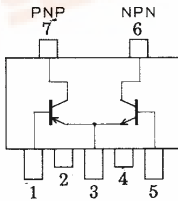


SANYO**FP204**

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 Ta = 25°C**

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(-)60	V
Collector-to-Emitter Voltage	V_{CEO}		(-)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

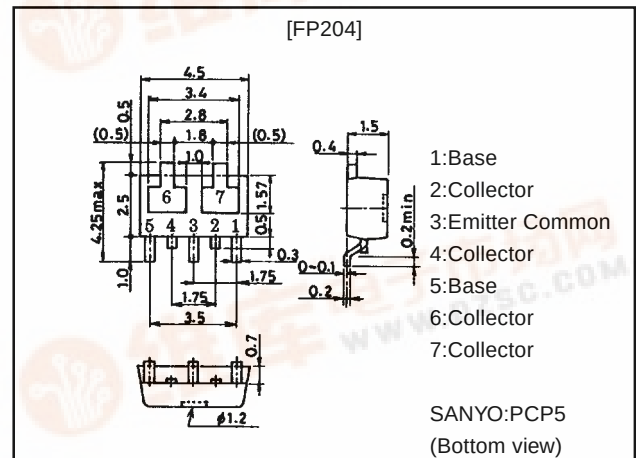
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=(-)50V, I_E=0$			(-)100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)4V, I_C=0$			(-)100	nA
DC Current Gain	h_{FE}	$V_{CE}=(-)2V, I_C=(-)100mA$	140		400	
Gain-Bandwidth Product	f_T	$V_{CE}=(-)10V, I_C=(-)50mA$		150		MHz
Output Capacitance	C_{ob}	$V_{CB}=(-)10V, f=1MHz$		(22)		pF
C-E Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)1.0A, I_B=(-)50mA$		12		pF
				(-250)	(-500)	mV
				150	300	mV
B-E Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)1.0A, I_B=(-)50mA$		(-)0.9	(-)1.2	V
C-B Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0$	(-)60			V
C-E Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-)50			V
E-B Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0$	(-)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

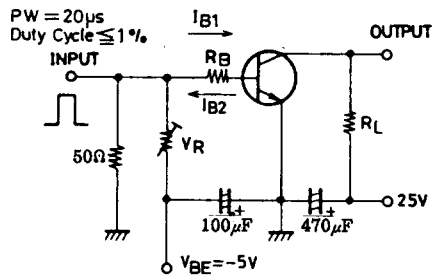
Package Dimensions

unit:mm

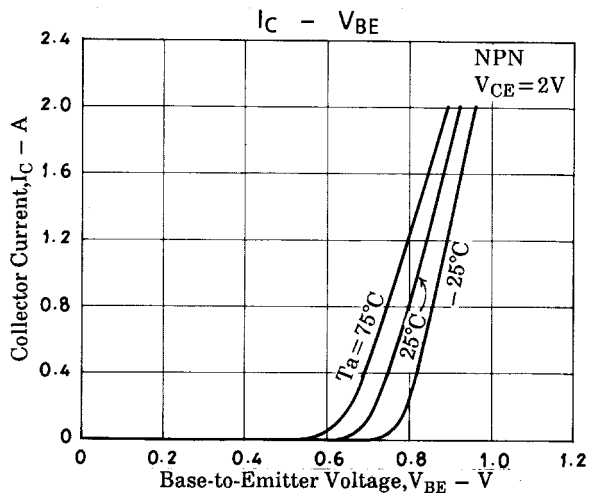
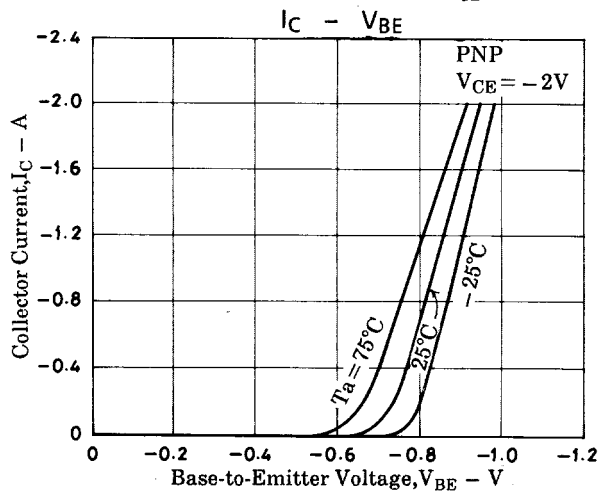
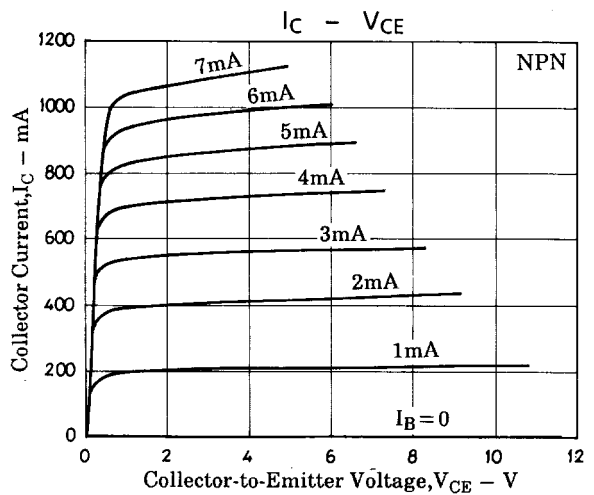
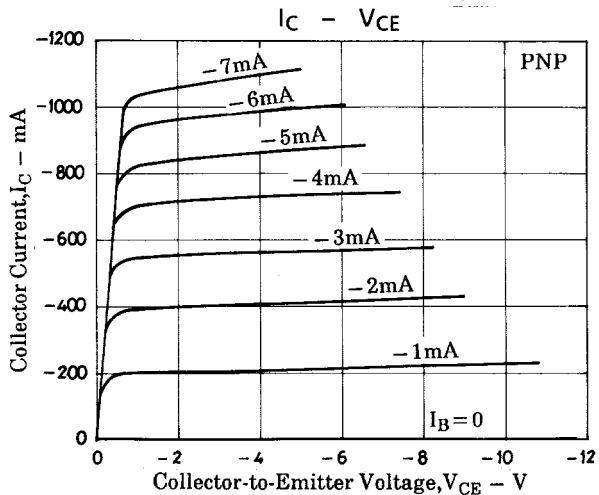
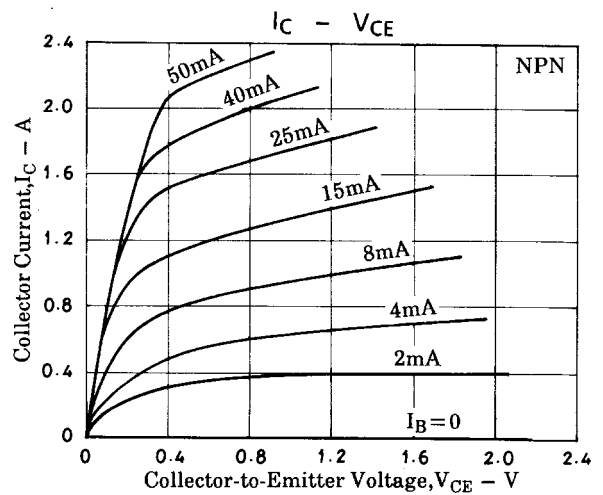
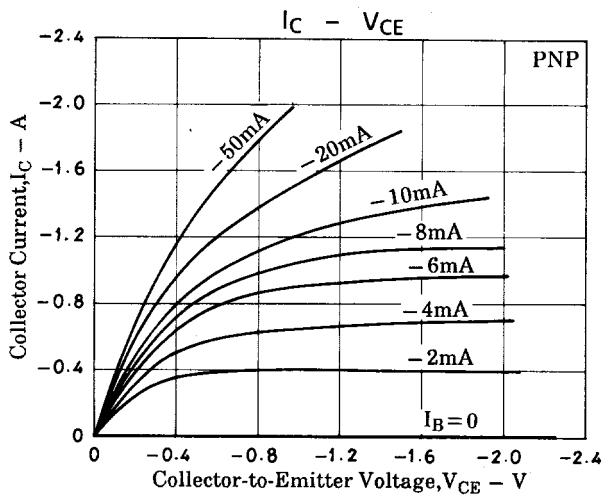
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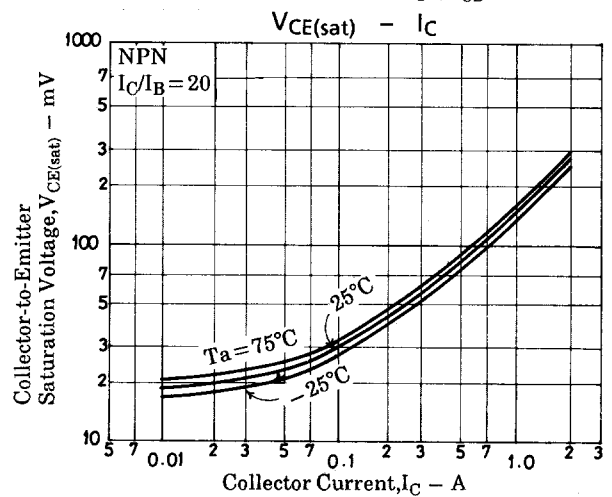
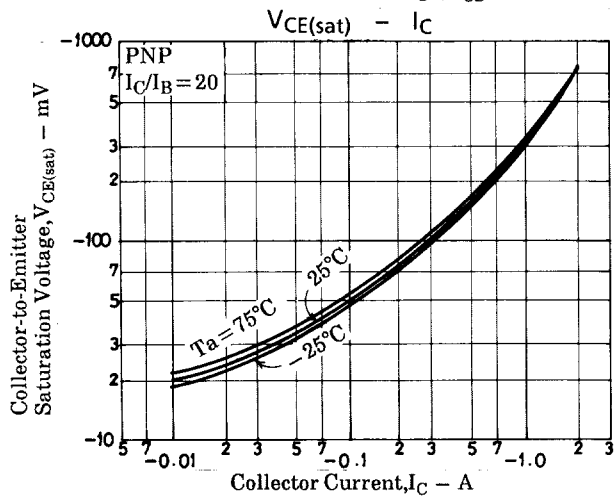
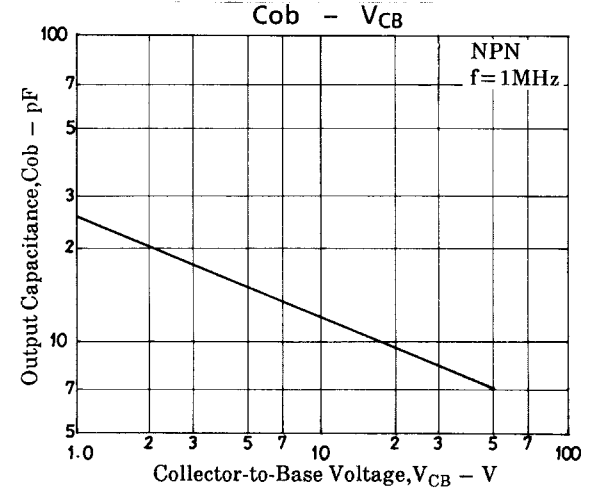
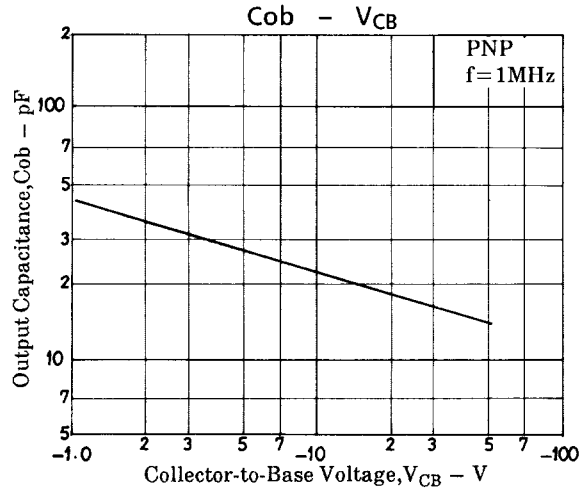
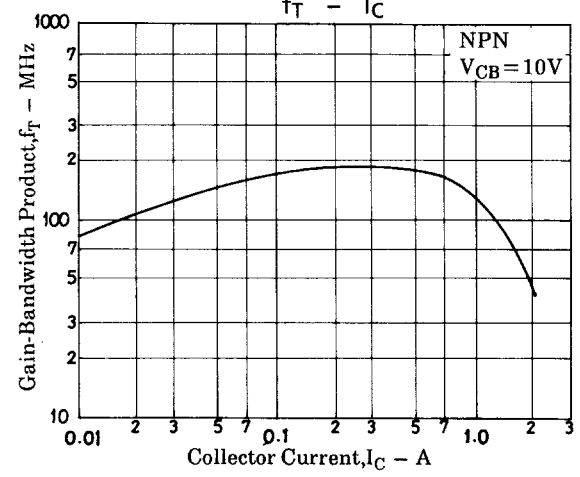
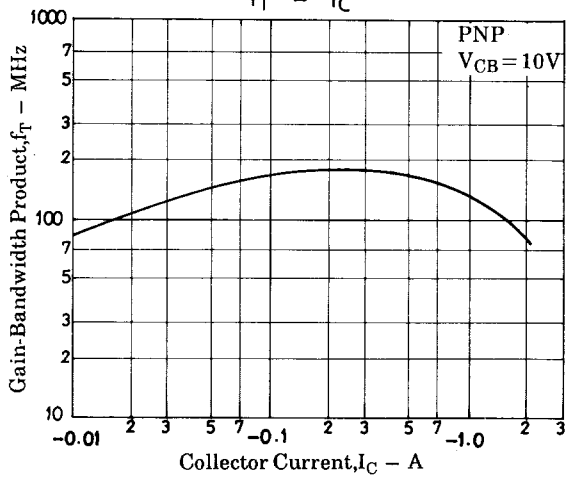
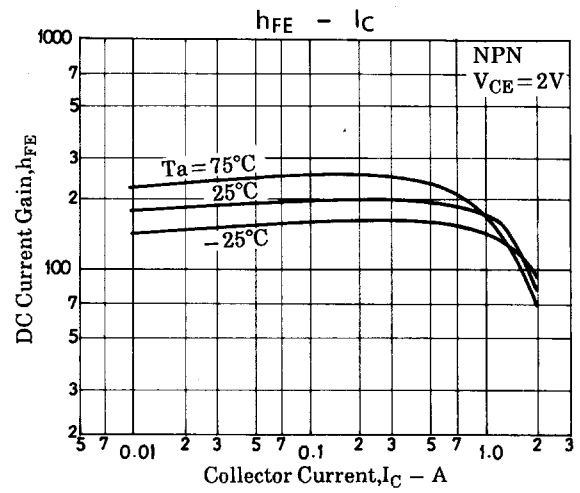
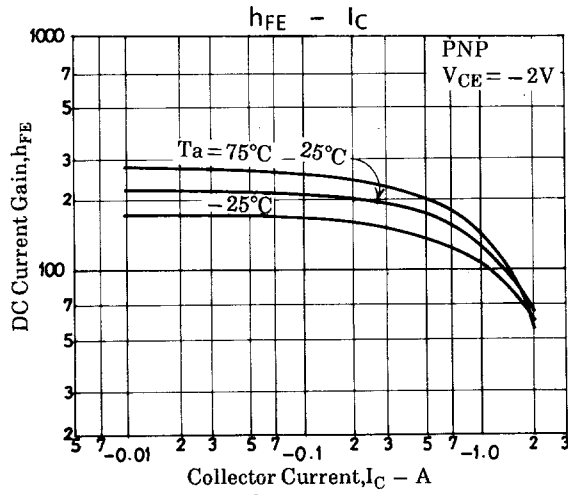
Switching Time Test Circuit



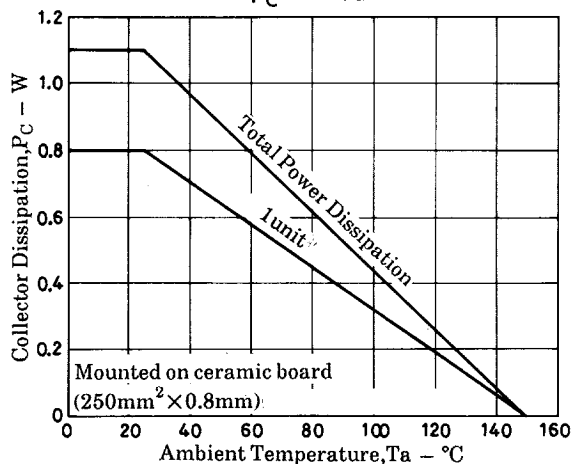
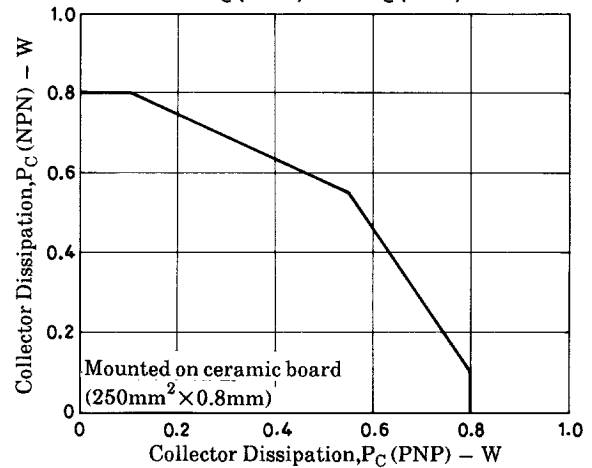
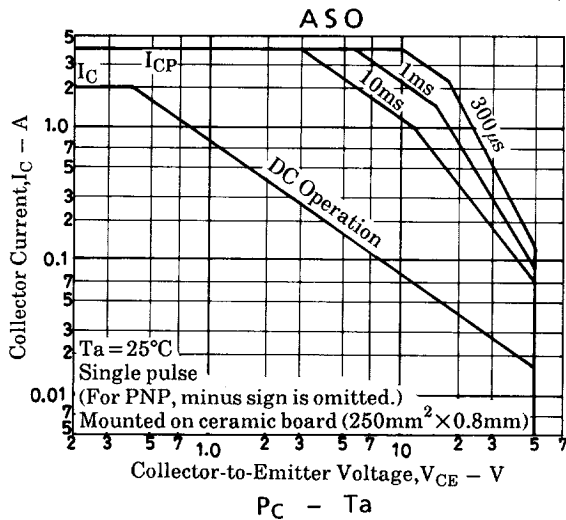
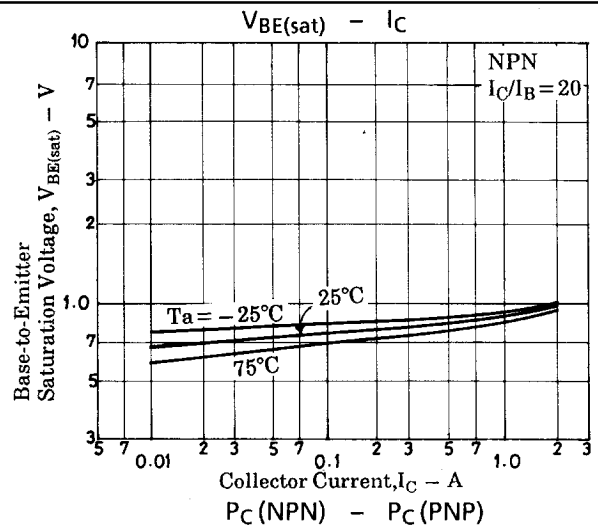
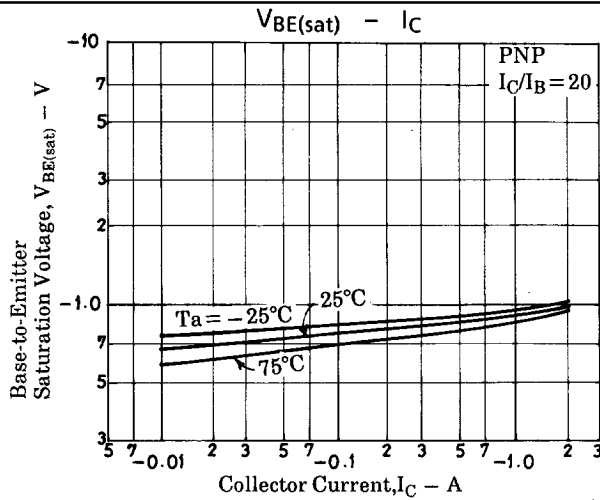
$I_C = 10I_{B1} = -10I_{B2} = 500mA$, $V_{CC} = 25V$
 For PNP, the polarity is reversed.



FP204



FP204



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