


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	VCBO		40	V
Collector-to-Emitter Voltage	VCEO		30	V
Emitter-to-Base Voltage	VEBO		5	V
Collector Current	IC		1.5	A
Collector Current (Pulse)	ICP		5	A
Base Current	IB		300	mA
Collector Dissipation	PC	When mounted on ceramic substrate (450mm ² ×0.8mm)	1.3	W
		Tc=25°C	3.5	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Marking : QJ

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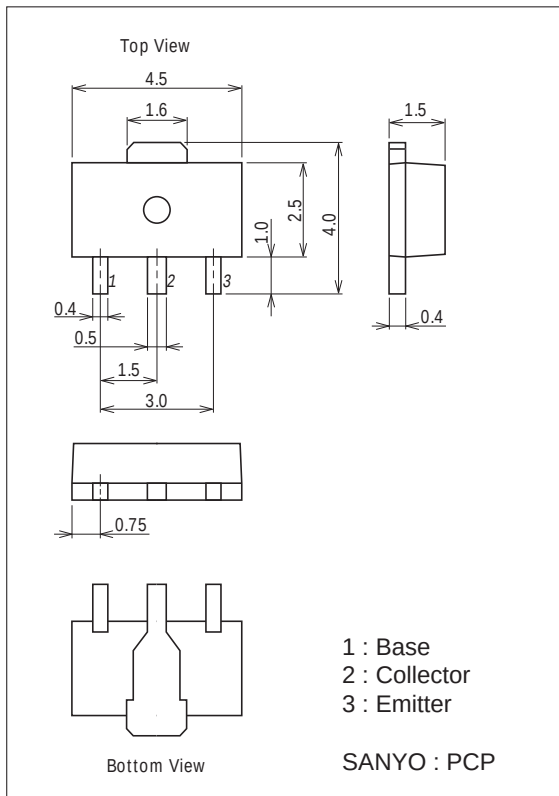
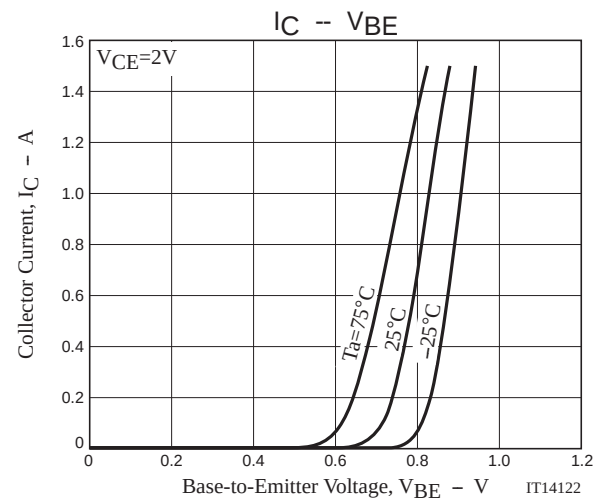
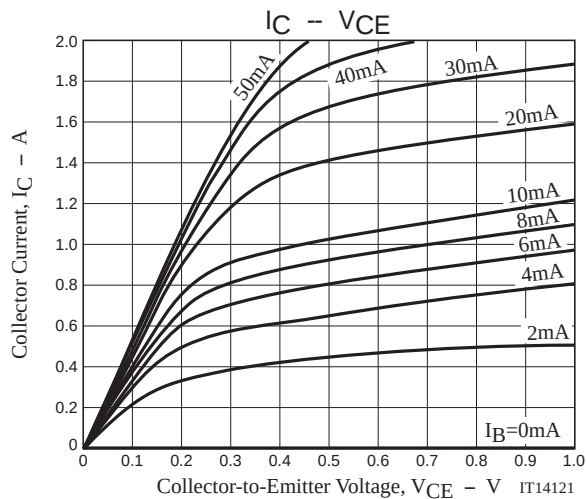
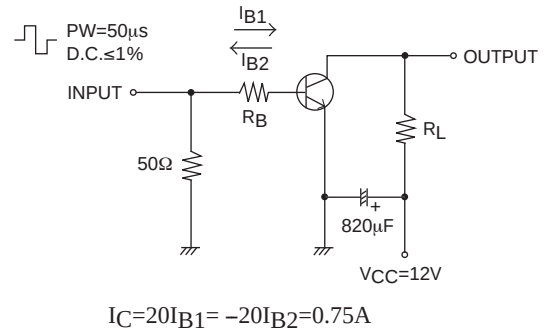
Electrical Characteristics at $T_a=25^\circ\text{C}$

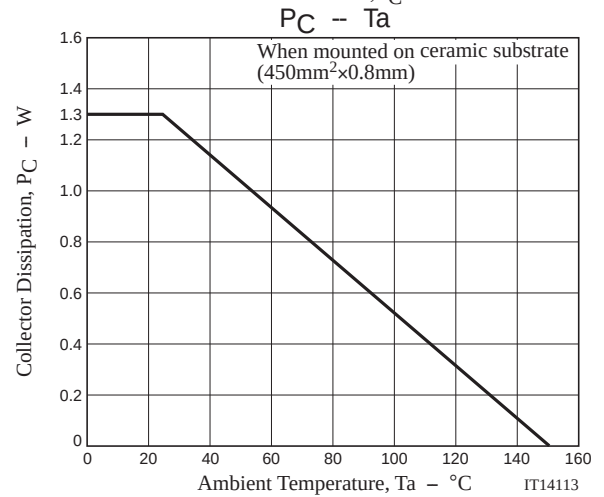
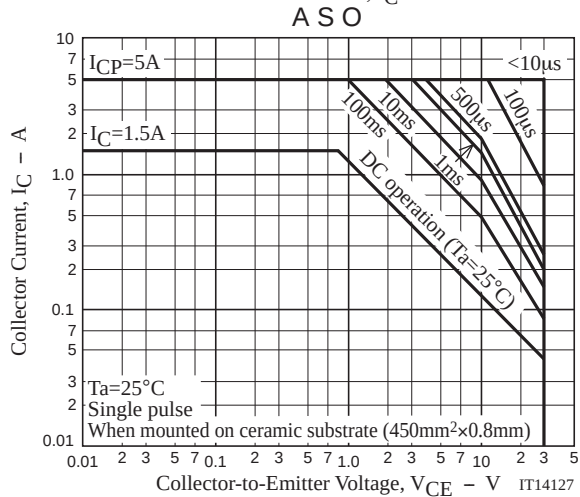
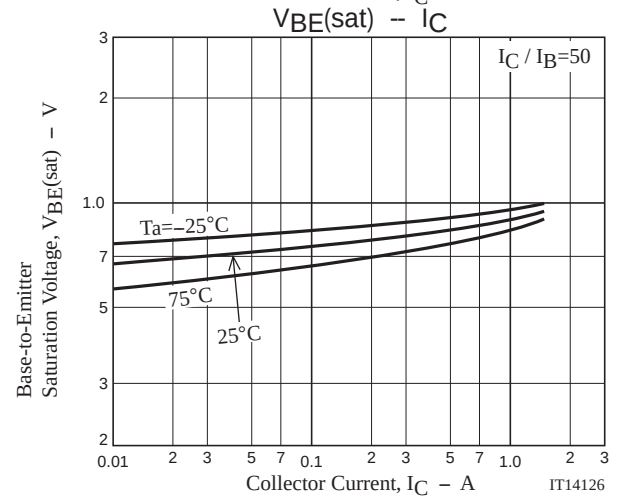
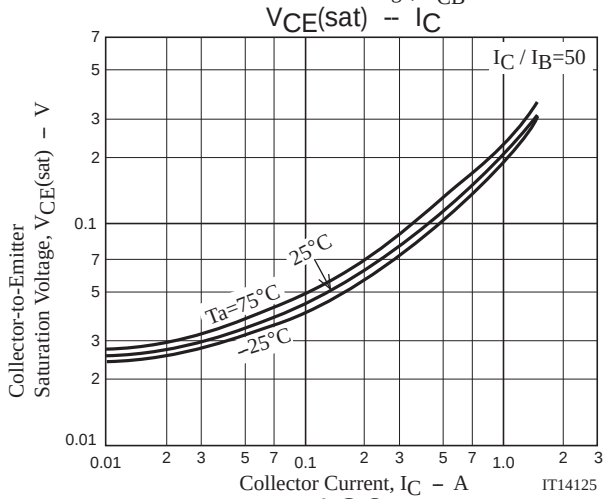
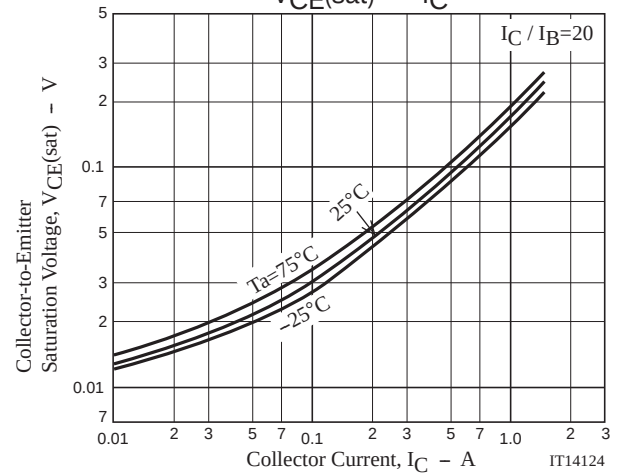
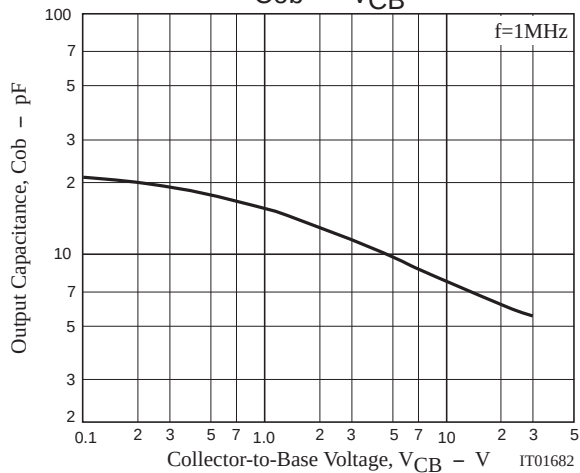
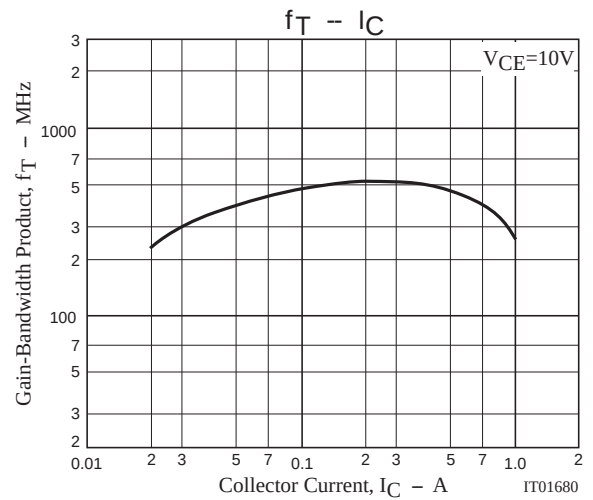
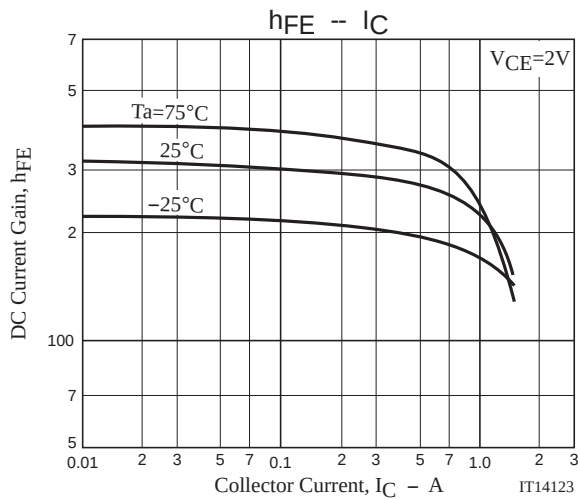
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=30\text{V}, I_E=0\text{A}$			0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0\text{A}$			0.1	μA
DC Current Gain	h_{FE}	$V_{CE}=2\text{V}, I_C=100\text{mA}$	200		560	
Gain-Bandwidth Product	f_T	$V_{CE}=10\text{V}, I_C=300\text{mA}$		500		MHz
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, f=1\text{MHz}$		8		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=0.75\text{A}, I_B=15\text{mA}$		150	225	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=0.75\text{A}, I_B=15\text{mA}$		0.85	1.2	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0\text{A}$	40			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, R_{BE}=\infty$	30			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0\text{A}$	5			V
Turn-On Time	t_{on}	See specified Test Circuit.		35		ns
Storage Time	t_{stg}	See specified Test Circuit.		205		ns
Fall Time	t_f	See specified Test Circuit.		30		ns

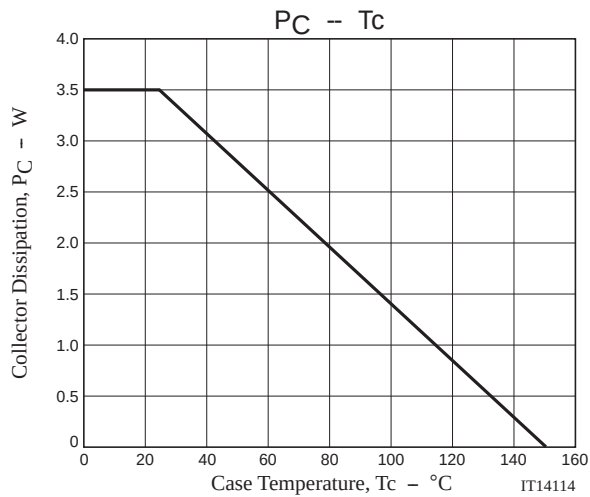
Package Dimensions

unit : mm (typ)

7007A-004

**Switching Time Test Circuit**





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