



SANYO Semiconductors

DATA SHEET

CPH3105 / CPH3205 — PNP / NPN Epitaxial Planar Silicon Transistors

High-Current Switching Applications

Applications

- DC-DC converters relay drivers, lamp drivers, motor drivers, flash.

Features

- Adoption of FBET, 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.

() : CPH3105

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CB0}		(-50)100	V
Collector-to-Emitter Voltage	V _{CES}		(-50)100	V
Collector-to-Emitter Voltage	V _{CEO}		(-)50	V
Emitter-to-Base Voltage	V _{EBO}		(-)6	V
Collector Current	I _C		(-)3	A
Collector Current (Pulse)	I _{CP}		(-)6	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	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} =(-)40V, I _E =0A			(-)1	μA
Emitter Cutoff Current	I _{EBO}	V _{EB} =(-)4V, I _C =0A			(-)1	μA
DC Current Gain	h _{FE}	V _{CE} =(-)2V, I _C =(-)100mA	200		560	

Marking : CPH3105 : AE, CPH3205 : CE

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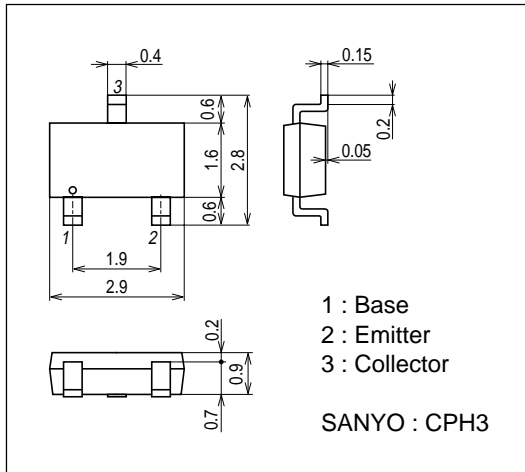
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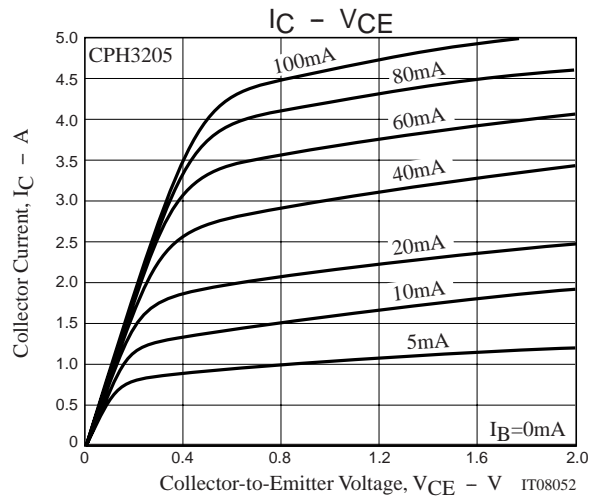
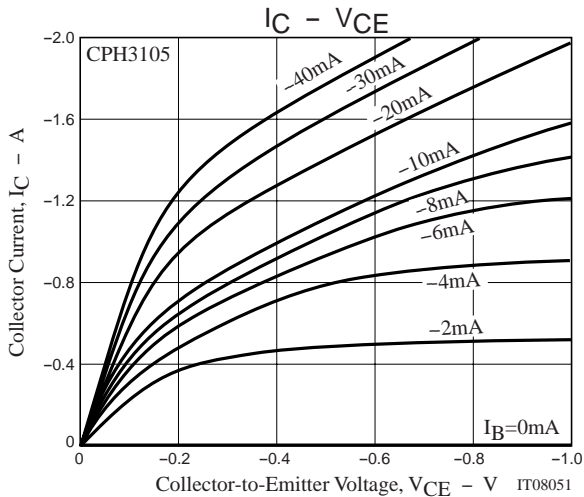
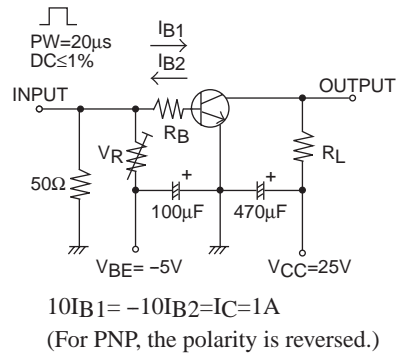
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gain-Bandwidth Product	f_T	$V_{CE} = (-)10V, I_C = (-)500mA$		(360)		MHz
				380		MHz
Output Capacitance	C_{ob}	$V_{CB} = (-)10V, f = 1MHz$		(24)13		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C = (-)1A, I_B = (-)50mA$		(-100)	(-200)	mV
				80	120	mV
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)2}$	$I_C = (-)2A, I_B = (-)100mA$		(-185)	(-500)	mV
				140	210	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)2A, I_B = (-)100mA$		(-0.88)	(-1.2)	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu A, I_E = 0A$		(-50)		V
				100		V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C = (-)100\mu A, R_{BE} = 0\Omega$		(-50)		V
				100		V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$		(-50)		V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = (-)10\mu A, I_C = 0A$		(-6)		V
Turn-ON Time	t_{on}	See specified test circuit.		(30)35		ns
Storage Time	t_{stg}	See specified test circuit.		(230)		ns
				300		ns
Fall Time	t_f	See specified test circuit.		(15)22		ns

Package Dimensions

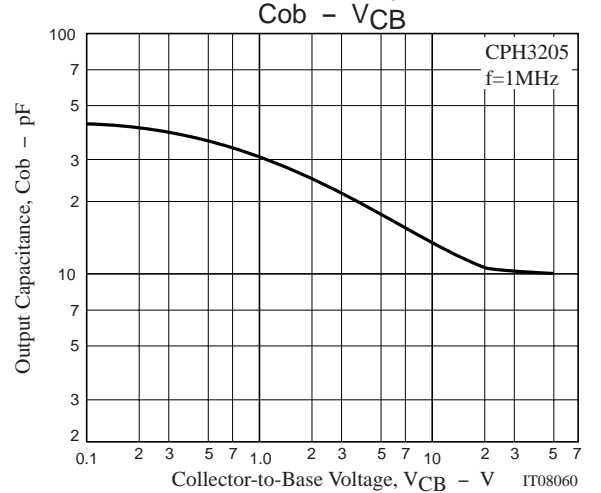
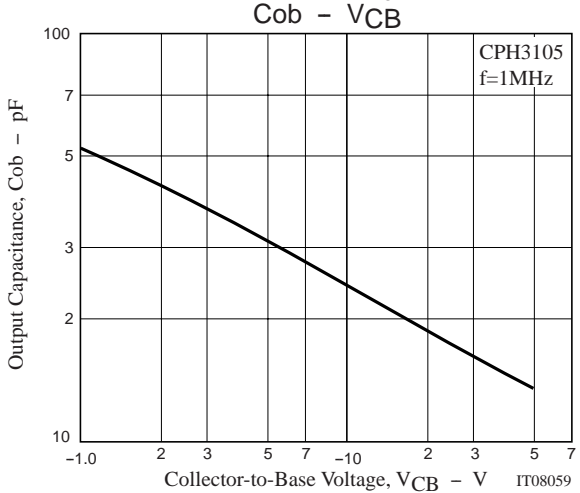
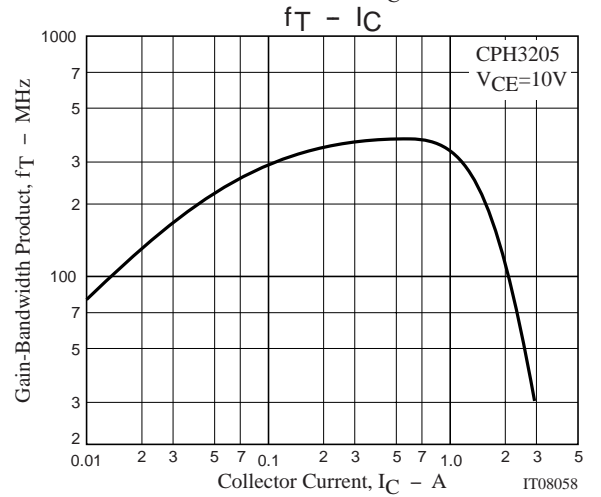
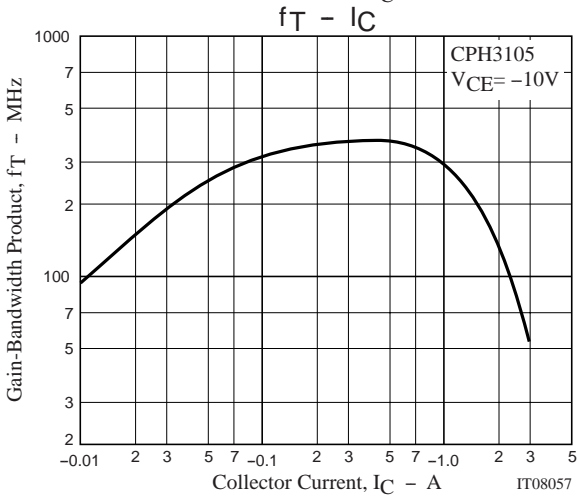
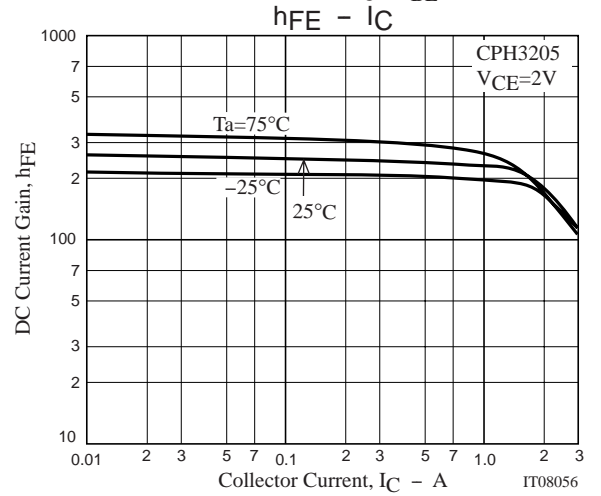
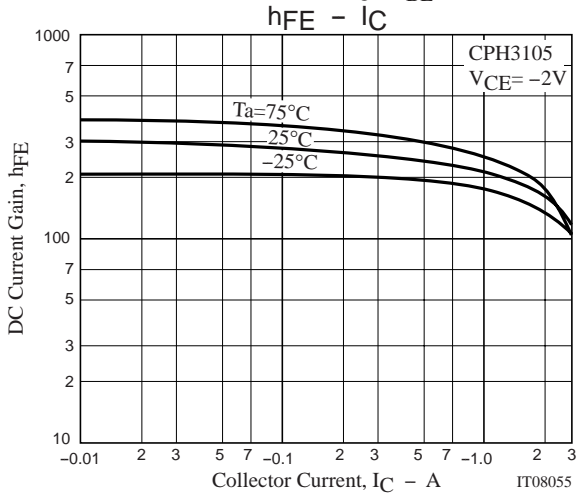
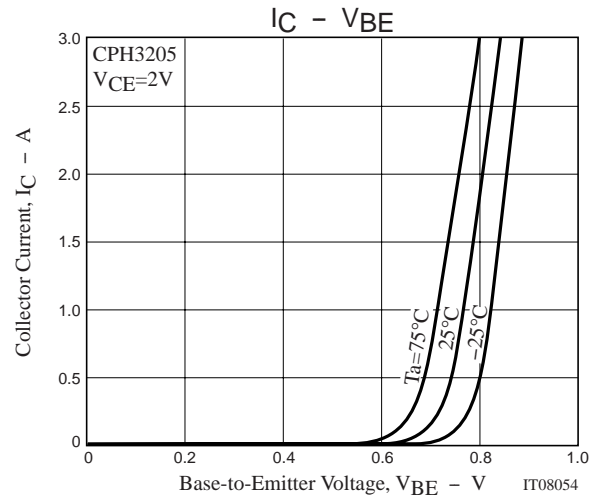
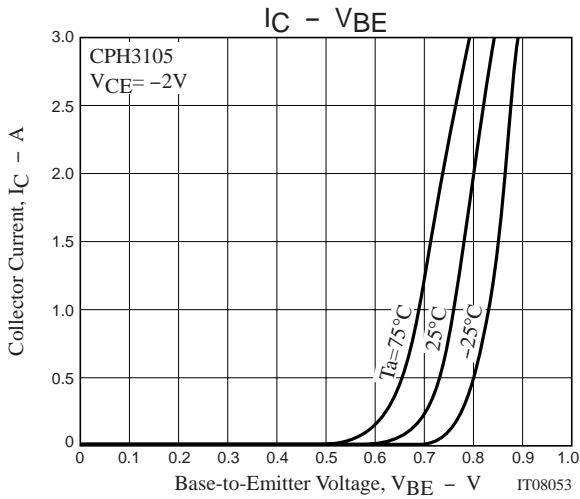
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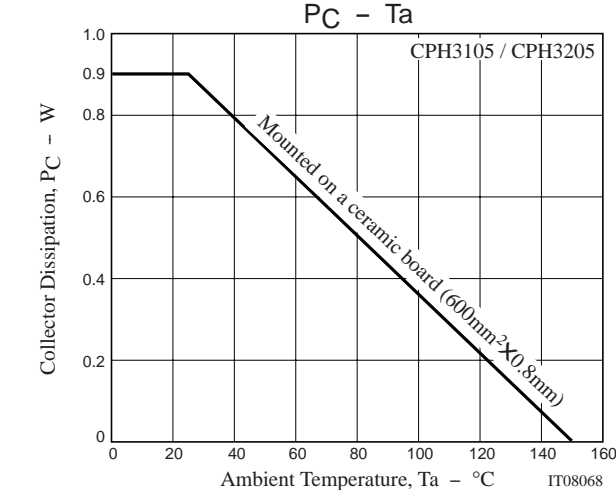
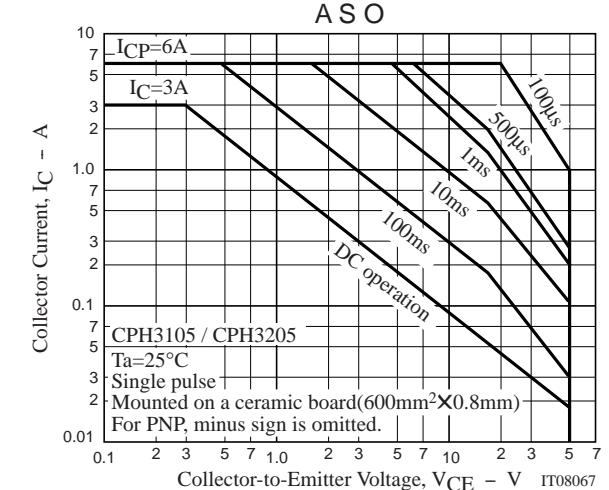
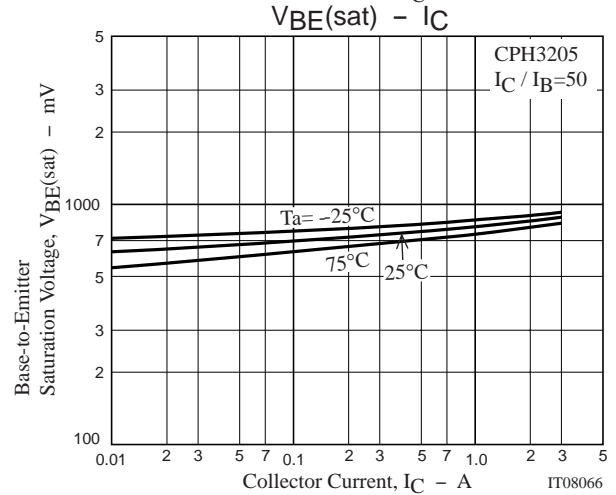
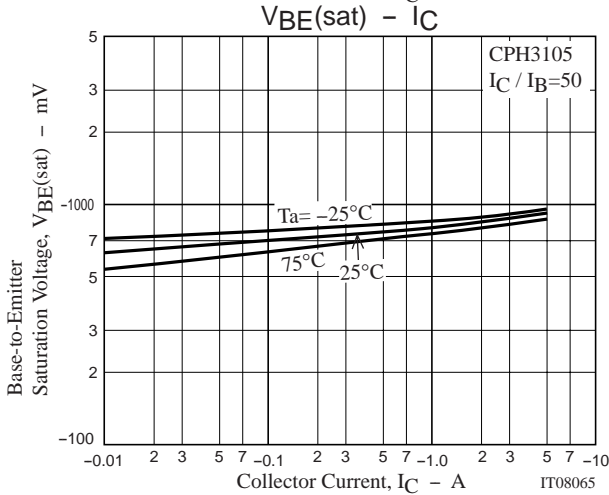
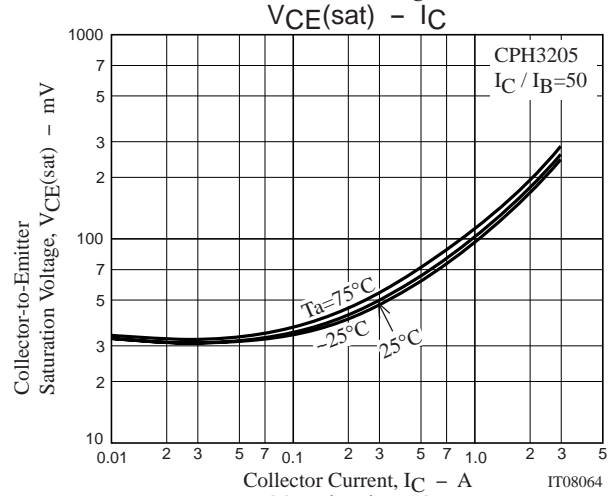
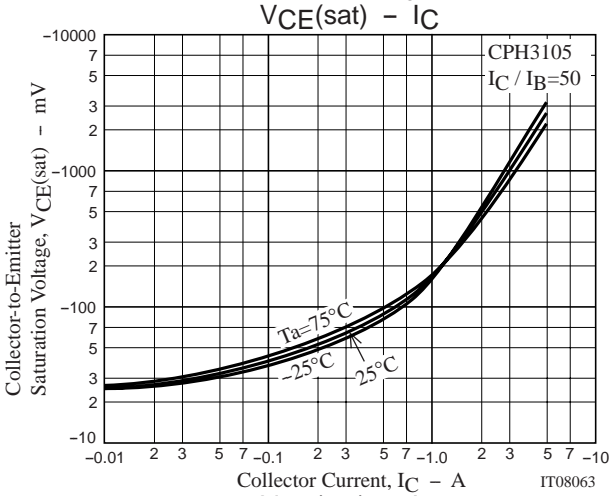
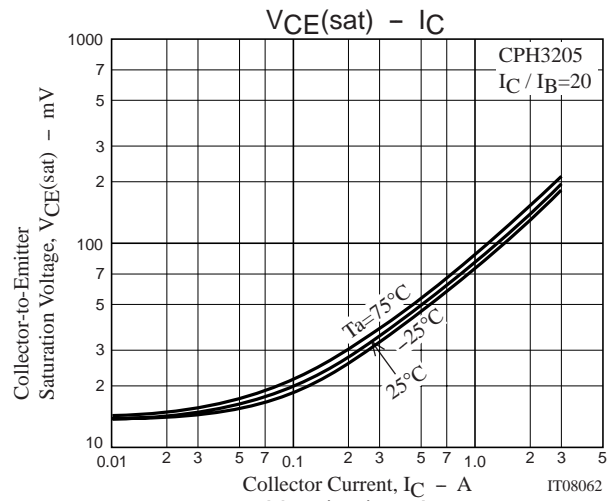
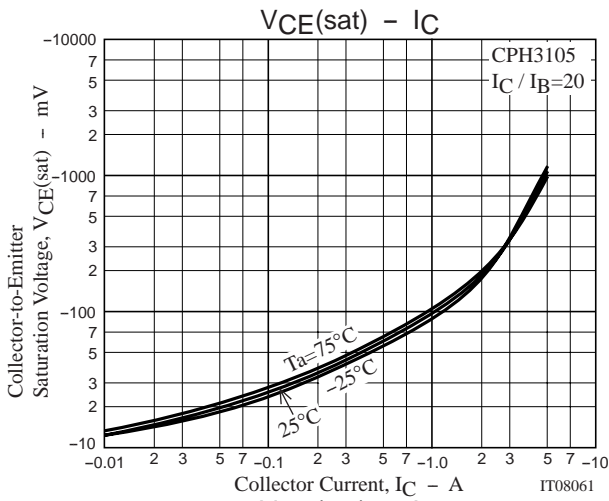
Switching Time Test Circuit



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