



SANYO Semiconductors

DATA SHEET

PCP1201 — NPN Epitaxial Planar Silicon Transistor

High-Voltage Switching Applications

Applications

- DC / DC converter, relay drivers, lamp drivers, motor drivers, inverter.

Features

- Adoption of FBET, MBIT process.
- High current capacitance.
- Low collector-to-emitter saturation voltage.
- High-speed switching.
- High allowable power dissipation.

Specifications

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		150	V
Collector-to-Emitter Voltage	V_{CES}		150	V
Collector-to-Emitter Voltage	V_{CEO}		120	V
Emitter-to-Base Voltage	V_{EBO}		7	V
Collector Current	I_C		2.5	A
Collector Current (Pulse)	I_{CP}		4	A
Base Current	I_B		500	mA
Collector Dissipation	P_C	When mounted on ceramic substrate (450mm ² X0.8mm)	1.3	W
		$T_c=25^\circ\text{C}$	3.5	W
Junction Temperature	T_J		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Marking : QH

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SANYO Semiconductor Co., Ltd.

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

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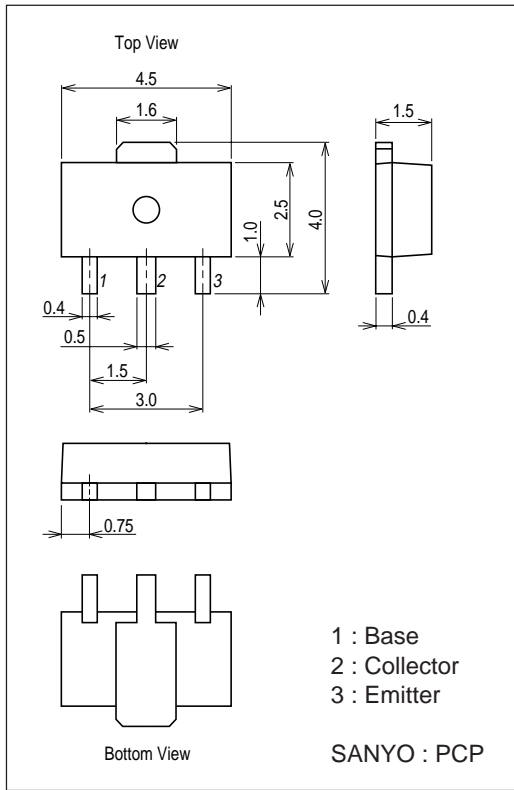
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=100V, I_E=0A$			1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5V, I_C=0A$			1	μA
DC Current Gain	h_{FE}	$V_{CE}=5V, I_C=100mA$	200		560	
Gain-Bandwidth Product	f_T	$V_{CE}=10V, I_C=100mA$		130		MHz
Output Capacitance	C_{ob}	$V_{CB}=10V, f=1MHz$		13		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=1A, I_B=100mA$		100	150	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=1A, I_B=100mA$		0.85	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0A$	150			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C=100\mu A, R_{BE}=0\Omega$	150			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	120			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0A$	7			V
Turn-ON Time	t_{on}	See specified Test Circuit.		50		ns
Storage Time	t_{stg}	See specified Test Circuit.		1250		ns
Fall Time	t_f	See specified Test Circuit.		60		ns

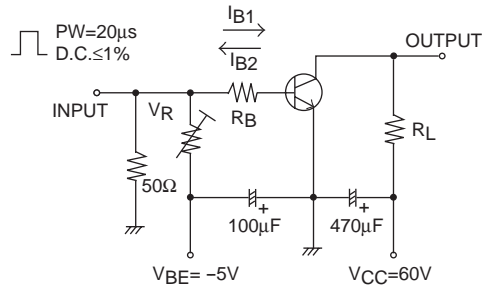
Package Dimensions

unit : mm (typ)

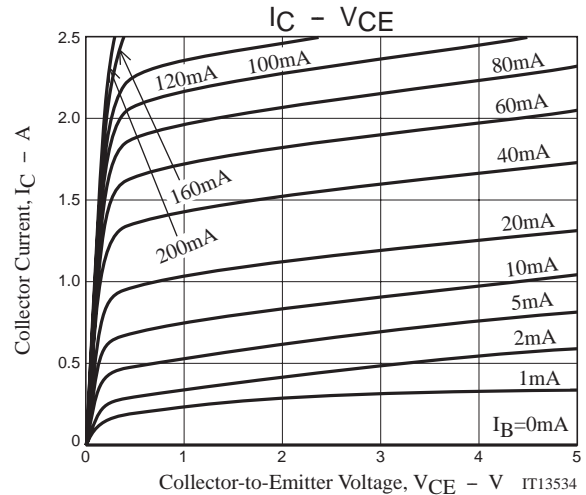
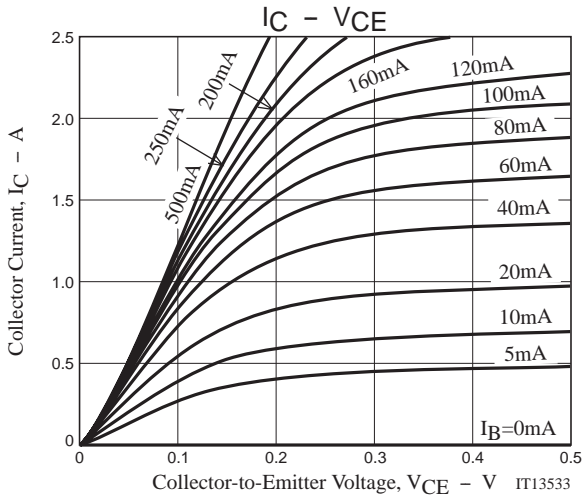
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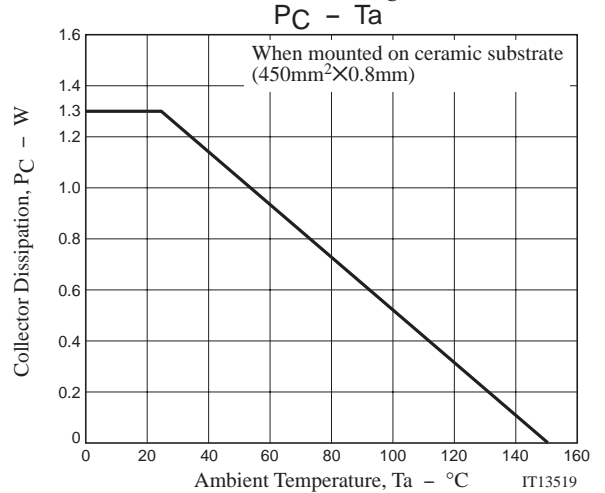
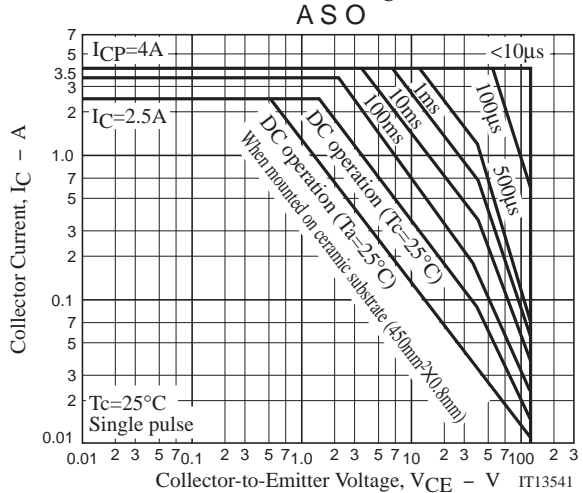
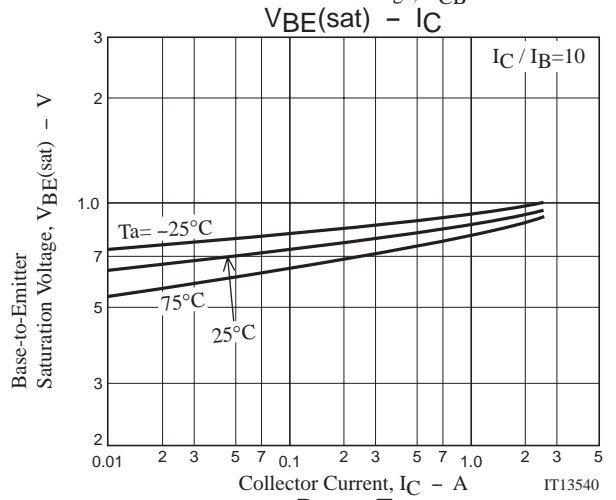
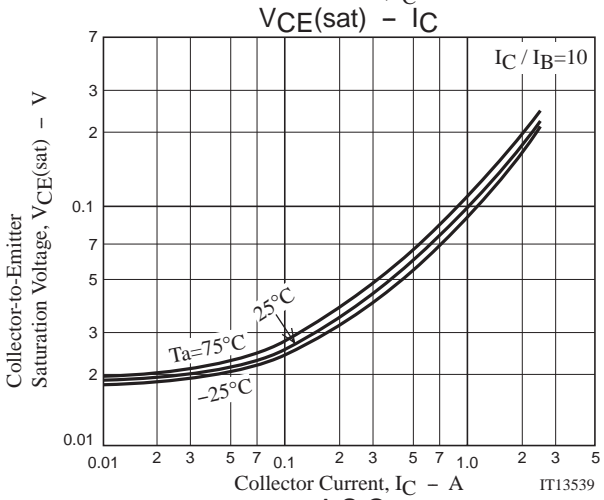
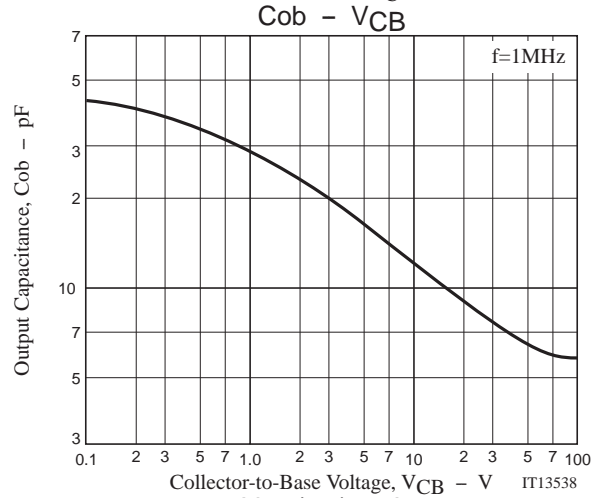
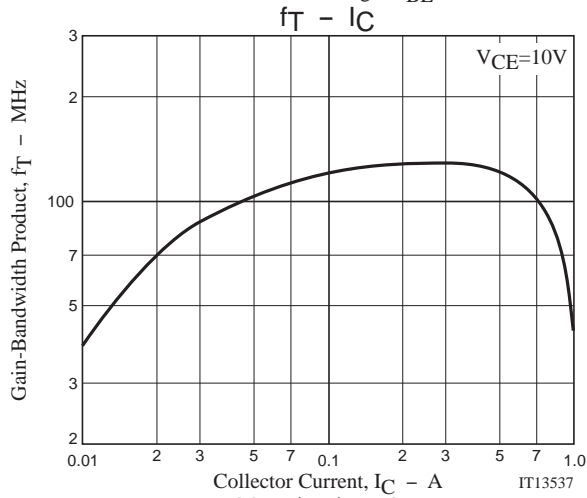
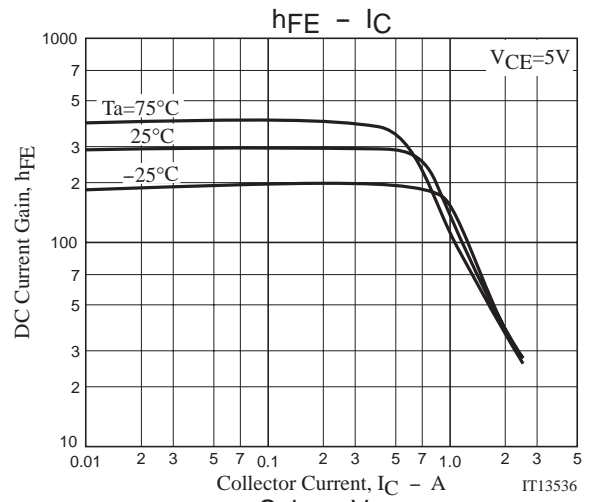
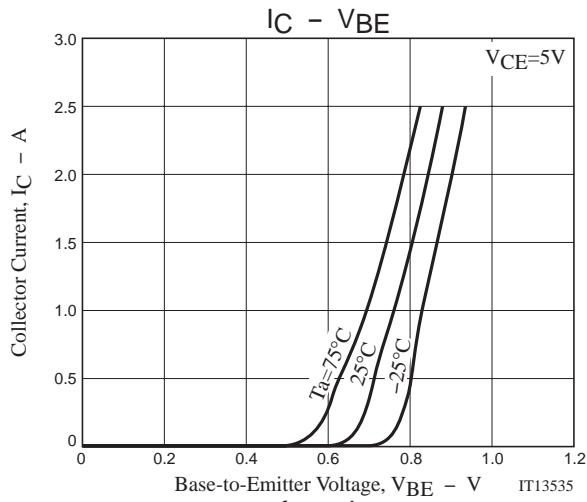
Switching Time Test Circuit

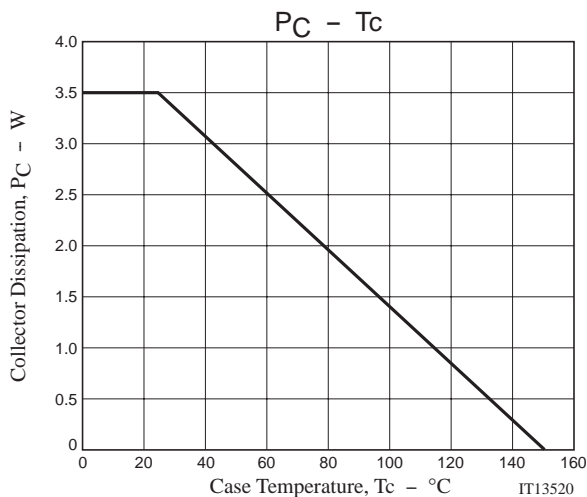


$$I_C=10I_{B1}=-10I_{B2}=0.5A$$



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