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Ordering number : ENN6078B

SANYO Semiconductors
DATA SHEET

CPH3109 / CPH3209 — DC / DC Converter Applications

PNP / NPN Epitaxial Planar Silicon Transistors

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.

( ) : CPH3109

Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(-30)40	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
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	

Marking : CPH3109 : AJ, CPH3209 : CJ

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

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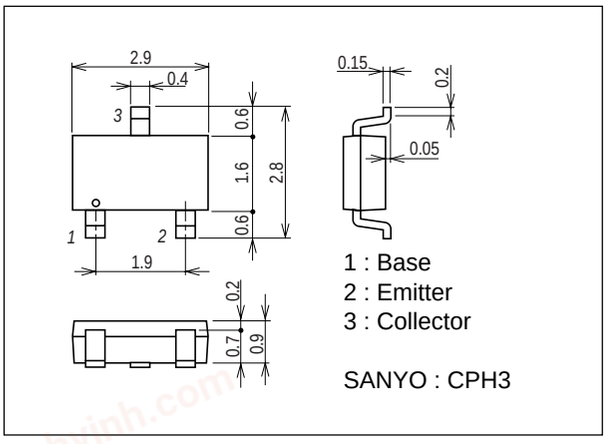
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gain-Bandwideth Product	f_T	V_{CE}=(-)10V, I_C=(-)500mA		(380)		MHz
				450		MHz
Output Capacitance	Cob	V_{CB}=(-)10V, f=1MHz		(25)20		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)1	I_C=(-)1.5A, I_B=(-)30mA		(-155)	(-230)	mV
				120	180	mV
	V_{CE}(sat)2	I_C=(-)1.5A, I_B=(-)75mA		(-105)	(-155)	mV
				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
			40			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_E=(-)10μA, I_C=0	(-)5			V
Turn-ON Time	t_{on}	See specified test circuit.		(50)30		ns
Storage Time	t_{stg}	See specified test circuit.		(270)		ns
				300		ns
Fall Time	t_f	See specified test circuit.		(25)15		ns

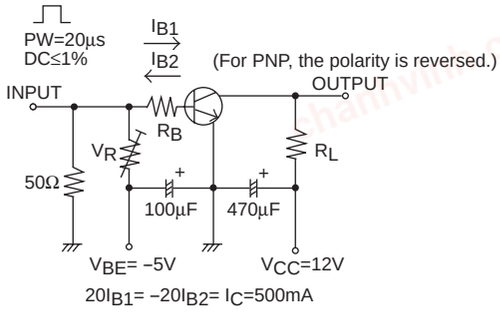
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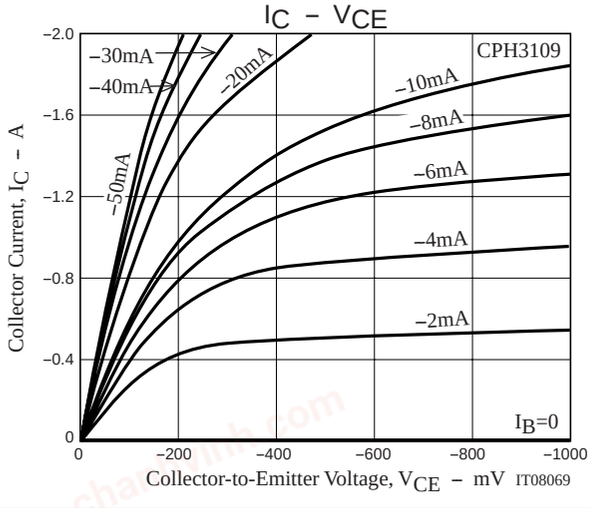
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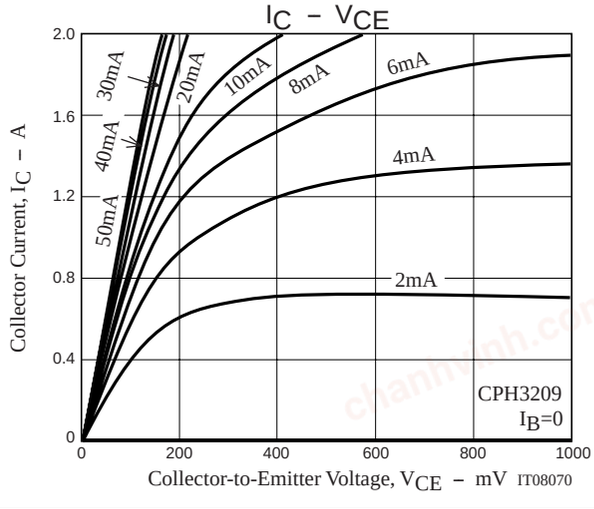
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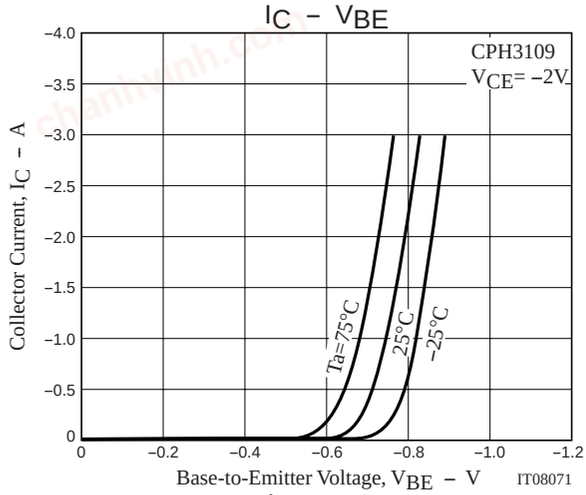
Switching Time Test Circuit

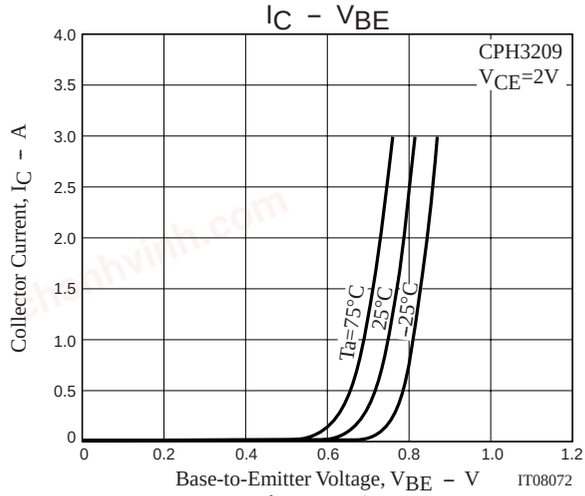


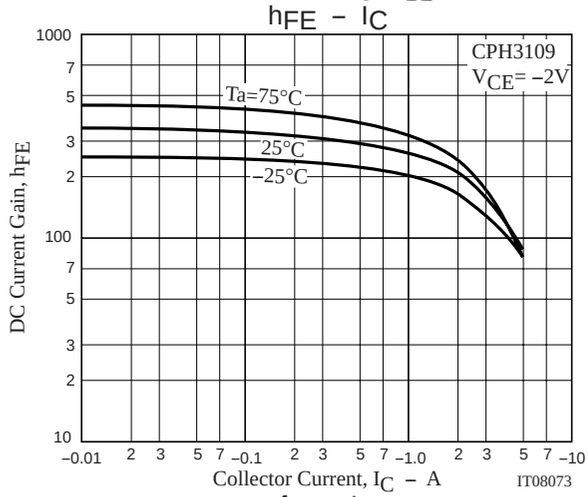


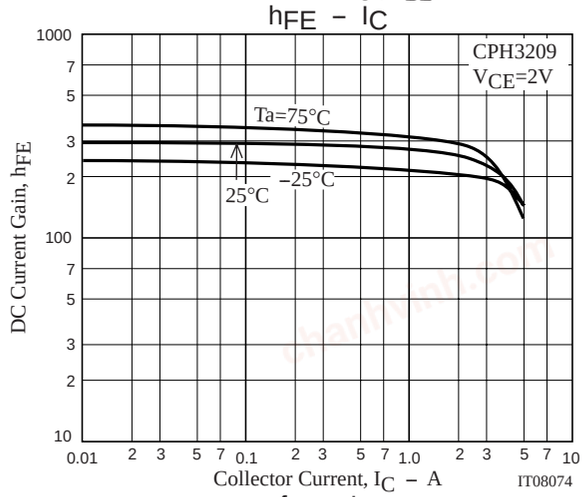


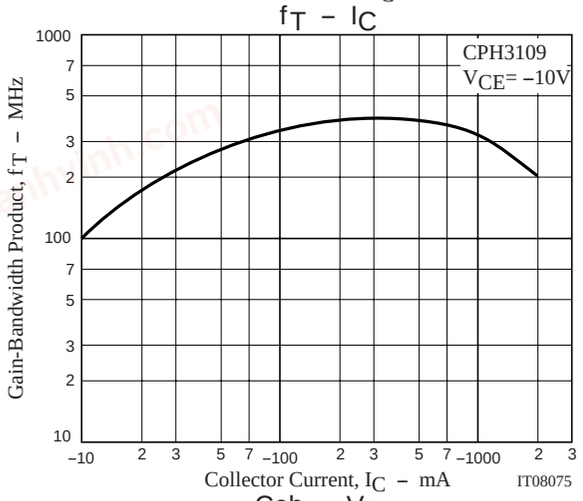
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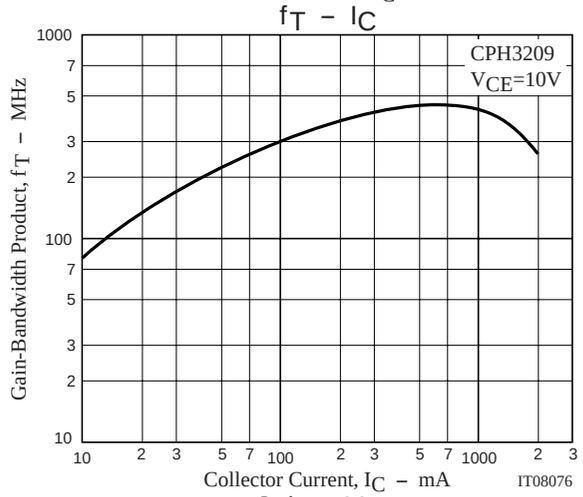


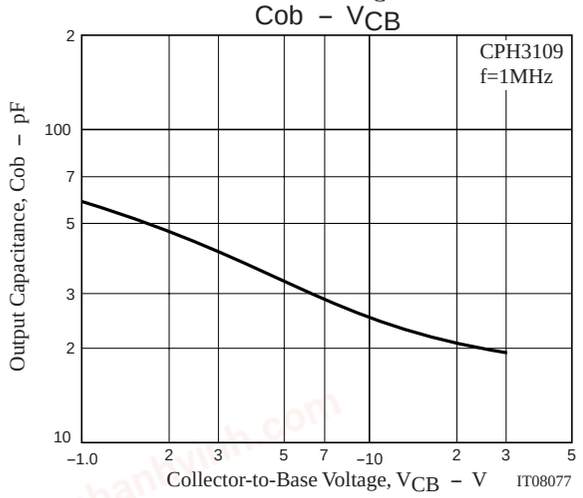


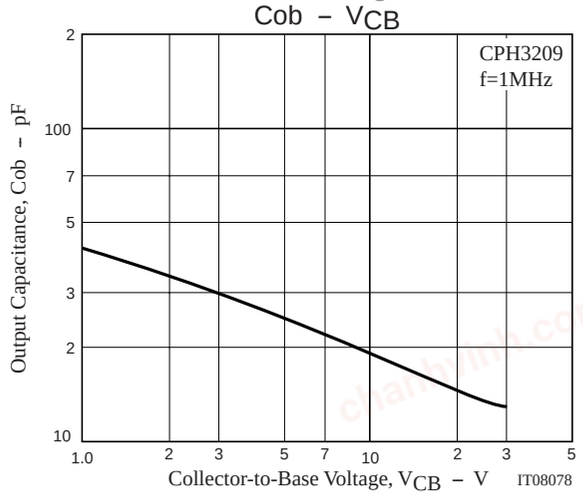




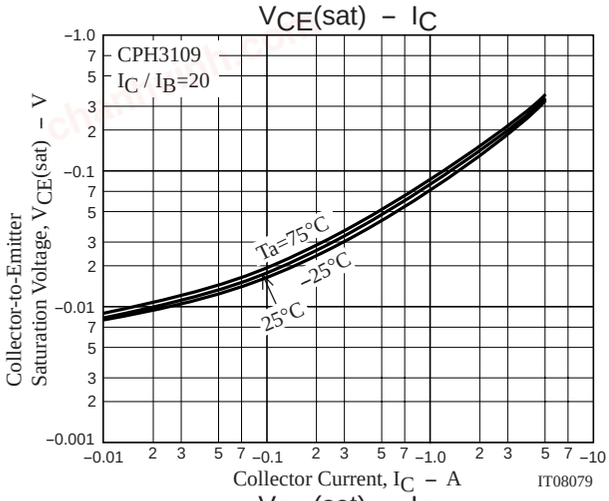


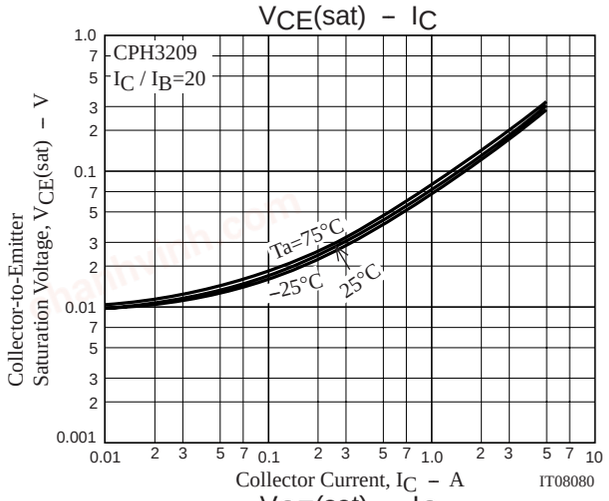


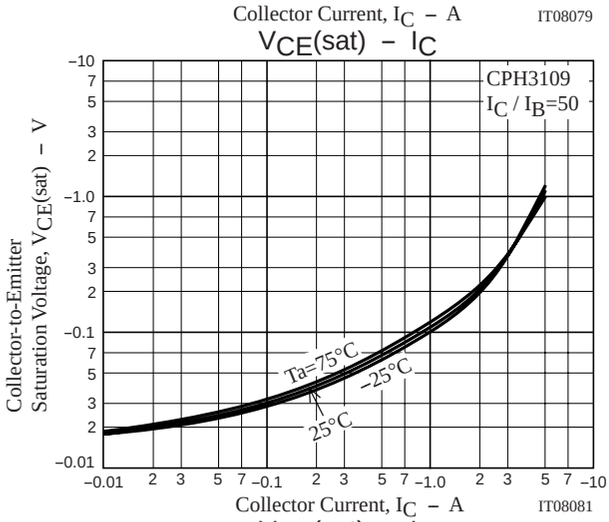


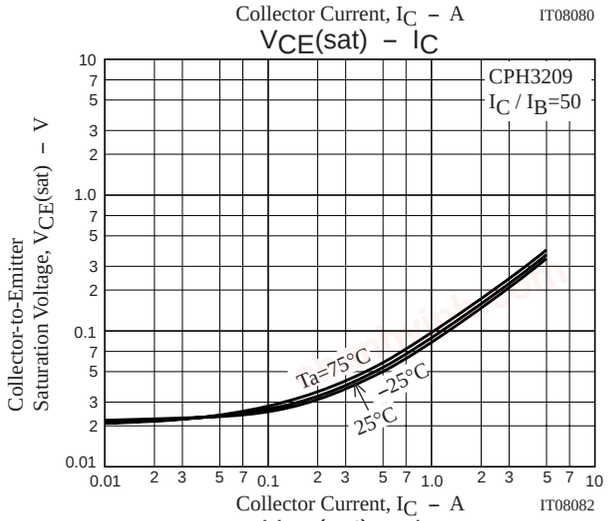


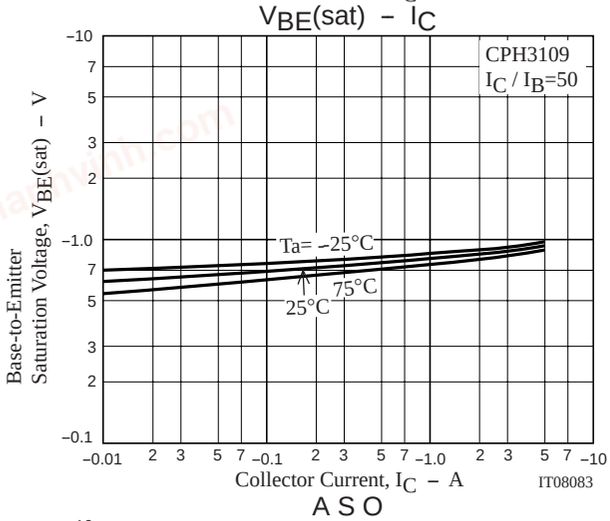
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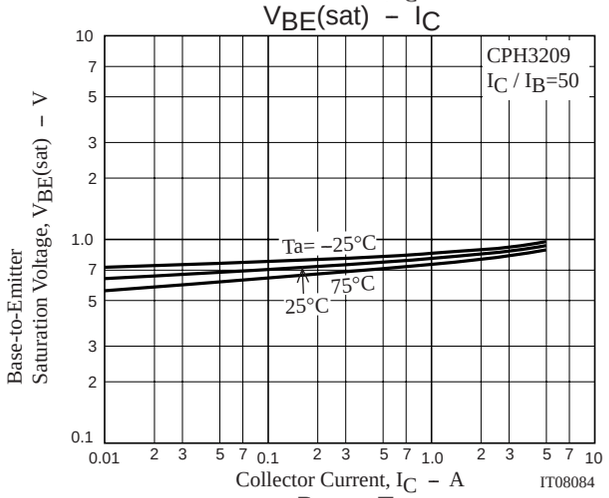


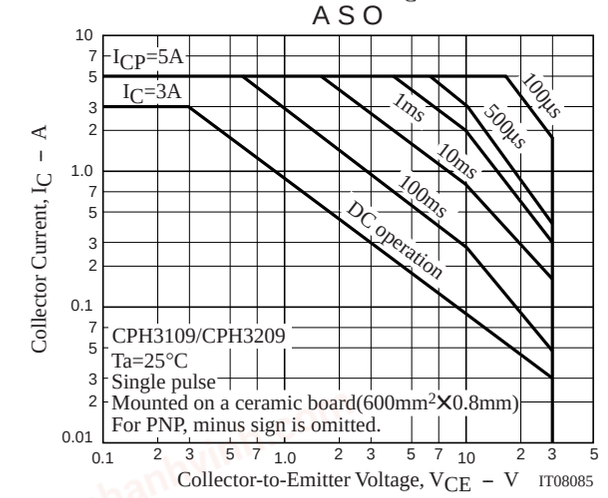


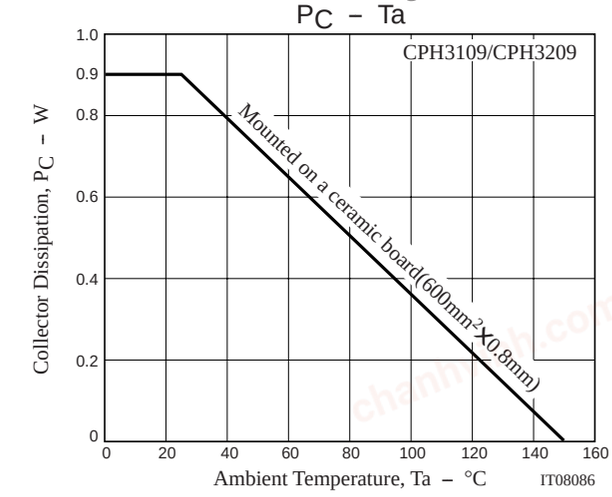












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