



# FP207

## Push-Pull Circuit Applications

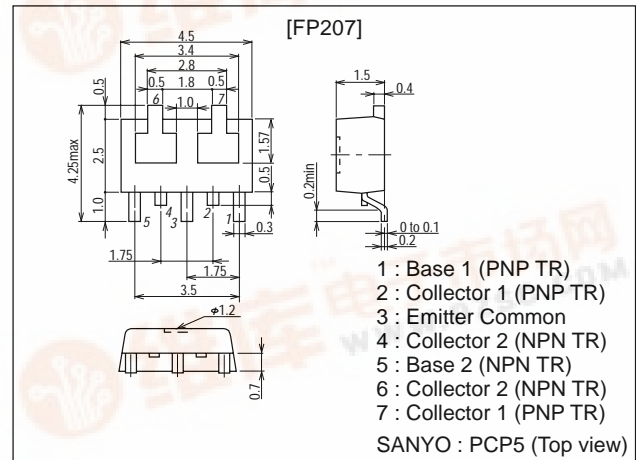
### Features

- Composite type with a PNP transistor and an NPN transistor contained in one package, facilitating high-density mounting.
- Each device incorporated in the FP207 is equivalent to the 2A1729 and to the 2SC4520, respectively.

### Package Dimensions

unit:mm

2097B



### Specifications

( ) : PNP

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CB0}$		(-)50	V
Collector-to-Emitter Voltage	$V_{CEO}$		(-)40	V
Emitter-to-Base Voltage	$V_{EBO}$		(-)5	V
Collector Current	$I_C$		(-)1.5	A
Collector Current (Pulse)	$I_{CP}$		(-)3	A
Base Current	$I_B$		300	mA
Collector Dissipation	$P_C$	Mounted on a ceramic board (250mm <sup>2</sup> ×0.8mm) 1unit	0.8	W
Total Power Dissipation	$P_T$	Mounted on a ceramic board (250mm <sup>2</sup> ×0.8mm)	1.1	W
Junction Temperature	$T_j$		150	°C
Storage Temperature	$T_{stg}$		-55 to +150	°C

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = (-)40V, I_E = 0$			(-)1	μA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = (-)3V, I_C = 0$			(-)1	μA
DC Current Gain	$h_{FE}$	$V_{CE} = (-)2V, I_C = (-)100mA$	100		400	
Gain-Bandwidth Product	$f_T$	$V_{CE} = (-)2V, I_C = (-)100mA$		300		MHz
Output Capacitance	$C_{ob}$	$V_{CB} = (-)10V, f = 1MHz$		(18)13		pF

Marking : 207

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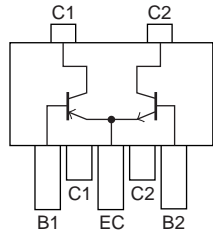


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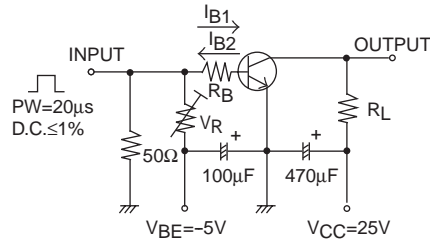
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)800mA, I_B=(-)40mA$		(-0.3)	(-0.8)	mV
				0.25	0.7	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)800mA, I_B=(-)40mA$		(-0.9)	(-1.3)	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0$	(-50)			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-40)			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0$	(-5)			V
Turn-ON Time	$t_{on}$	See specified Test Circuit		(50)	(100)	ns
				50	100	ns
Storage Time	$t_{stg}$	See specified Test Circuit		(120)	(220)	ns
				150	270	ns
Fall Time	$t_f$	See specified Test Circuit		(30)30	(80)80	ns

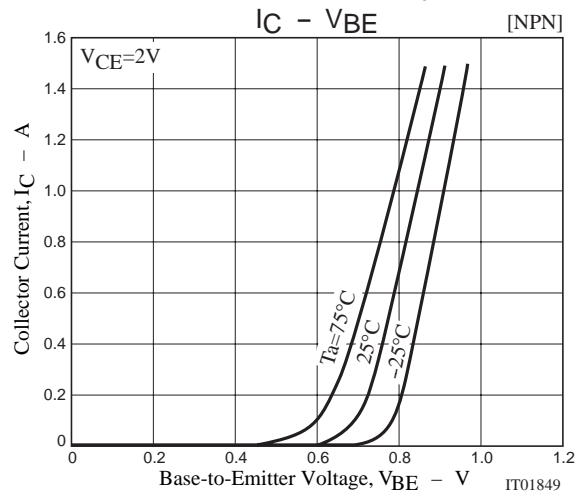
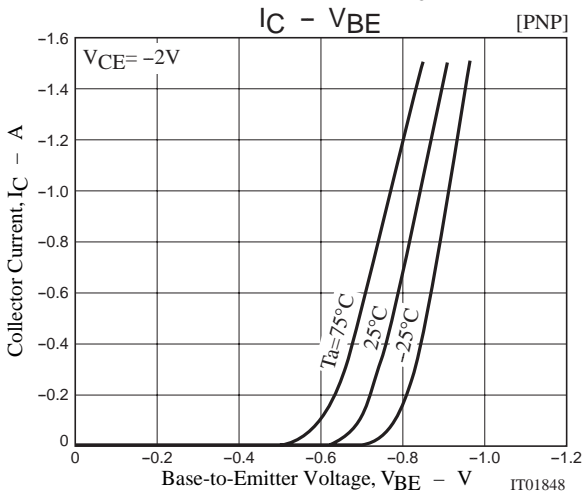
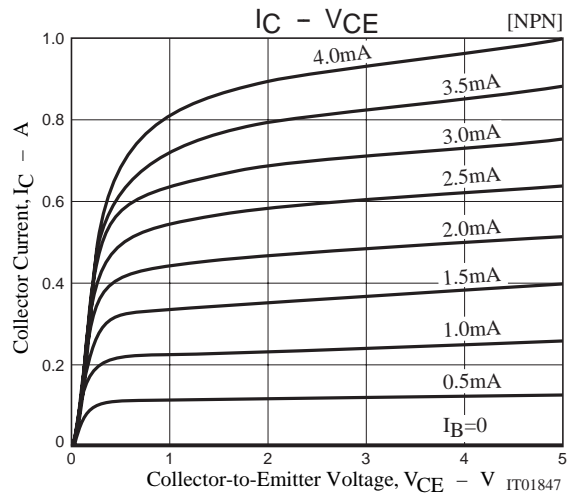
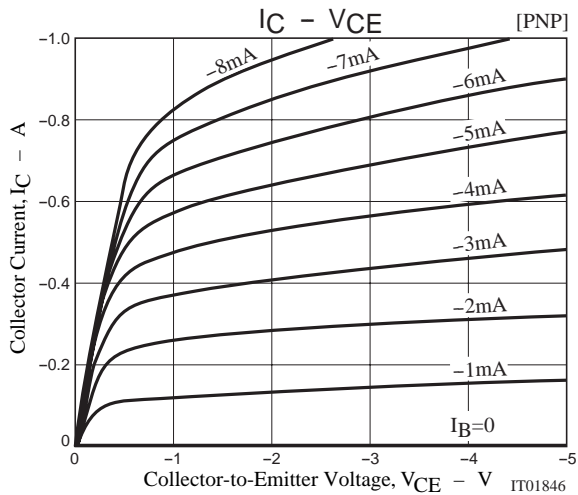
## Electrical Connection (Top view)



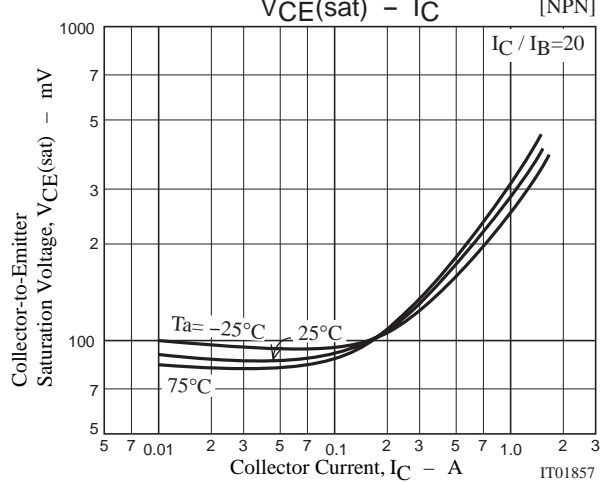
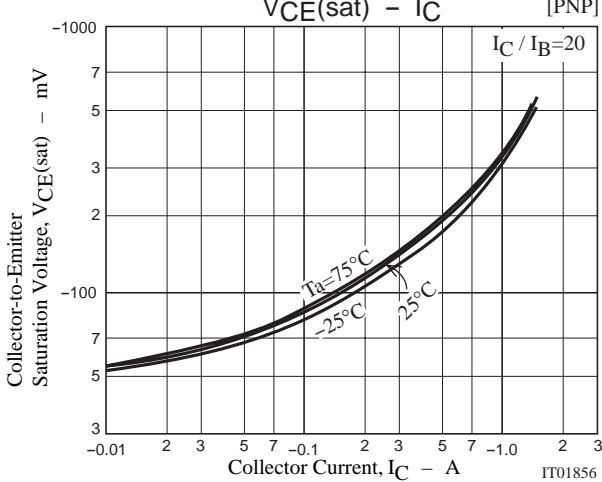
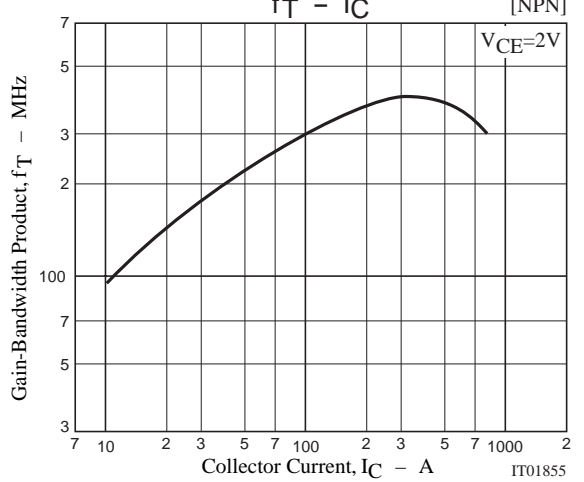
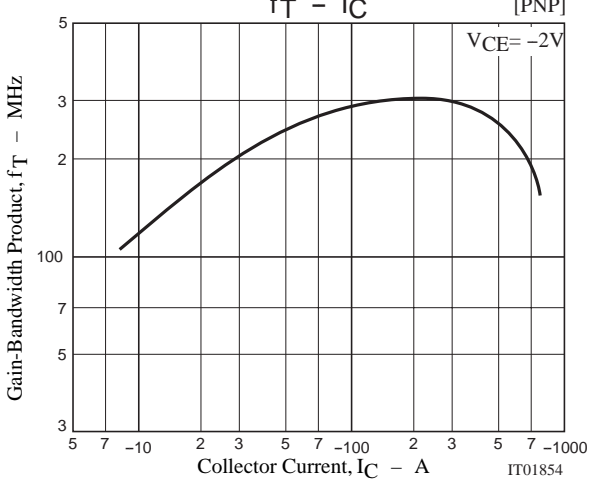
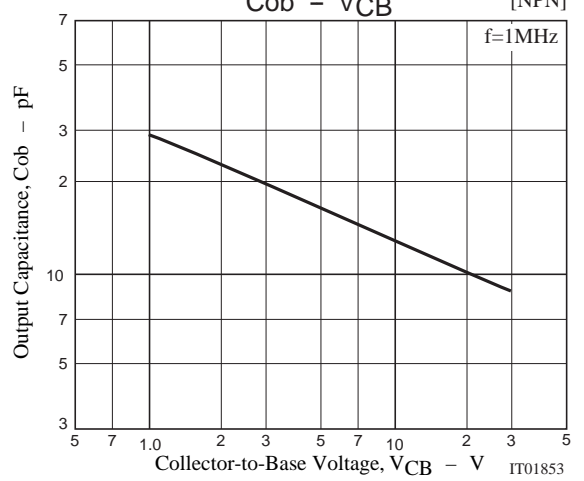
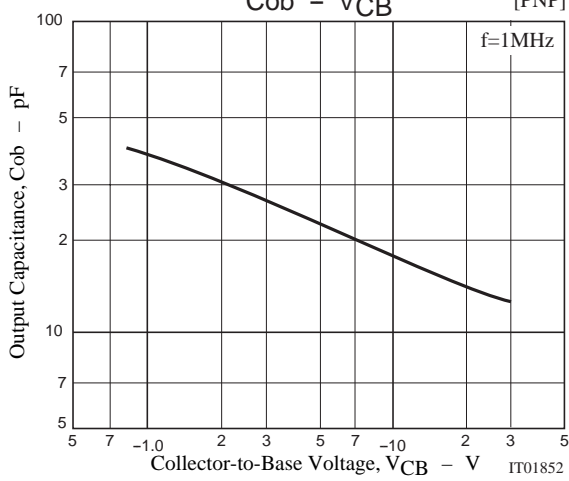
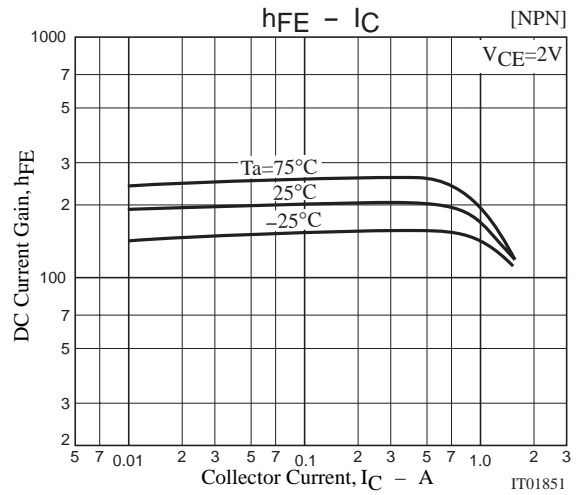
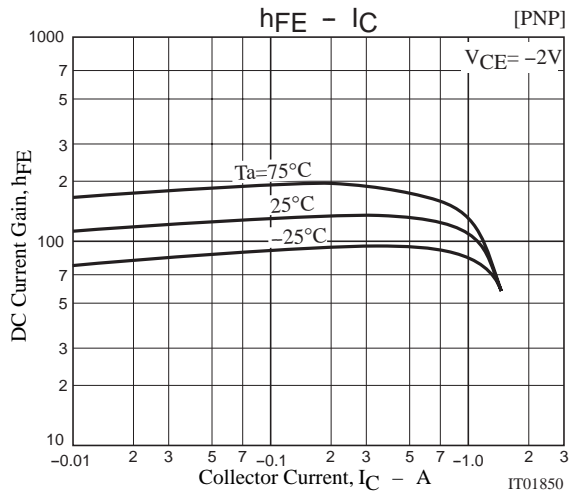
## Switching Time Test Circuit



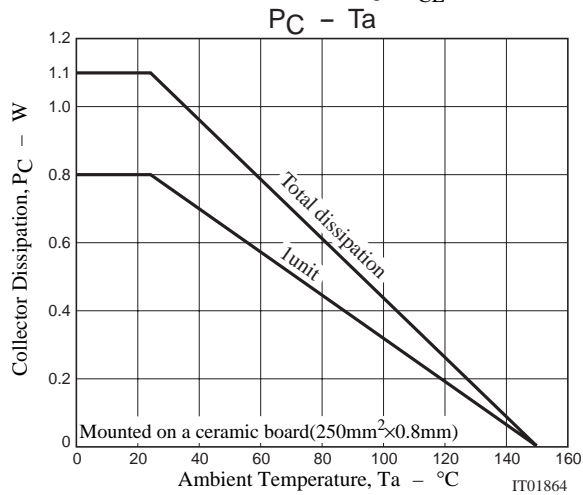
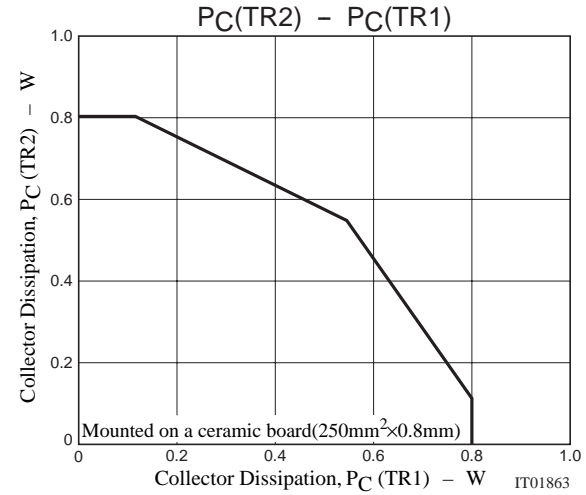
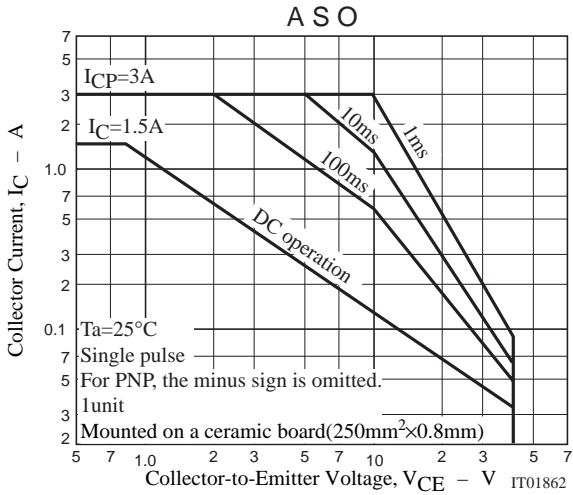
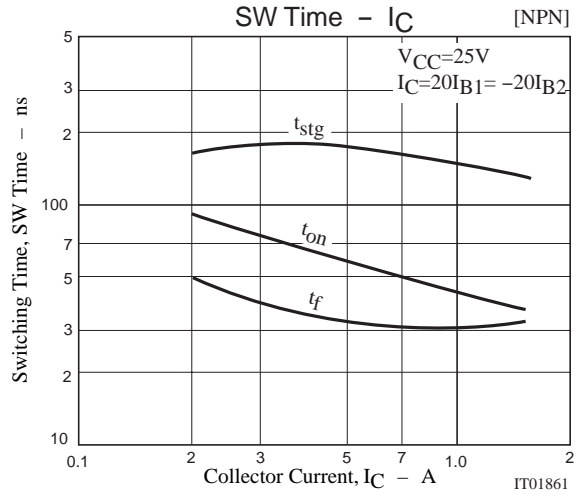
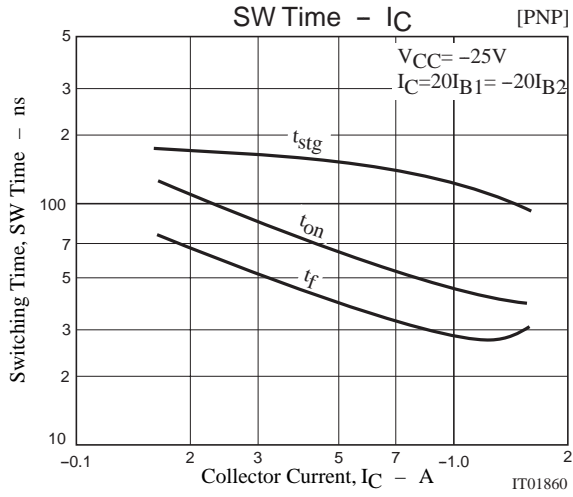
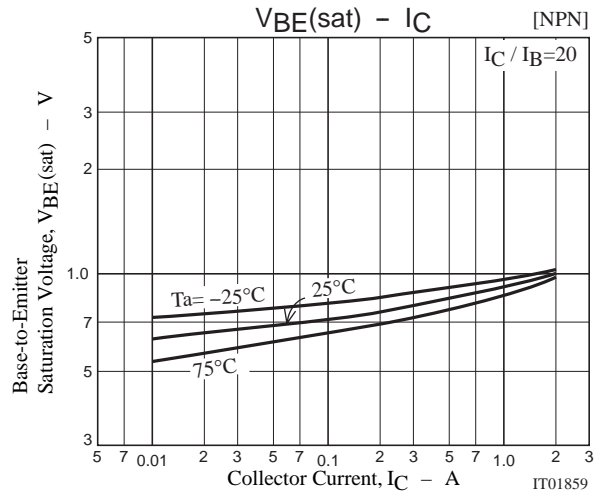
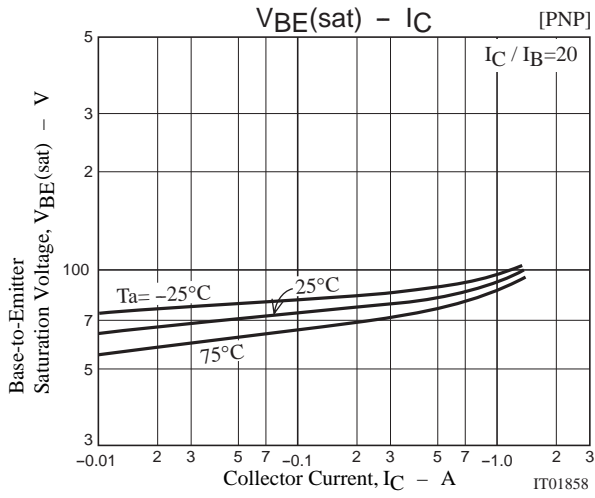
(For PNP, the polarity is reversed.)  
 $10I_{B1} = -10I_{B2} = I_C = 400mA$



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