



SANYO Semiconductors

DATA SHEET

CPH3114 / CPH3214 — PNP / NPN Epitaxial Planar Silicon Transistors DC / DC Converter Applications

Applications

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

Features

- Adoption of MBIT processes.
- Large 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.

() : CPH3114

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CB0}		(-)15	V
Collector-to-Emitter Voltage	V _{CEO}		(-)15	V
Emitter-to-Base Voltage	V _{EB0}		(-)5	V
Collector Current	I _C		(-)1.5	A
Collector Current (Pulse)	I _{CP}		(-)3	A
Base Current	I _B		(-)300	mA
Collector Dissipation	P _C	Mounted on a ceramic board (600mm ² X0.8mm)	0.9	mW
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} =(-)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 =(-)100mA	200		560	

Marking : CPH3114 : AP, CPH3214 : CP

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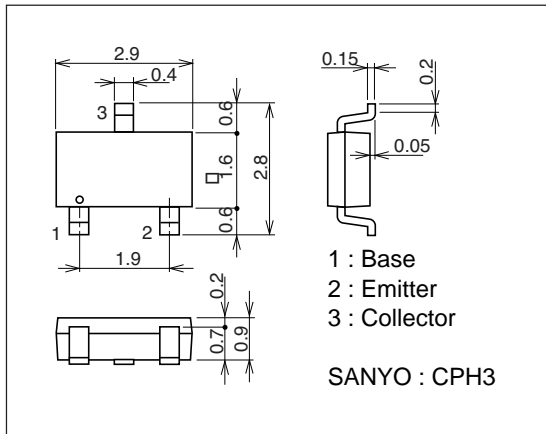
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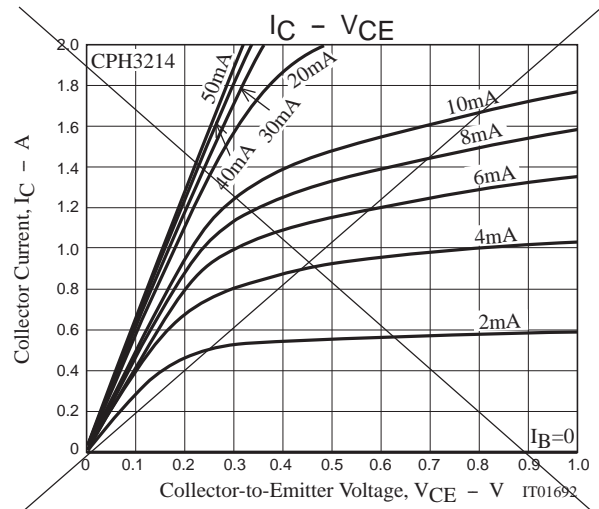
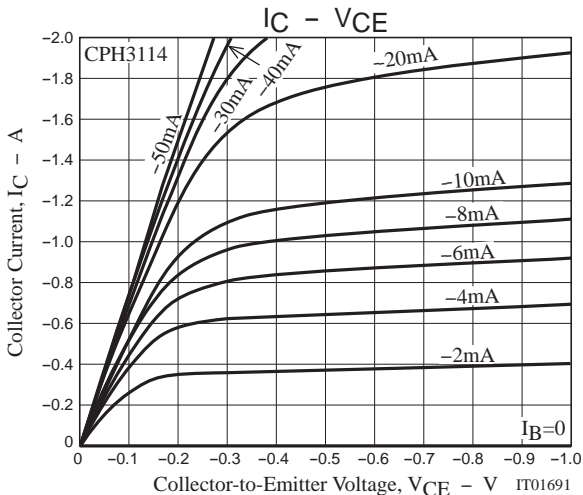
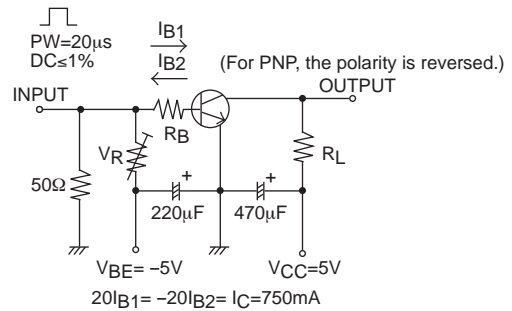
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gain-Bandwidth Product	f_T	$V_{CE}=(-)2V, I_C=(-)300mA$		(350)		MHz
				450		MHz
Output Capacitance	C_{ob}	$V_{CB}=(-)10V, f=1MHz$		(17)		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)750mA, I_B=(-)15mA$		(-120)	(-180)	mV
				130	200	mV
		$I_C=(-)1.5mA, I_B=(-)30mA$		(-210)	(-320)	mV
				240	360	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)750mA, I_B=(-)15mA$		(-0.85)	(-1.2)	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0$		(-15)		V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$		(-15)		V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0$		(-5)		V
Turn-ON Time	t_{on}	See specified test circuit.		(50)		ns
				40		
Storage Time	t_{stg}	See specified test circuit.		(90)		ns
				180		ns
Fall Time	t_f	See specified test circuit.		(15)		ns
				20		

Package Dimensions

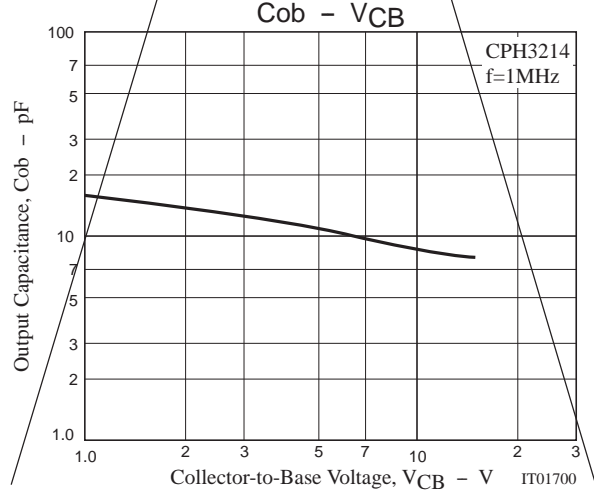
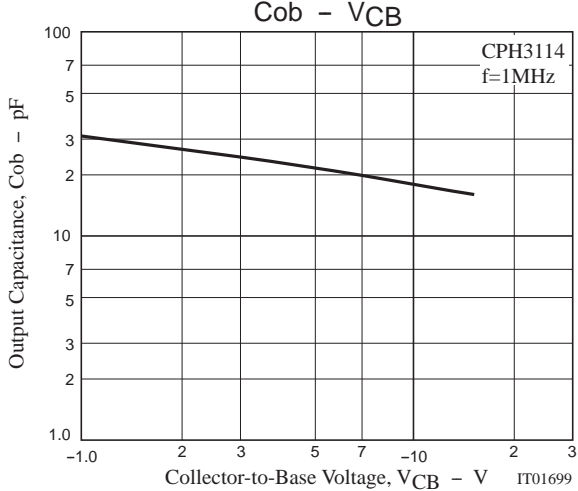
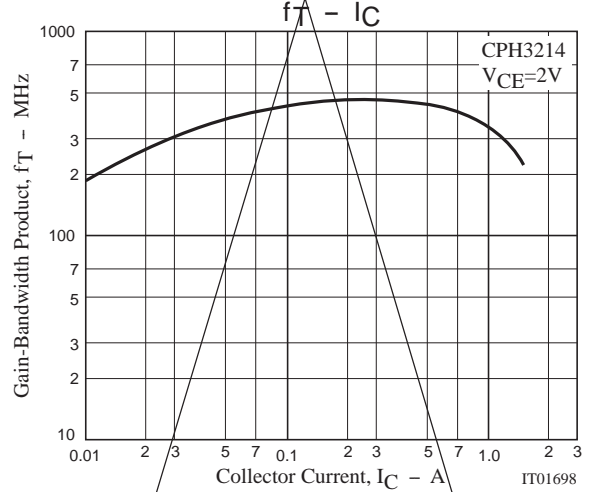
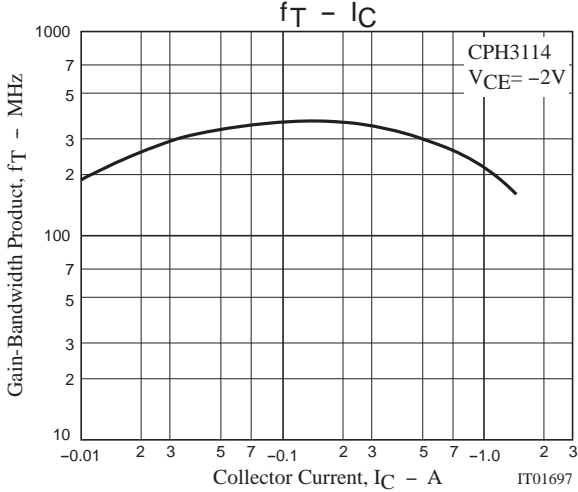
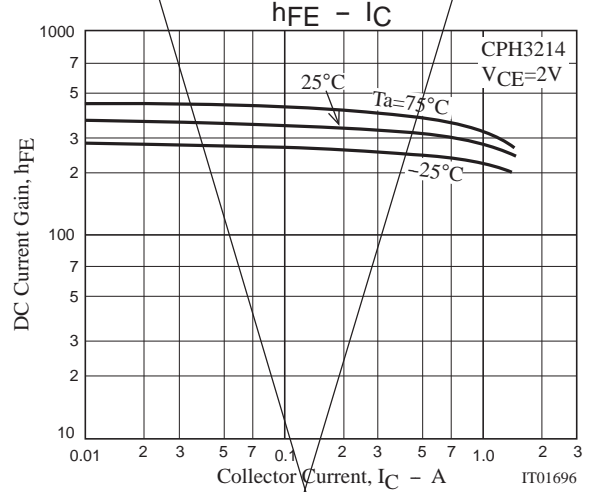
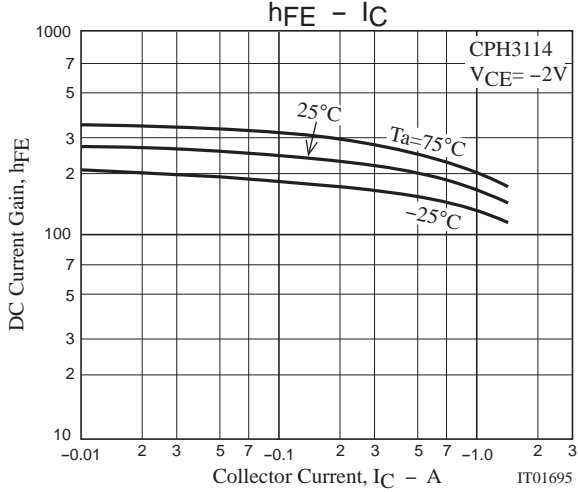
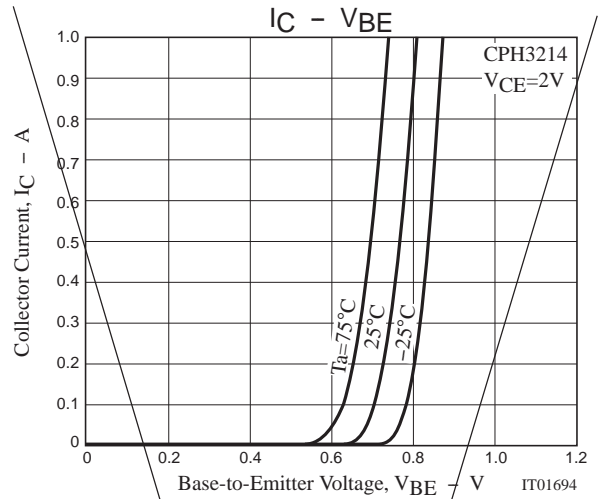
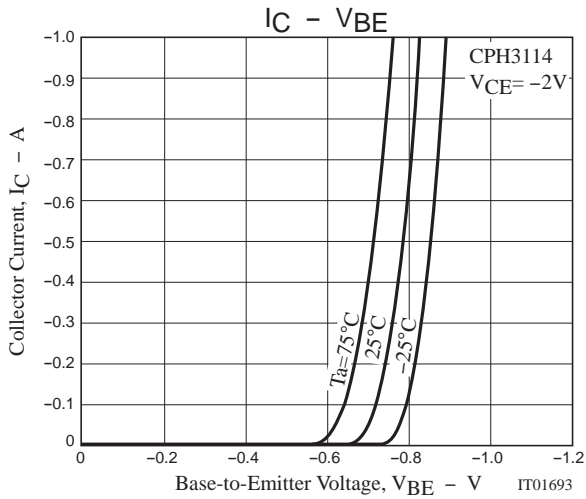
unit : mm
2150A



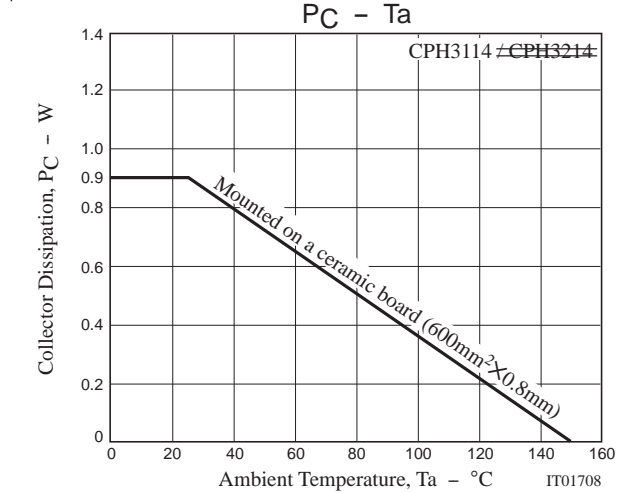
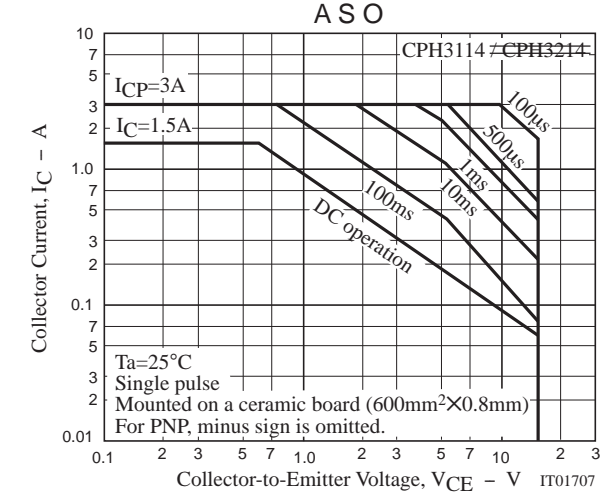
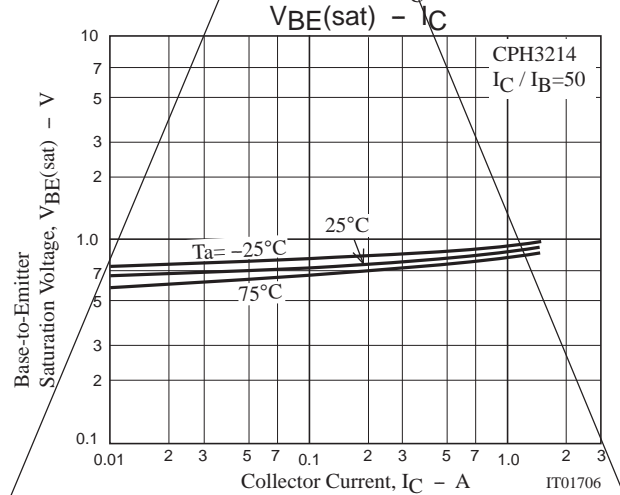
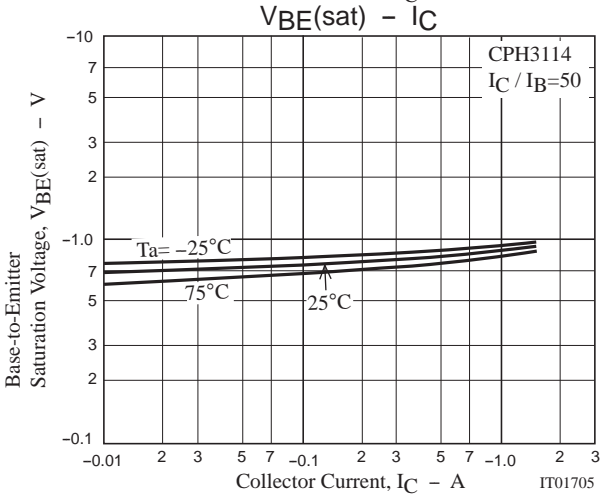
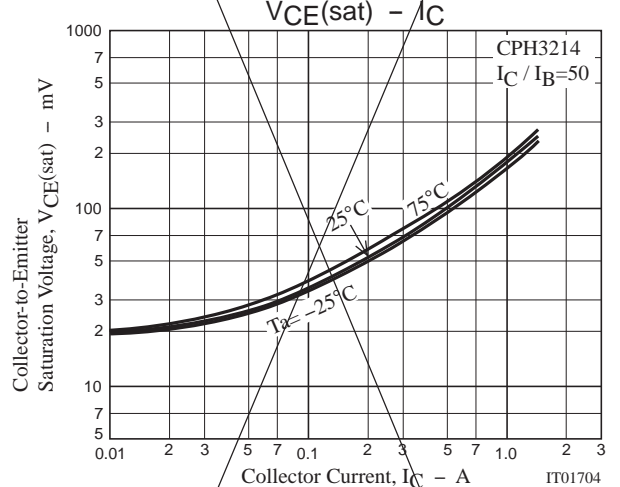
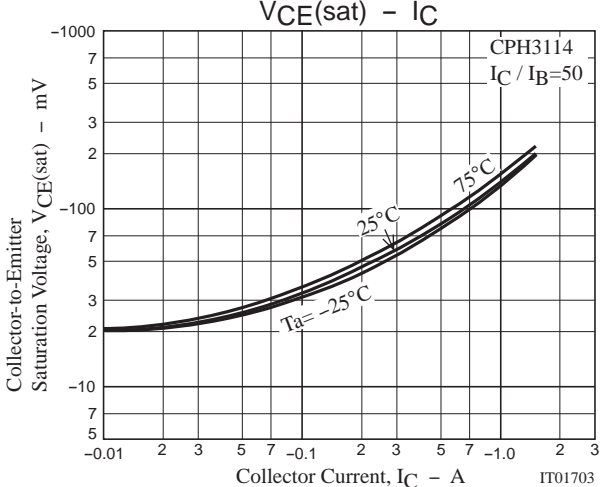
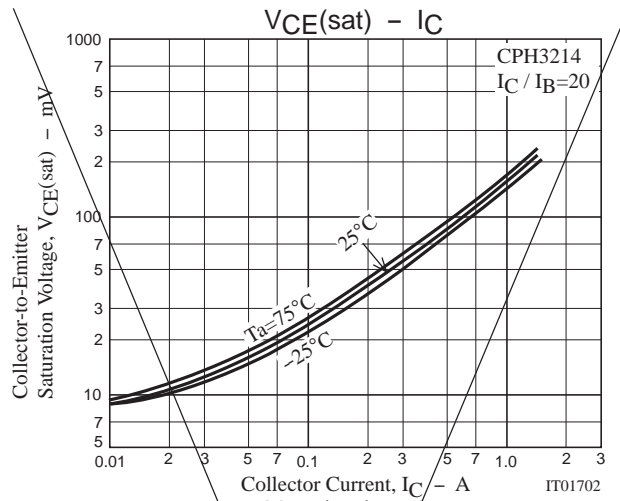
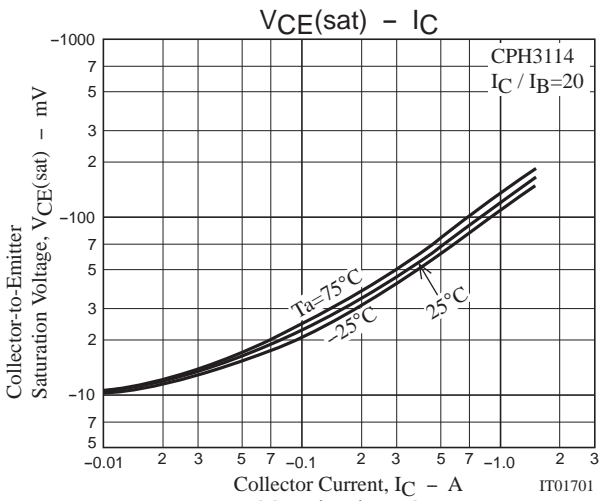
Switching Time Test Circuit



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