



SANYO Semiconductors

## DATA SHEET

# FP210

 PNP Epitaxial Planar Silicon Transistor  
**Driver Applications**

## Features

- Composite type with 2 transistors (PNP) contained in one package, facilitating high-density mounting.
- The FP210 is formed with 2 chips being equivalent to the 2SB1123, placed in one package.

## Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CB0</sub>		-60	V
Collector-to-Emitter Voltage	V <sub>CEO</sub>		-50	V
Emitter-to-Base Voltage	V <sub>EBO</sub>		-6	V
Collector Current	I <sub>C</sub>		-2	A
Collector Current (Pulse)	I <sub>CP</sub>		-4	A
Base Current	I <sub>B</sub>		-400	mA
Collector Dissipation	P <sub>C</sub>	Mounted on a ceramic board (250mm <sup>2</sup> X0.8mm) 1unit	0.8	W
Total Dissipation	P <sub>T</sub>	Mounted on a ceramic board (250mm <sup>2</sup> X0.8mm)	1.1	W
Junction Temperature	T <sub>J</sub>		150	°C
Storage Temperature	T <sub>stg</sub>		-55 to +150	°C

**Electrical Characteristics** at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I <sub>CBO</sub>	V <sub>CB</sub> =-50V, I <sub>E</sub> =0A			-100	nA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =-4V, I <sub>C</sub> =0A			-100	nA
DC Current Gain	h <sub>FE</sub>	V <sub>CE</sub> =-2V, I <sub>C</sub> =-100mA	140		400	
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> =-10V, I <sub>C</sub> =-50mA		150		MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =-10V, f=1MHz		22		pF
Collector-to-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =-1A, I <sub>B</sub> =-50mA		-0.3	-0.7	V
Base-to-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =-1A, I <sub>B</sub> =-50mA		-0.9	-1.2	V
Collector-to-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =-10μA, I <sub>E</sub> =0A	-60			V
Collector-to-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =-1mA, R <sub>BE</sub> =∞	-50			V
Emitter-to-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =-10μA, I <sub>C</sub> =0A	-6			V
Turn-ON Time	t <sub>on</sub>	See specified Test Circuit.		60		ns
Storage Time	t <sub>stg</sub>	See specified Test Circuit.		450		ns
Fall Time	t <sub>f</sub>	See specified Test Circuit.		30		ns

Marking : 210

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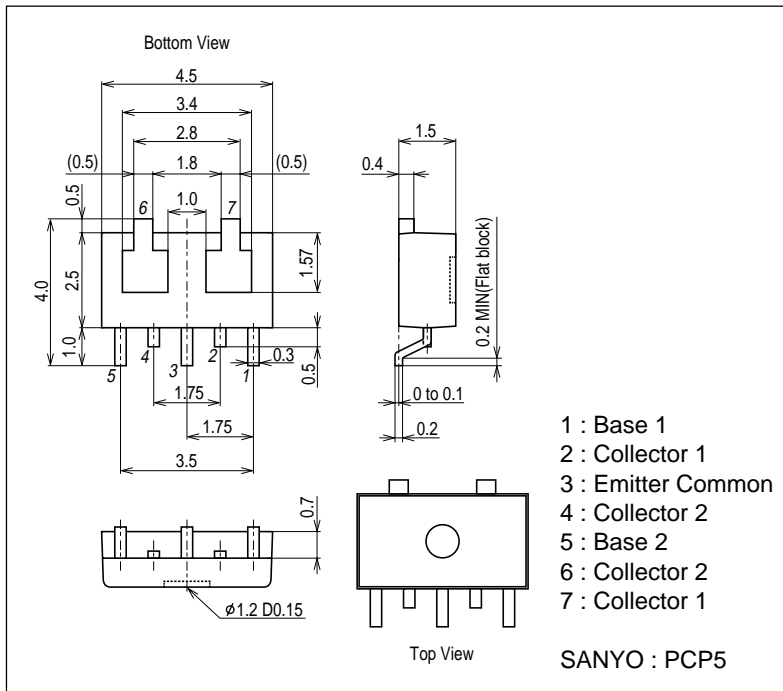
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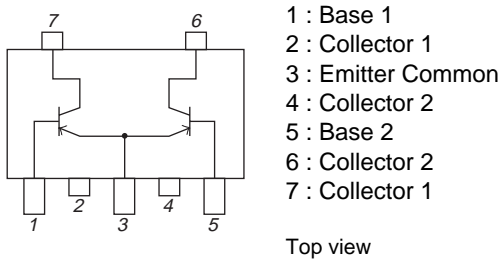
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**Package Dimensions**

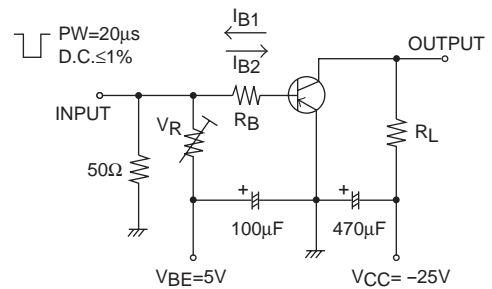
unit : mm  
7010-006



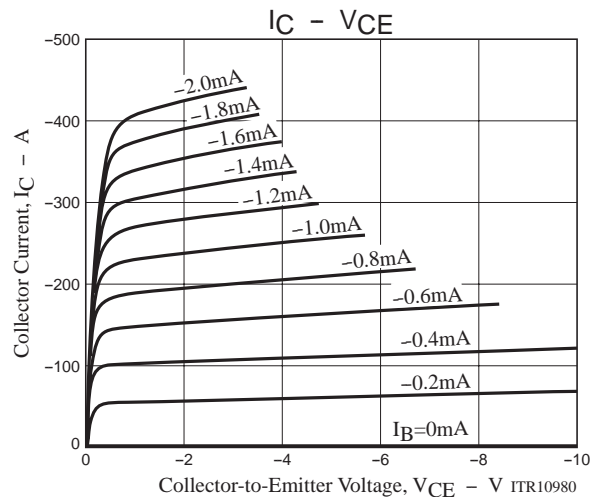
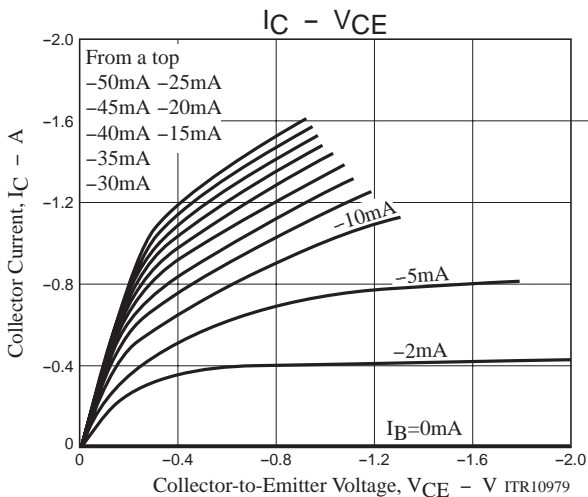
**Electrical Connection**

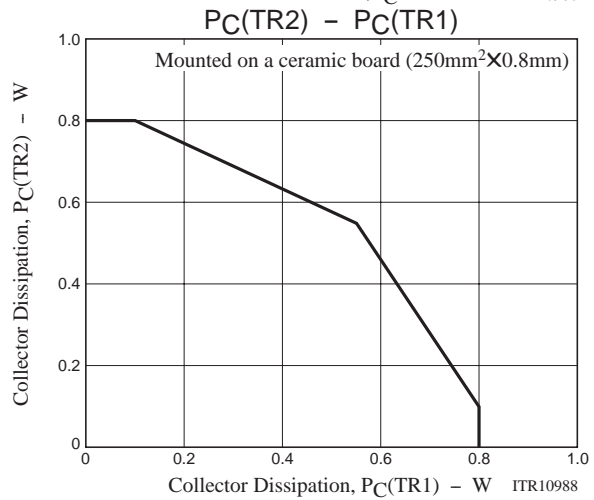
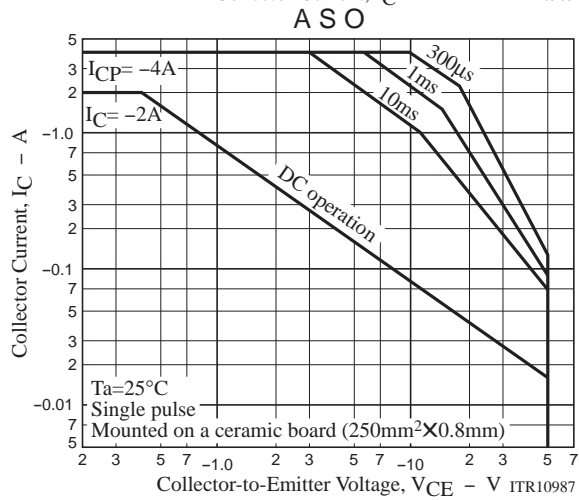
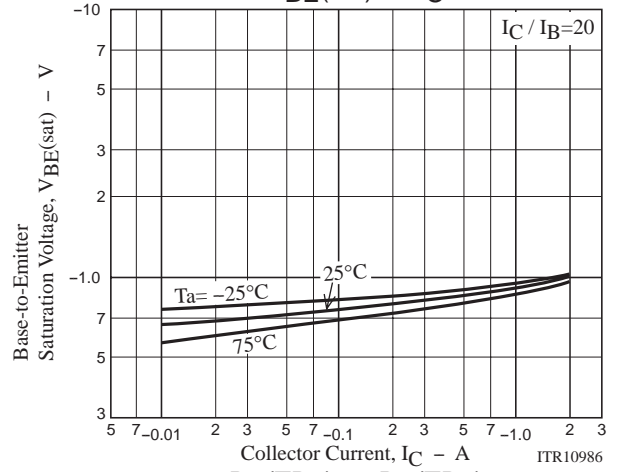
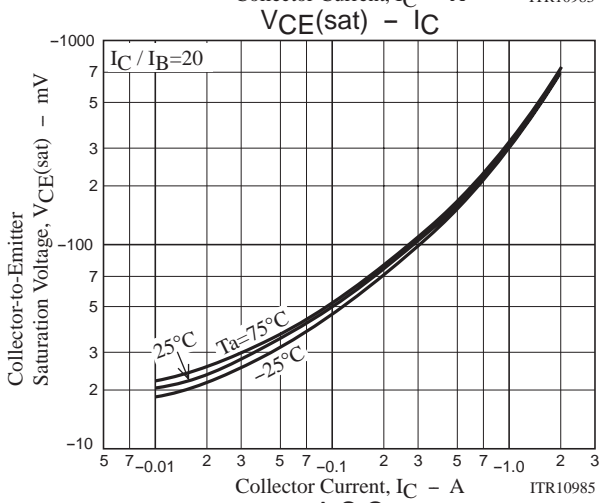
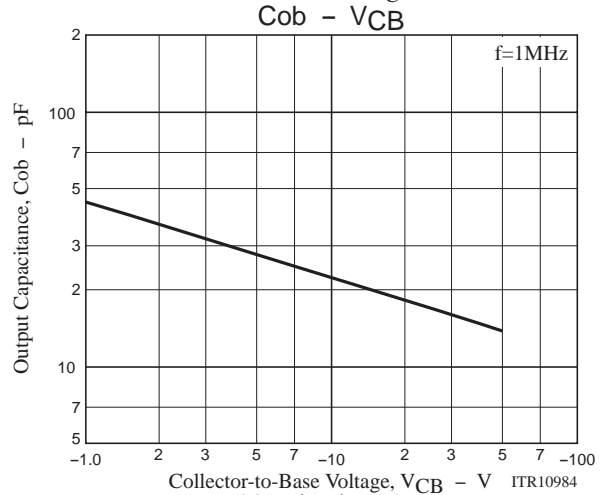
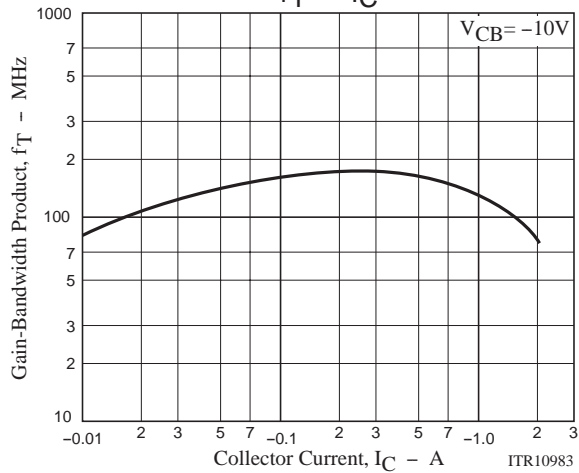
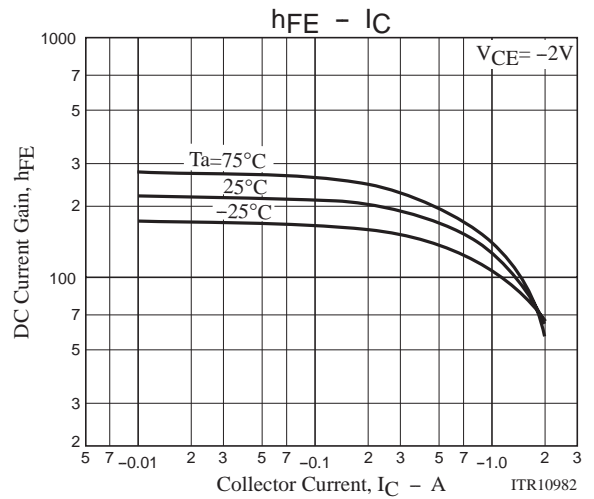
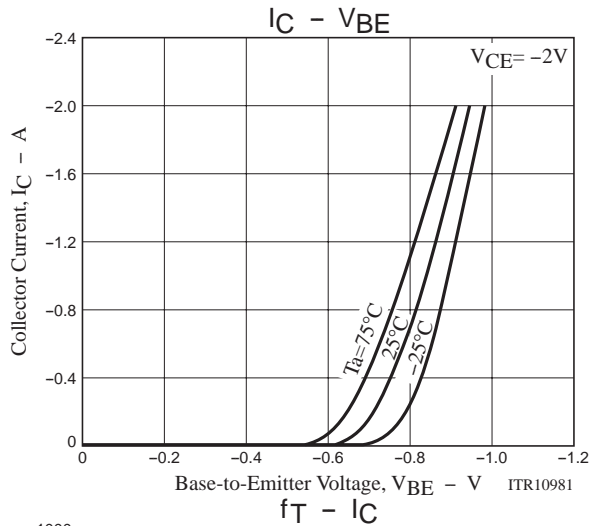


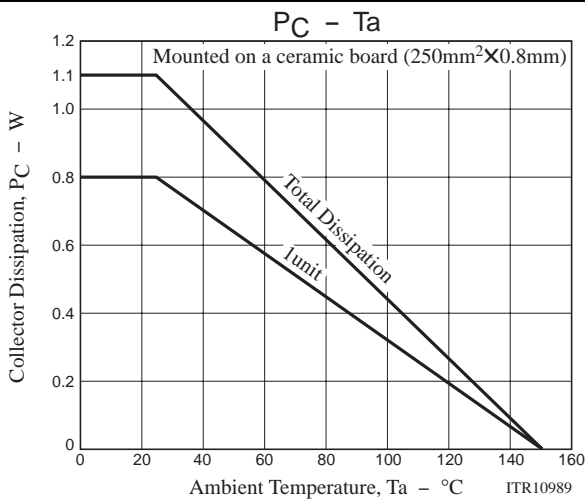
**Switching Time Test Circuit**



$I_C=10I_{B1}=-10I_{B2}=-500mA$







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