



FP204

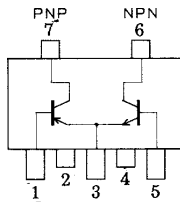
PNP/NPN Epitaxial Planar Silicon Transistors

Push-Pull Circuit Applications

Features

- Composite type with a PNP transistor and an NPN transistor in one package, facilitating high-density mounting.
- The FP204 is composed of 2 chips, one being equivalent to the 2SB1123 and 2SD1623, which are placed in one package.

Electrical Connection



- 1:Base
2:Collector
3:Emitter Common
4:Collector
5:Base
6:Collector
7:Collector
(Top view)

Specifications

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

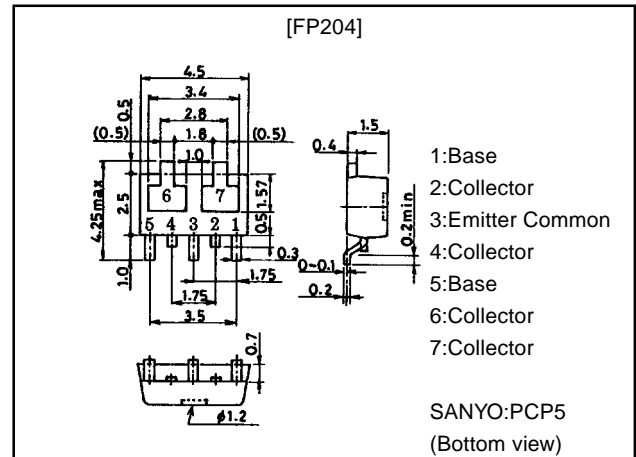
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		(-)60	V
Collector-to-Emitter Voltage	V_{CE0}		(-)50	V
Emitter-to-Base Voltage	V_{EBO}		(-)6	V
Collector Current	I_C		(-)2	A
Collector Current (Pulse)	I_{CP}		(-)4	A
Base Current	I_B		(-)0.4	A
Collector Dissipation	P_C	Mounted on ceramic board (250mm ² ×0.8mm) 1unit	0.8	W
Total Power Dissipation	P_T	Mounted on ceramic board (250mm ² ×0.8mm)	1.1	W
Junction Temperature	T_j		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

() : PNP

Package Dimensions

unit:mm

2097A



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

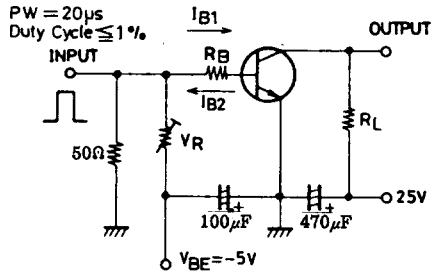
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CB0}	$V_{CB} = (-)50\text{V}, I_E = 0$			(-)100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = (-)4\text{V}, I_C = 0$			(-)100	nA
DC Current Gain	h_{FE}	$V_{CE} = (-)2\text{V}, I_C = (-)100\text{mA}$	140		400	
Gain-Bandwidth Product	f_T	$V_{CE} = (-)10\text{V}, I_C = (-)50\text{mA}$		150		MHz
Output Capacitance	C_{ob}	$V_{CB} = (-)10\text{V}, f = 1\text{MHz}$		(22)		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)1.0\text{A}, I_B = (-)50\text{mA}$		(-250)	(-500)	mV
				150	300	mV
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)1.0\text{A}, I_B = (-)50\text{mA}$		(-)0.9	(-)1.2	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)10\mu\text{A}, I_E = 0$	(-)60			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1\text{mA}, R_{BE} = \infty$	(-)50			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		(450) 550		ns
Fall Time	t_f	See specified Test Circuit		30		ns

Marking:204

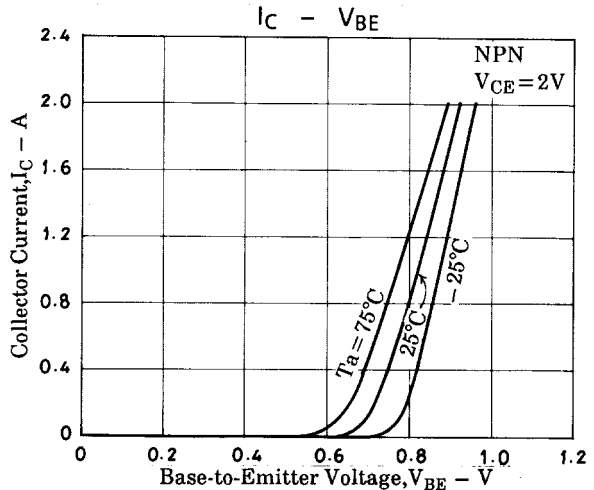
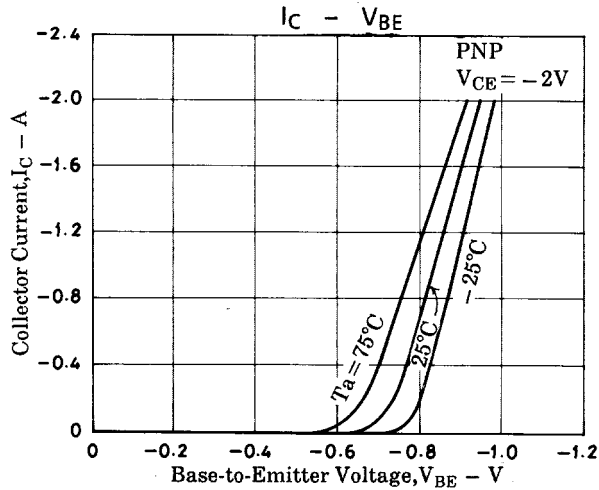
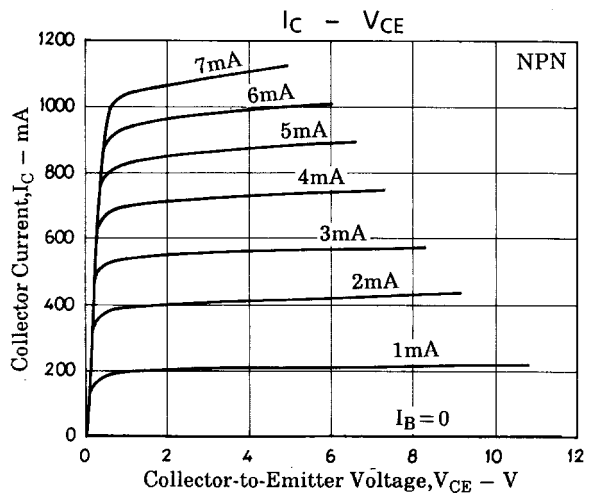
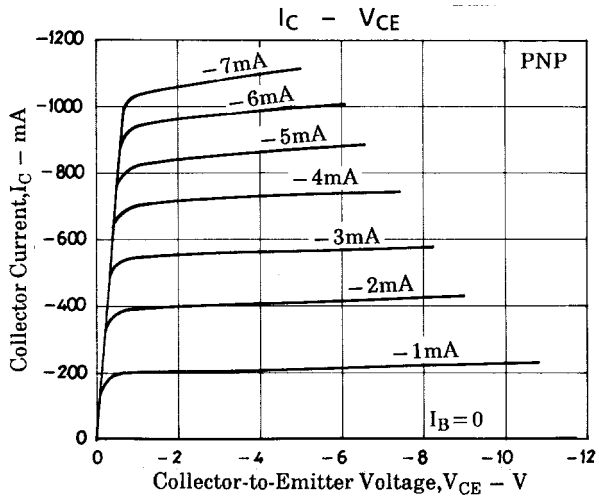
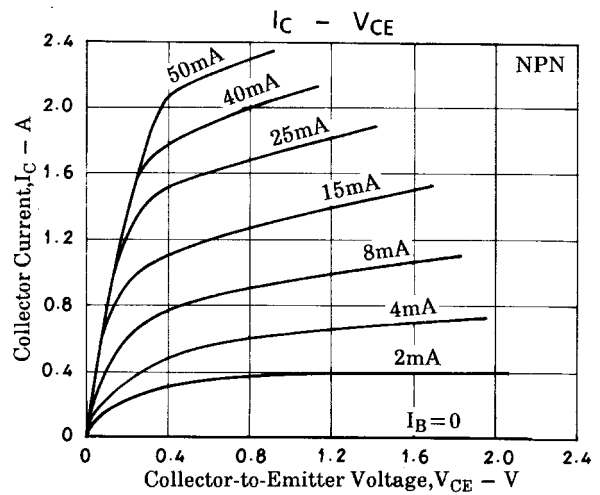
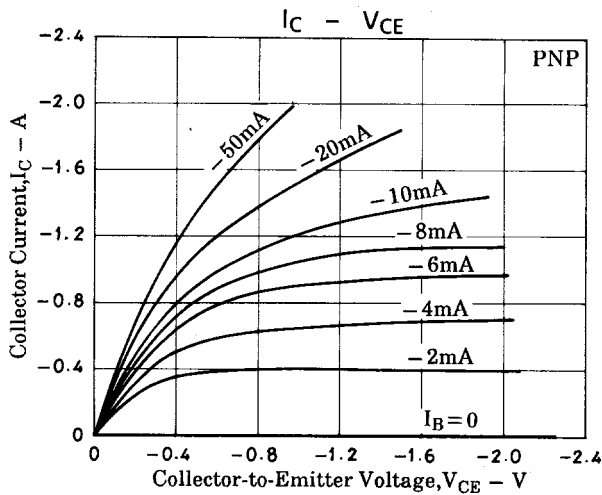
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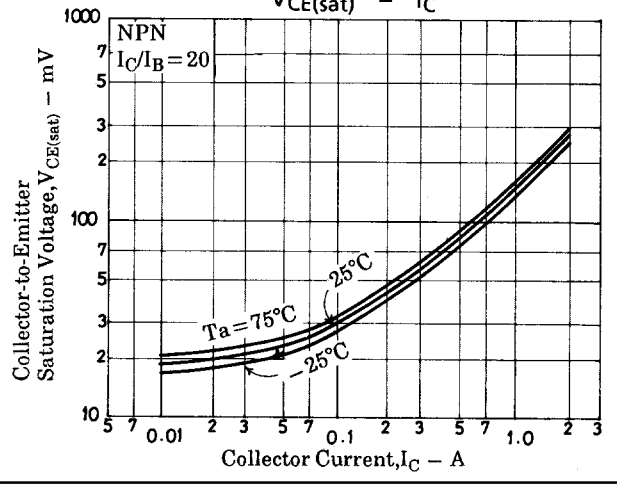
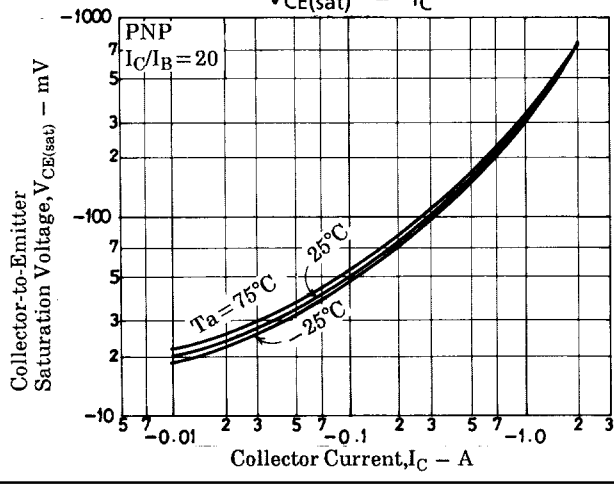
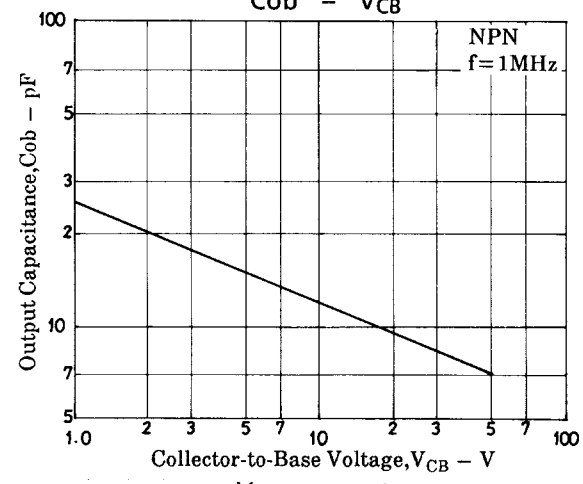
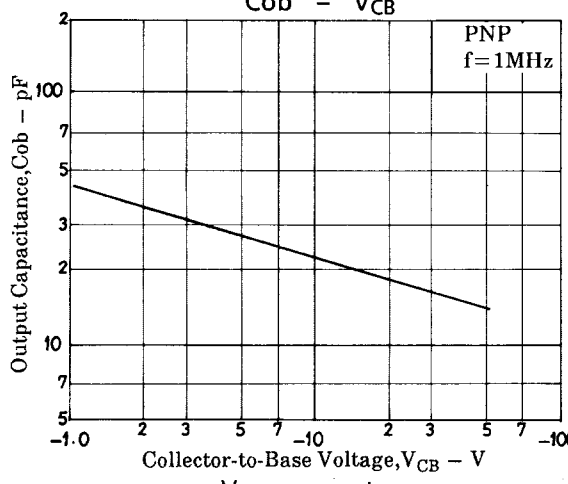
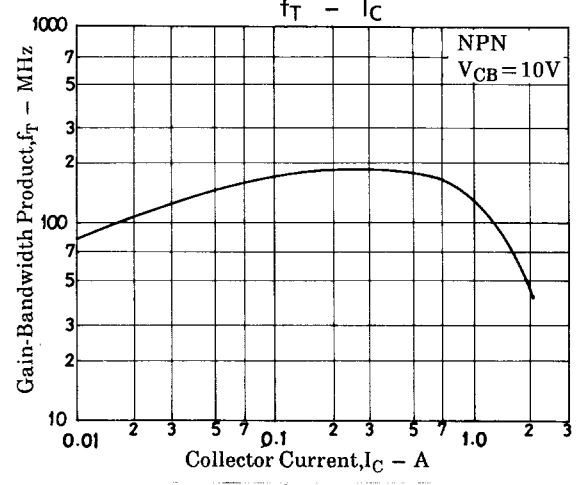
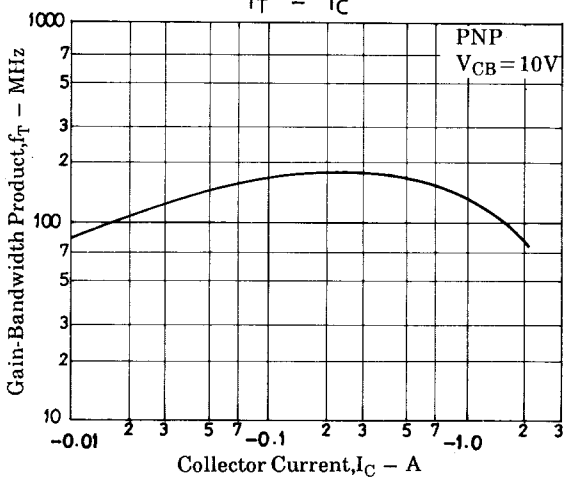
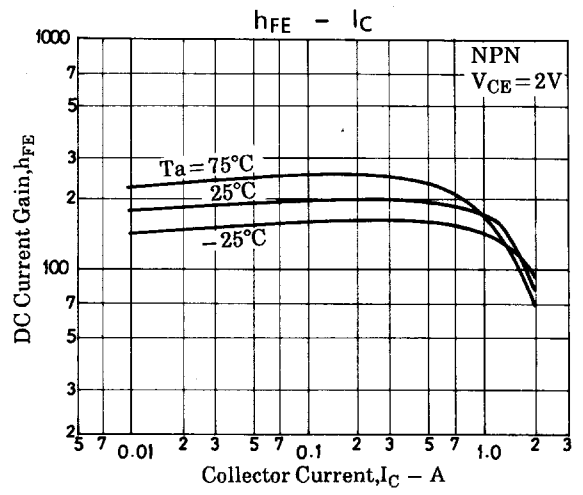
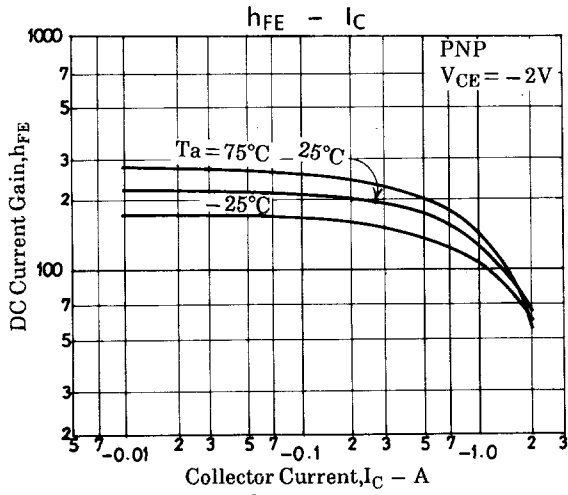
Switching Time Test Circuit



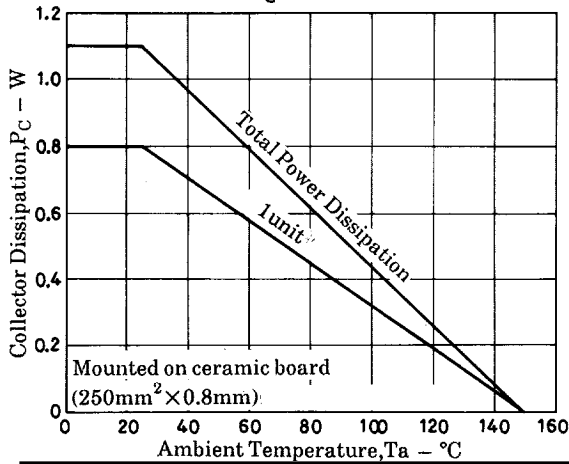
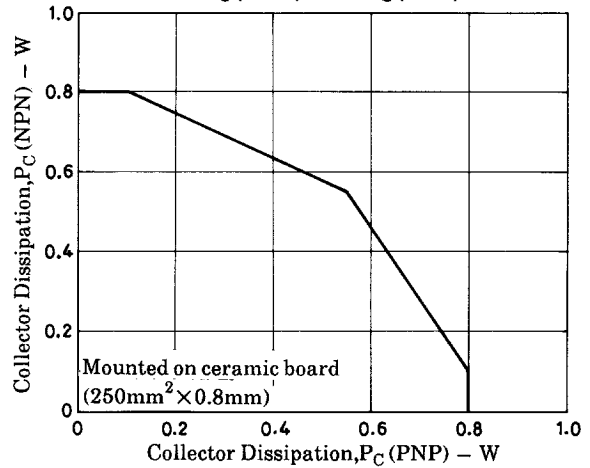
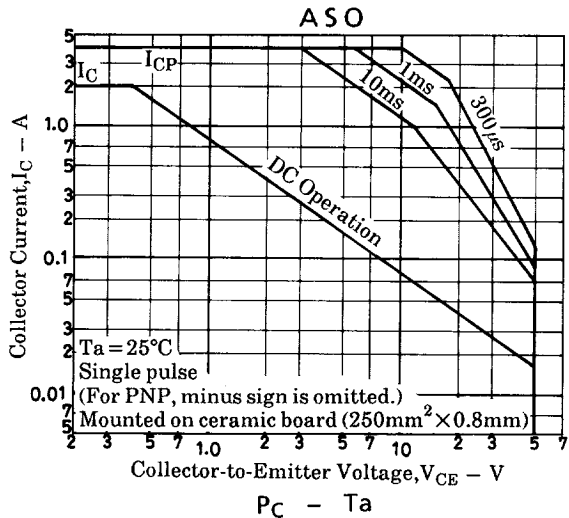
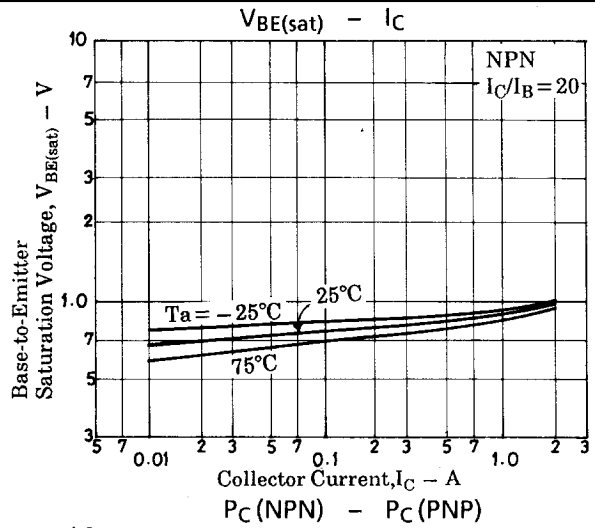
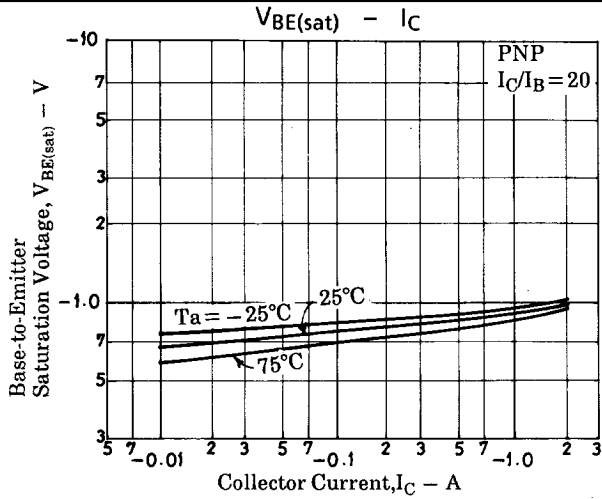
$I_C = 10I_{B1} = -10I_{B2} = 500\text{mA}$, $V_{CC} = 25\text{V}$
 For PNP, the polarity is reversed.



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