



SANYO Semiconductors

# DATA SHEET

An ON Semiconductor Company

## PCP1203 — 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>		40	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>		30	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>		5	A
Base Current	I <sub>B</sub>		300	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 : QJ

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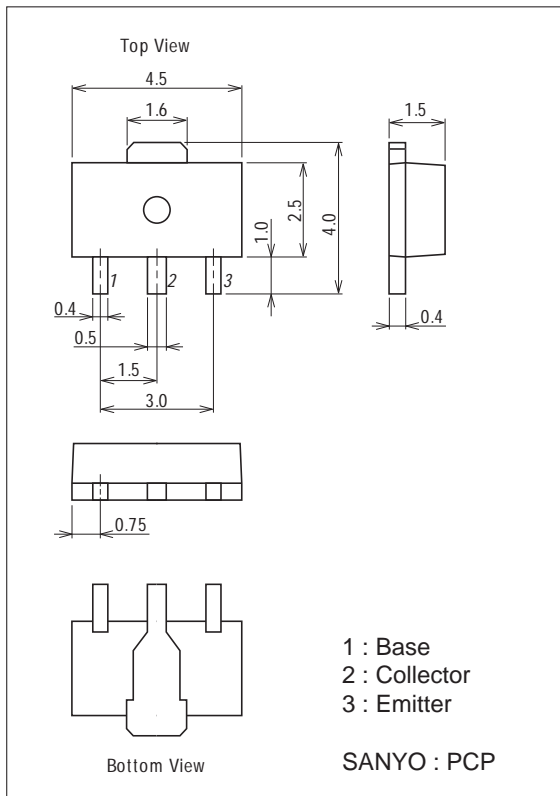
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Electrical Characteristics at Ta=25°C

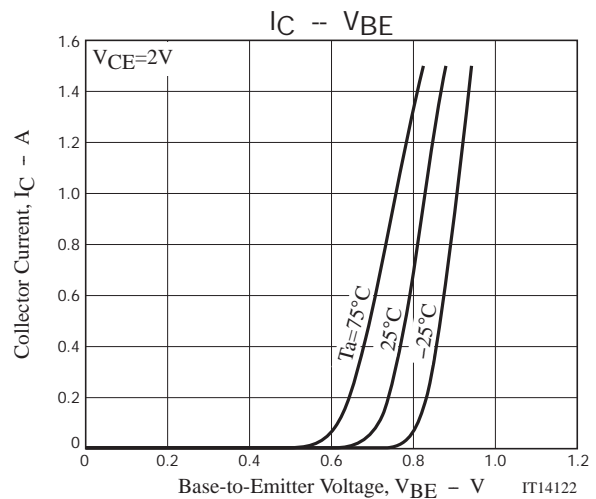
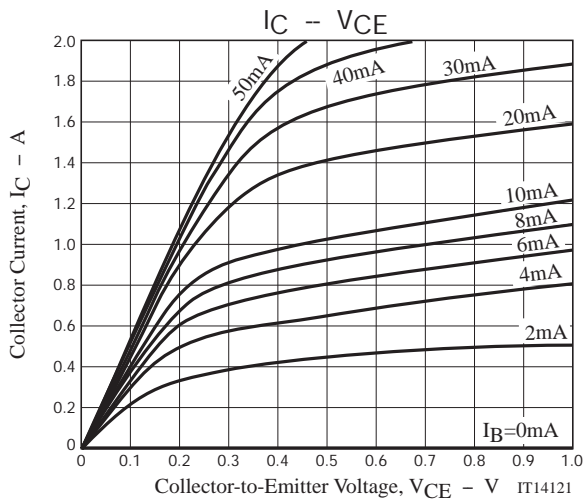
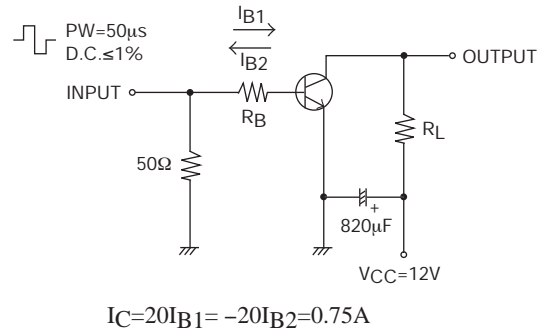
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V <sub>CB</sub> =30V, I <sub>E</sub> =0A			0.1	μA
Emitter Cutoff Current	IEBO	V <sub>EB</sub> =4V, I <sub>C</sub> =0A			0.1	μA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =2V, I <sub>C</sub> =100mA	200		560	
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =300mA		500		MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, f=1MHz		8		pF
Collector-to-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =0.75A, I <sub>B</sub> =15mA		150	225	mV
Base-to-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =0.75A, I <sub>B</sub> =15mA		0.85	1.2	V
Collector-to-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =10μA, I <sub>E</sub> =0A	40			V
Collector-to-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =1mA, R <sub>BE</sub> =∞	30			V
Emitter-to-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =10μA, I <sub>C</sub> =0A	5			V
Turn-On Time	t <sub>on</sub>	See specified Test Circuit.		35		ns
Storage Time	t <sub>stg</sub>	See specified Test Circuit.		205		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		30		ns

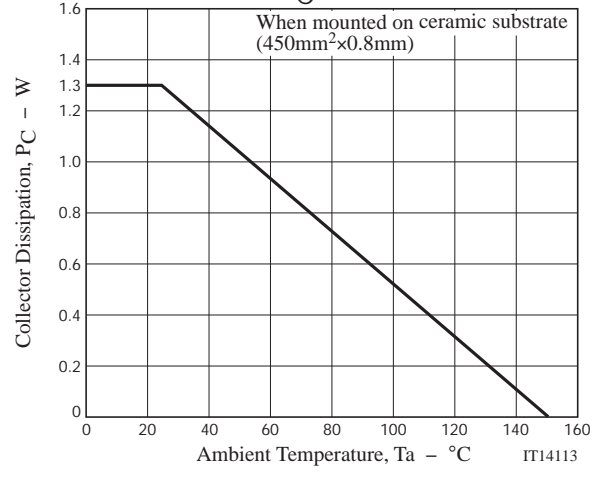
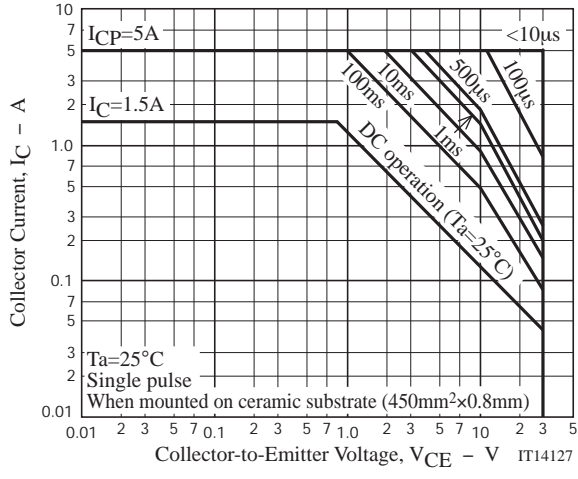
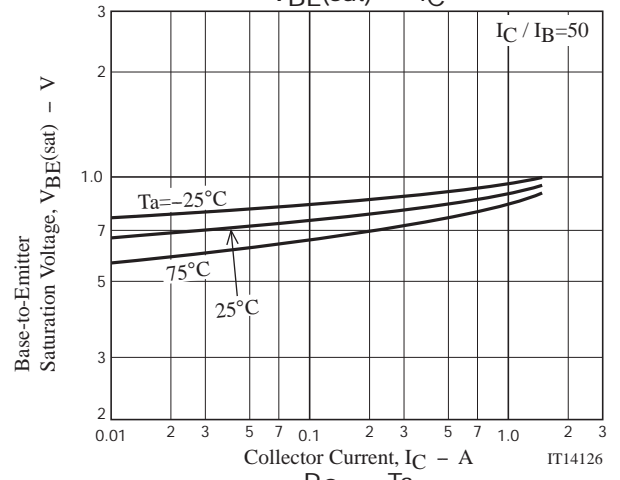
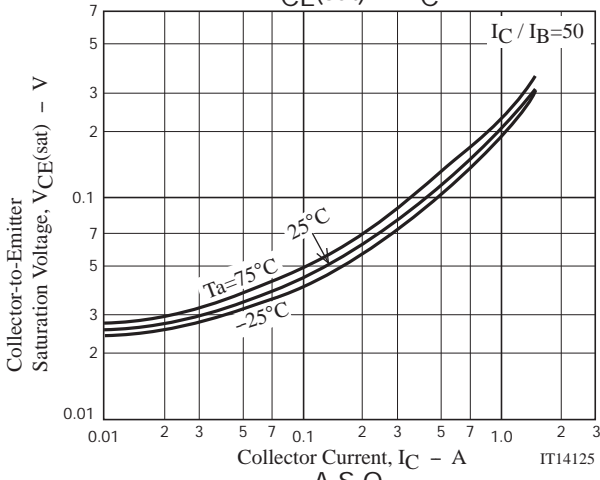
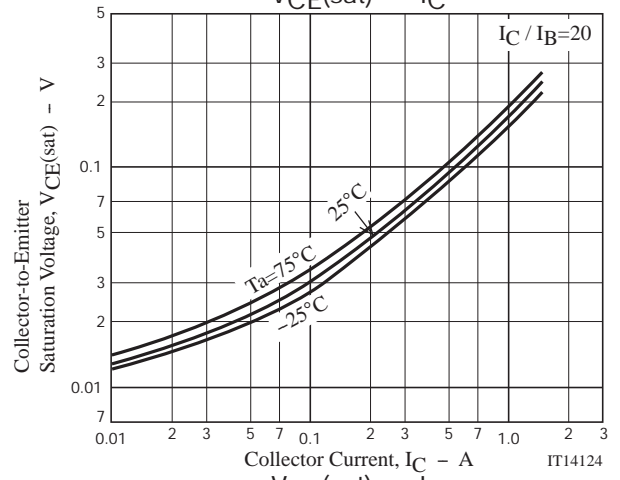
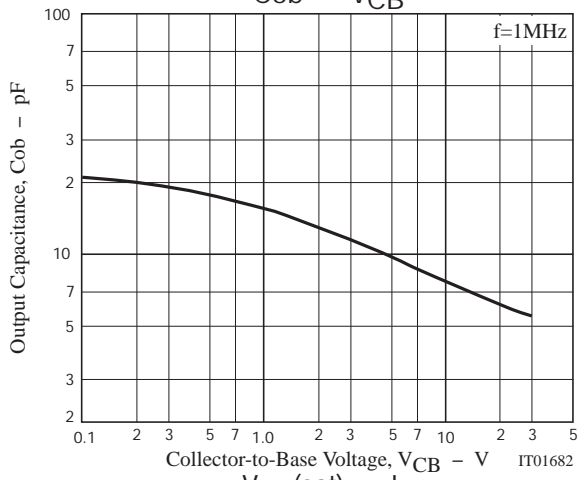
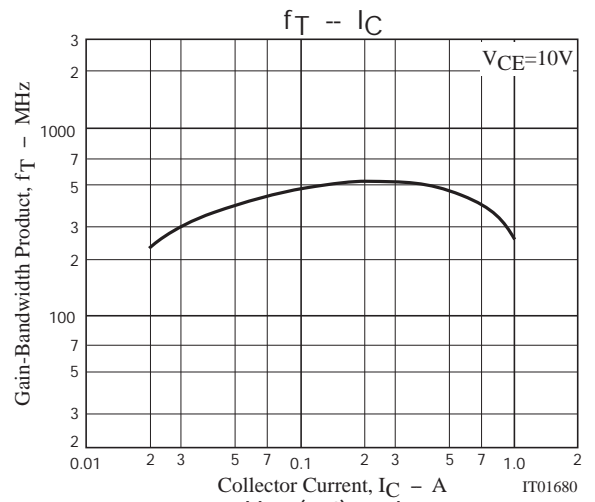
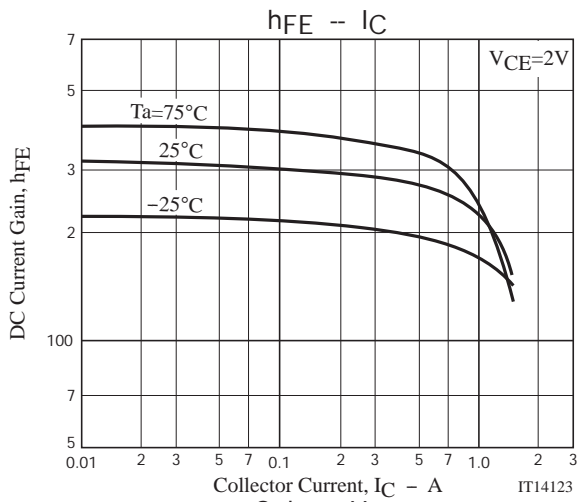
Package Dimensions

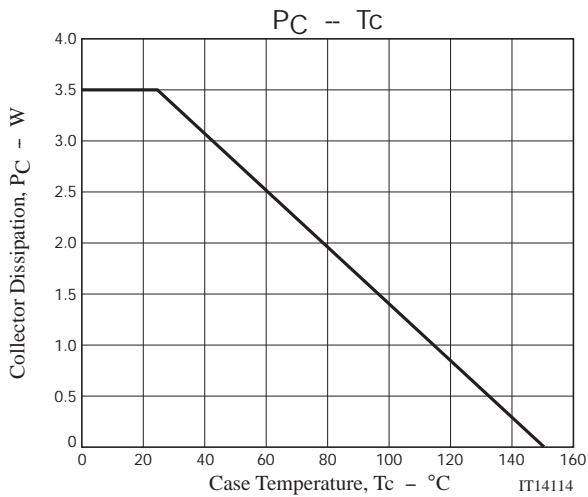
unit : mm (typ)  
7007A-004



Switching Time Test Circuit







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