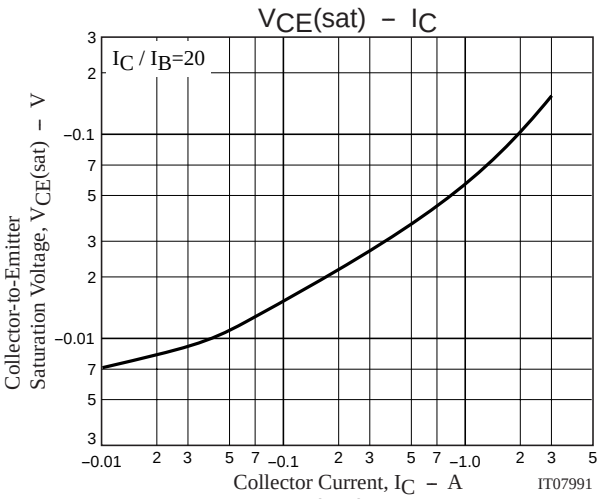
$-20I_{B1}=20I_{B2}=I_C=-1.5A$

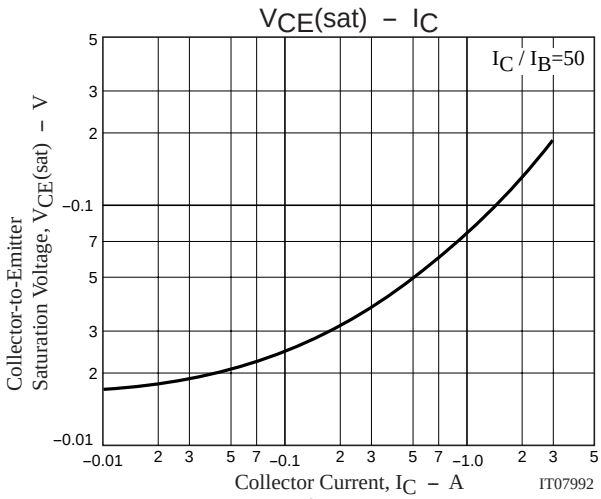


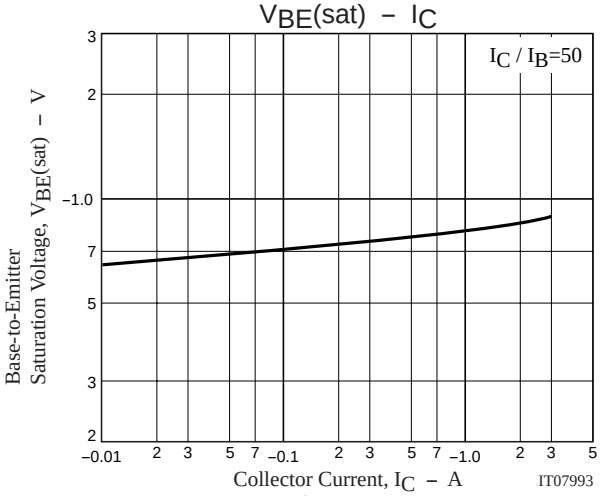


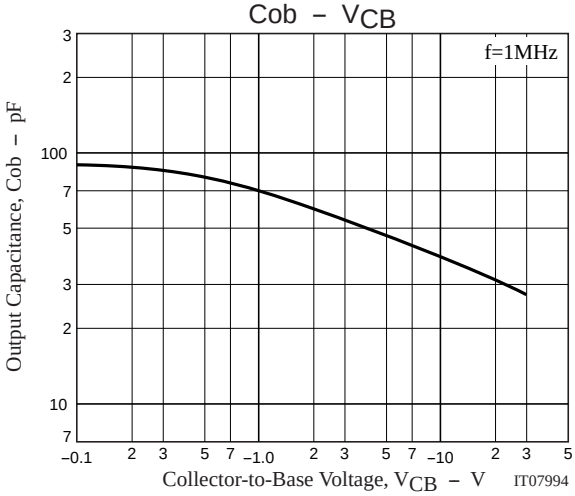


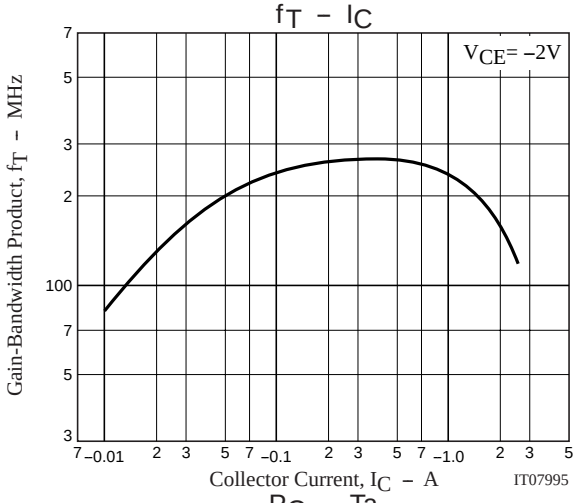


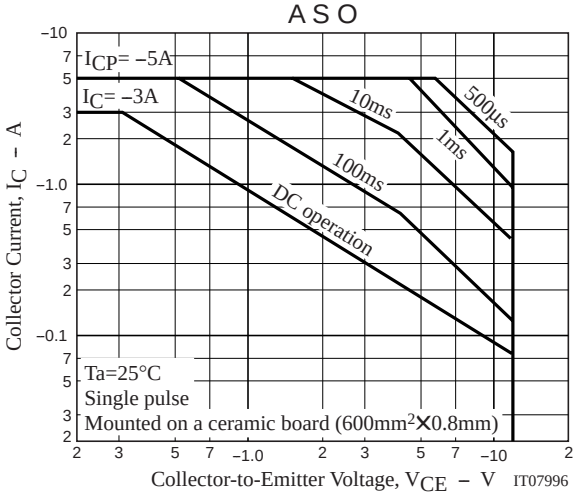

VCE(sat) – IC
IC / IB=20
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A
IT07991

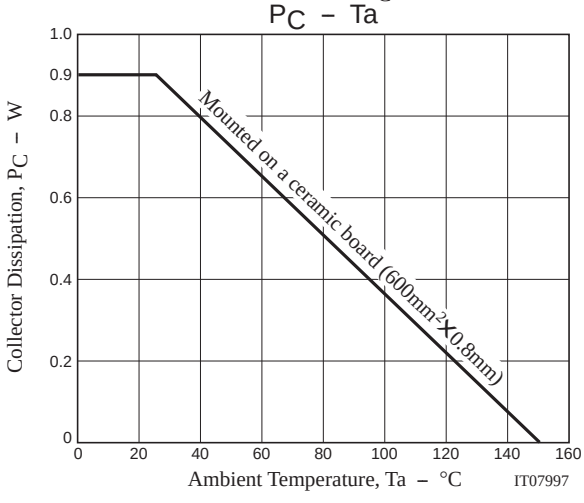

VCE(sat) – IC
IC / IB=50
Collector-to-Emitter Saturation Voltage, VCE(sat) – V
Collector Current, IC – A
IT07992


VBE(sat) – IC
IC / IB=50
Base-to-Emitter Saturation Voltage, VBE(sat) – V
Collector Current, IC – A
IT07993


Cob – VCB
f=1MHz
Output Capacitance, Cob – pF
Collector-to-Base Voltage, VCB – V
IT07994


fT – IC
VCE= –2V
Gain-Bandwidth Product, fT – MHz
Collector Current, IC – A
IT07995


ASO
ICP= –5A
IC= –3A
10ms
500µs
1ms
100ms
DC operation
Ta=25°C
Single pulse
Mounted on a ceramic board (600mm2×0.8mm)
Collector Current, IC – A
Collector-to-Emitter Voltage, VCE – V
IT07996


PC – Ta
Mounted on a ceramic board (600mm2×0.8mm)
Collector Dissipation, PC – W
Ambient Temperature, Ta – °C
IT07997