



# PCP1204 — NPN Epitaxial Planar Silicon Transistor

## DC / DC Converter Applications

### Applications

- DC / DC converters, relay drivers, lamp drivers, motor drivers, Inverters, IGBT gate drivers.

### Features

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

### Specifications

#### Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CBO</sub>		80	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>		50	V
Emitter-to-Base Voltage	V <sub>EBO</sub>		5	V
Collector Current	I <sub>C</sub>		1.5	A
Collector Current (Pulse)	I <sub>CP</sub>		3	A
Base Current	I <sub>B</sub>		200	mA
Collector Dissipation	P <sub>C</sub>	When mounted on ceramic substrate (450mm <sup>2</sup> ×0.8mm)	1.3	W
		T <sub>C</sub> =25°C	3.5	W
Junction Temperature	T <sub>J</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

Marking : QK

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# PCP1204

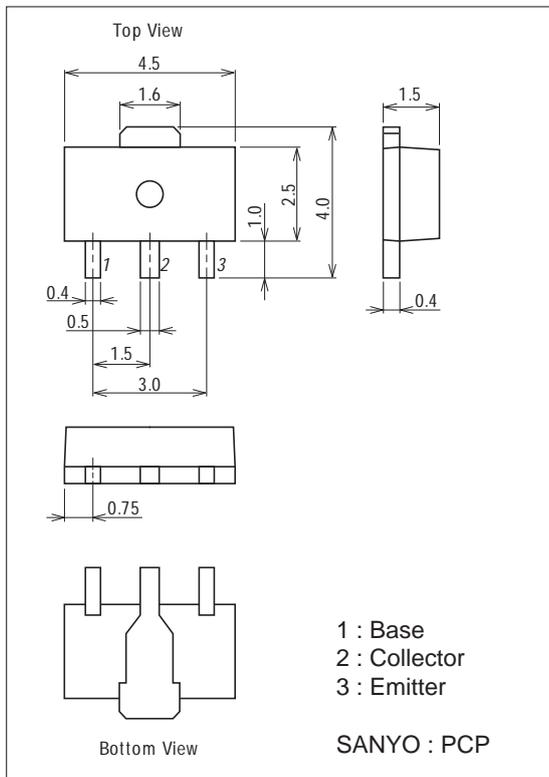
## Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=40V, I_E=0A$			0.1	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=4V, I_C=0A$			0.1	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE}=2V, I_C=100mA$	200		560	
Gain-Bandwidth Product	$f_T$	$V_{CE}=10V, I_C=300mA$		420		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10V, f=1MHz$		6		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C=0.5A, I_B=10mA$		130	190	mV
	$V_{CE(sat)2}$	$I_C=0.3A, I_B=6mA$		90	135	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=0.5A, I_B=10mA$		0.81	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0A$	80			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0A$	5			V
Turn-On Time	$t_{on}$	See specified Test Circuit.		35		ns
Storage Time	$t_{stg}$	See specified Test Circuit.		330		ns
Fall Time	$t_f$	See specified Test Circuit.		40		ns

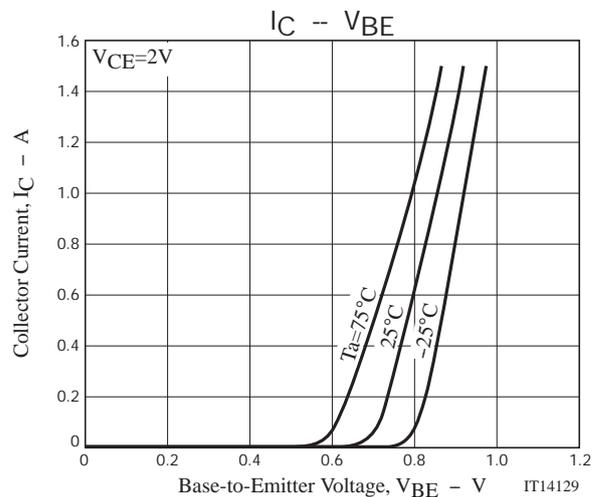
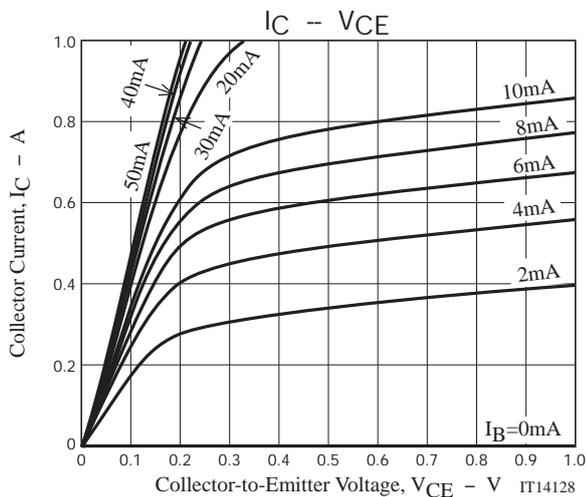
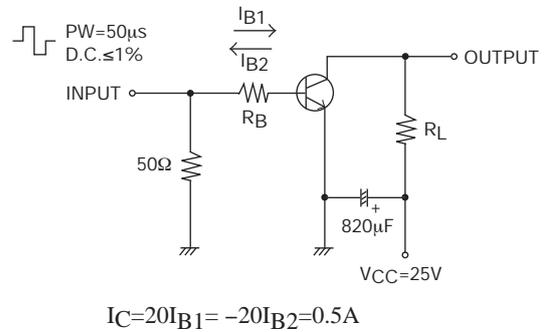
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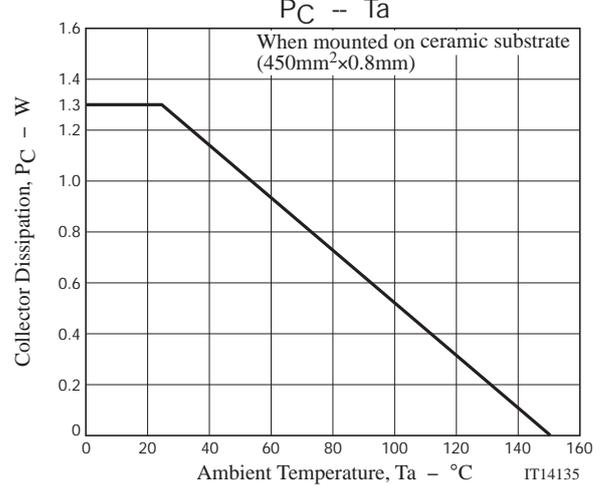
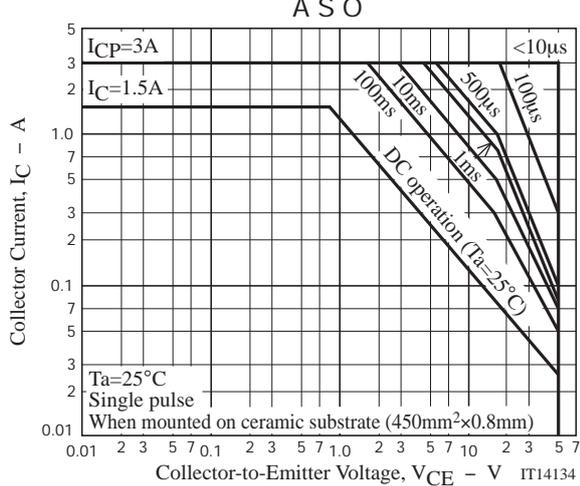
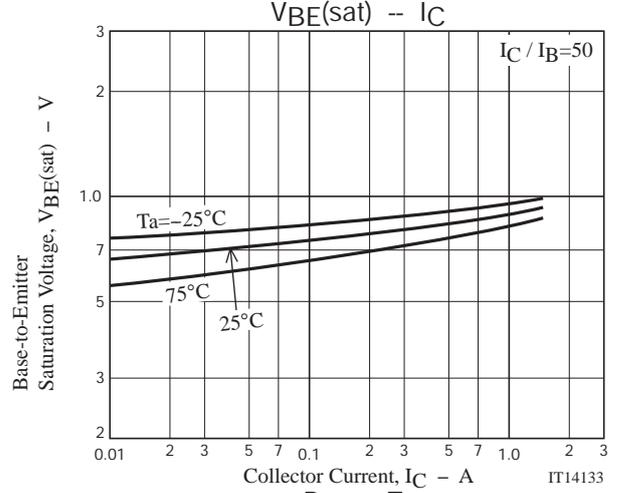
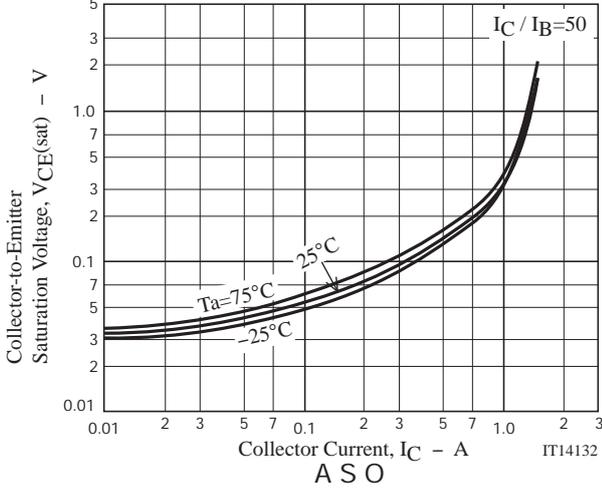
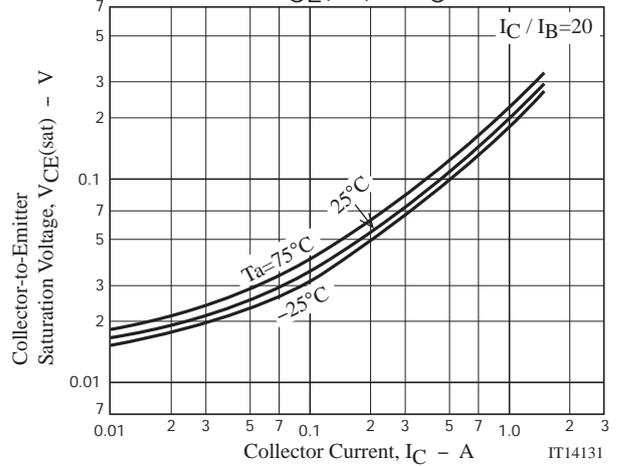
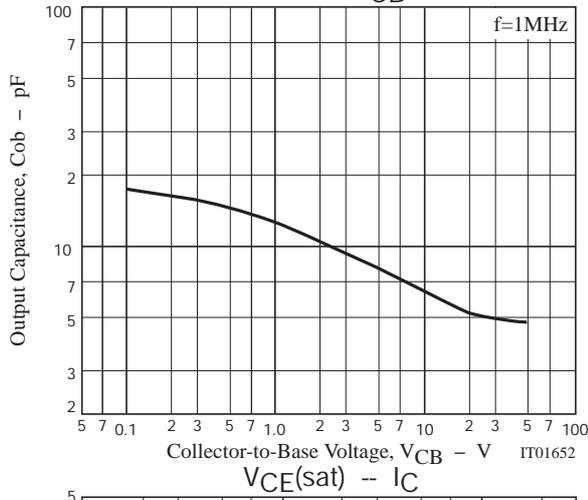
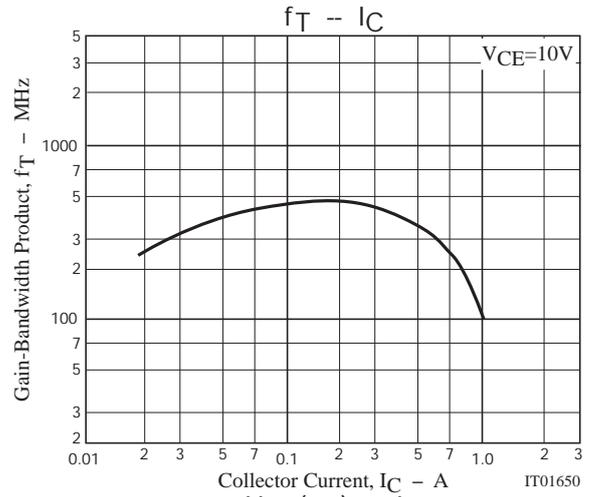
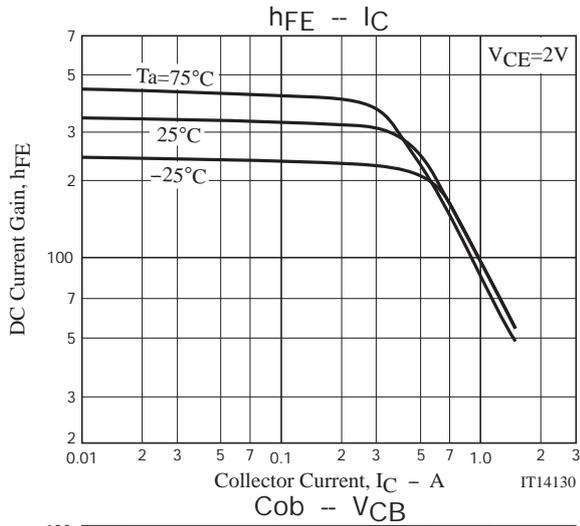
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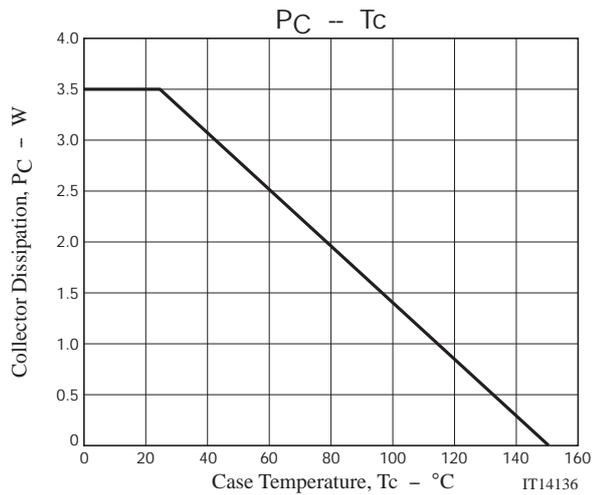
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## Switching Time Test Circuit







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