



FP209

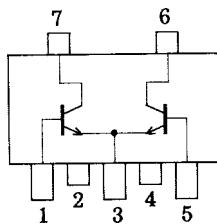
NPN Epitaxial Planar Silicon Transistor

Driver Applications

Features

- Composite type with 2 transistors (NPN) contained in one package, facilitating high-density mounting.
- The FP209 is formed with 2 chips being equivalent to the 2SD1621, placed in one package.

Electrical Connection



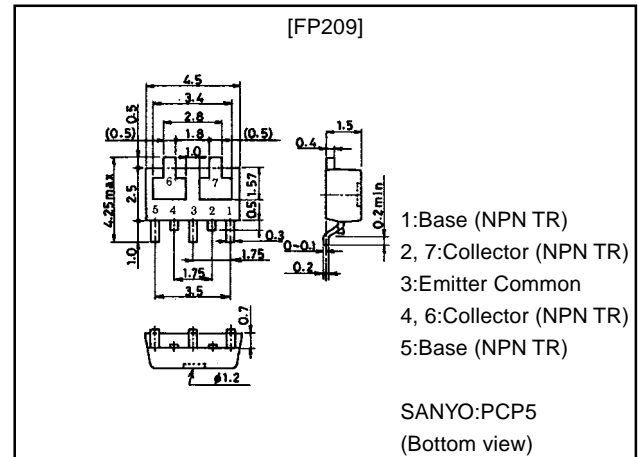
- 1:Base (NPN TR)
 2, 7:Collector (NPN TR)
 3:Emitter Common
 4, 6:Collector (NPN TR)
 5:Base (NPN TR)

(Top view)

Package Dimensions

unit:mm

2097A



- 1:Base (NPN TR)
 2, 7:Collector (NPN TR)
 3:Emitter Common
 4, 6:Collector (NPN TR)
 5:Base (NPN TR)

SANYO:PCP5
 (Bottom view)

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		30	V
Collector-to-Emitter Voltage	V_{CE0}		25	V
Emitter-to-Base Voltage	V_{EB0}		6	V
Collector Current	I_C		2	A
Collector Current (Pulse)	I_{CP}		5	A
Base Current	I_B		400	mA
Collector Dissipation	P_C	Mounted on ceramic board (250mm \times 0.8mm) 1unit	0.8	W
Total Dissipation	P_T	Mounted on ceramic board (250mm \times 0.8mm)	1.1	W
Junction Temperature	T_j		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

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

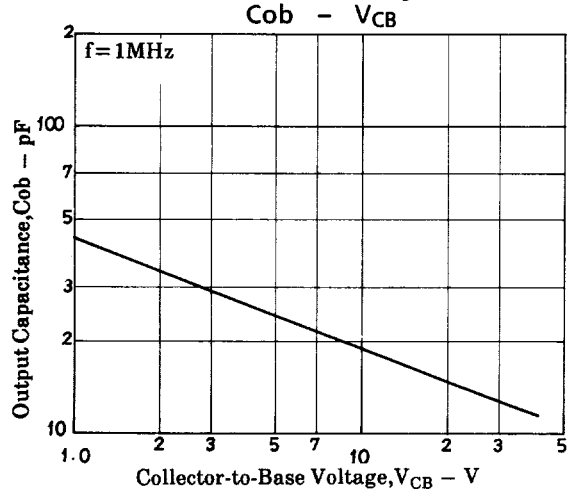
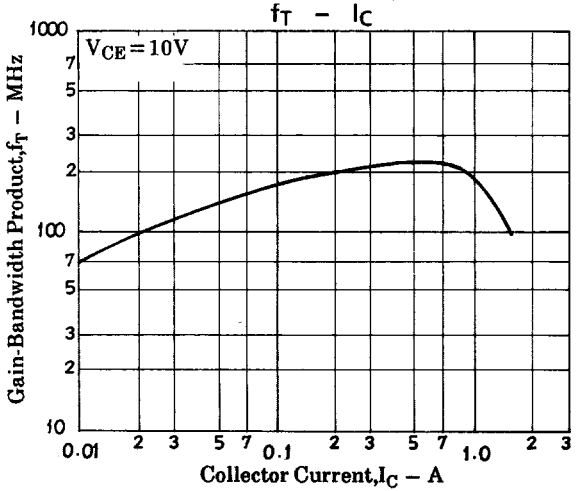
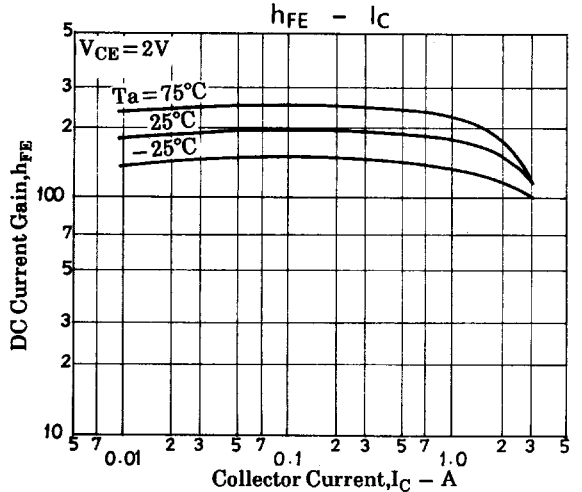
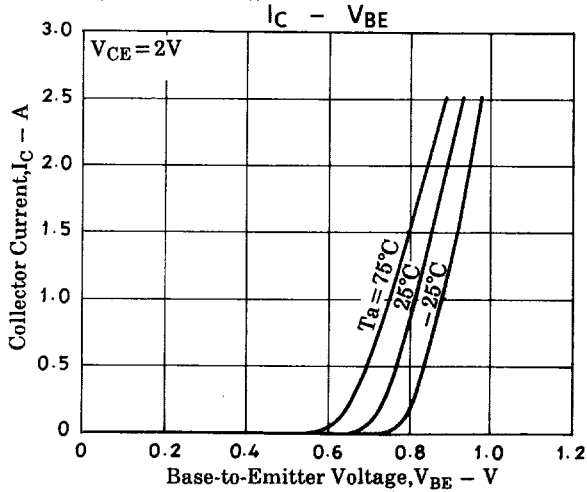
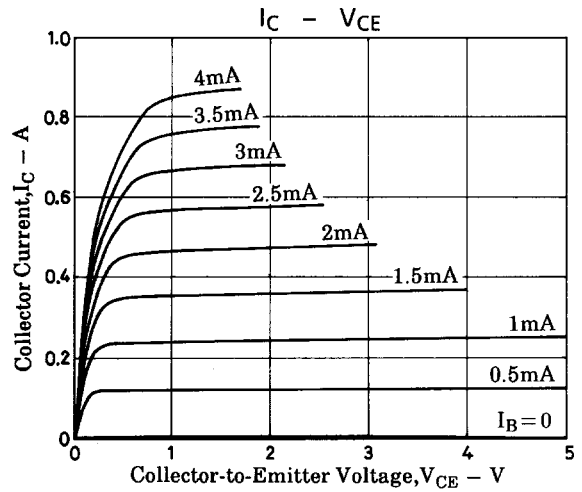
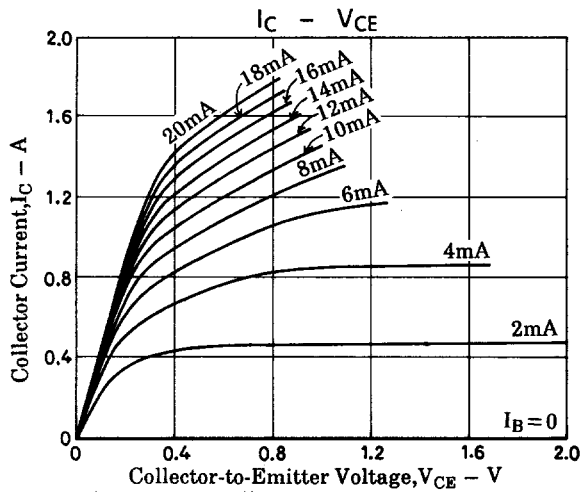
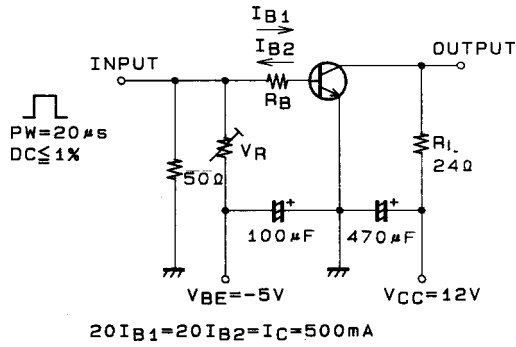
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=20\text{V}, I_E=0$			100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0$			100	nA
DC Current Gain	h_{FE}	$V_{CE}=2\text{V}, I_C=100\text{mA}$	140		400	
Gain-Bandwidth Product	f_T	$V_{CE}=10\text{V}, I_C=50\text{mA}$		150		MHz
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, f=1\text{MHz}$		19		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=1.5\text{A}, I_B=75\text{mA}$		0.18	0.4	V
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=1.5\text{A}, I_B=75\text{mA}$		0.85	1.2	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0$	30			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, R_{BE}=\infty$	25			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0$	6			V
Turn-ON Time	t_{on}	See specified Test Circuit		60		ns
Storage Time	t_{stg}	See specified Test Circuit		500		ns
Fall Time	t_f	See specified Test Circuit		25		ns

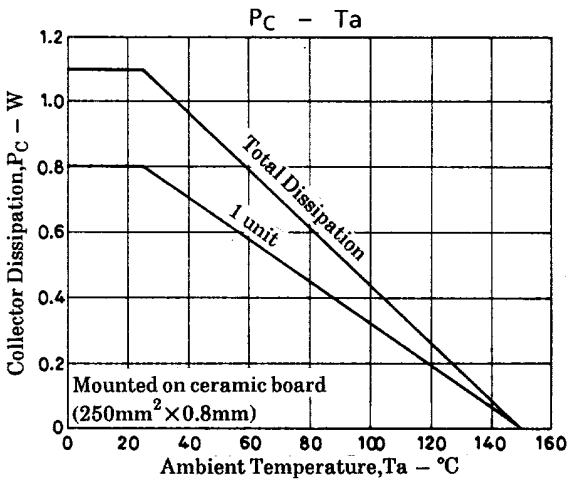
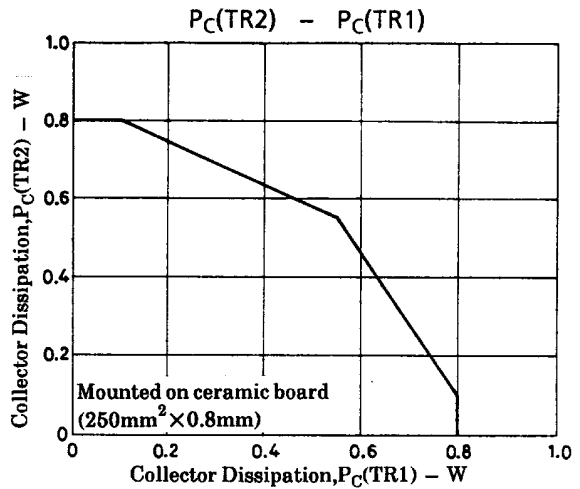
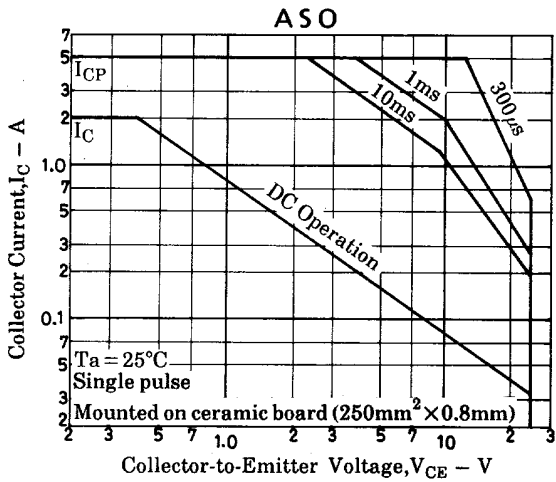
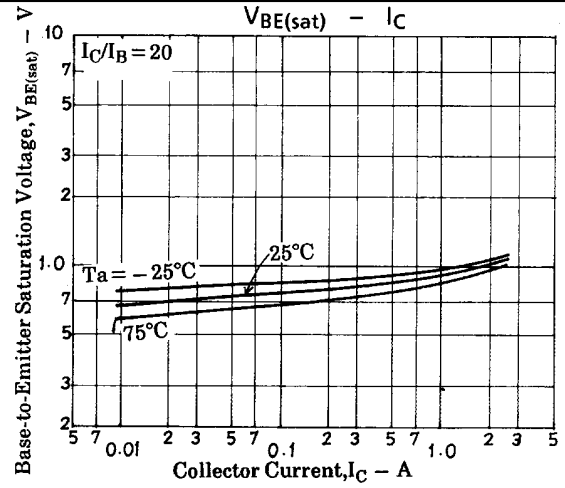
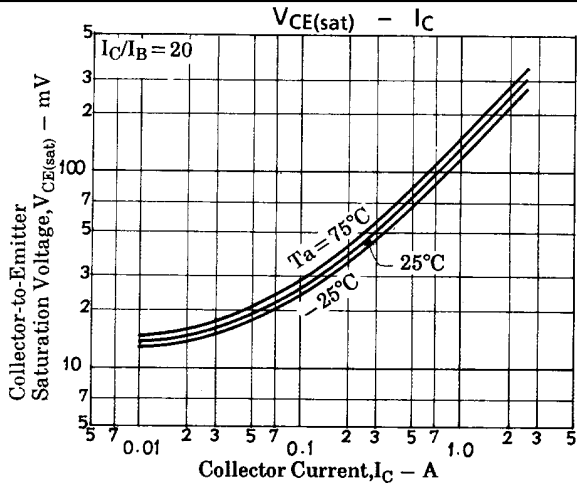
Marking:209

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Switching Time Test Circuit





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