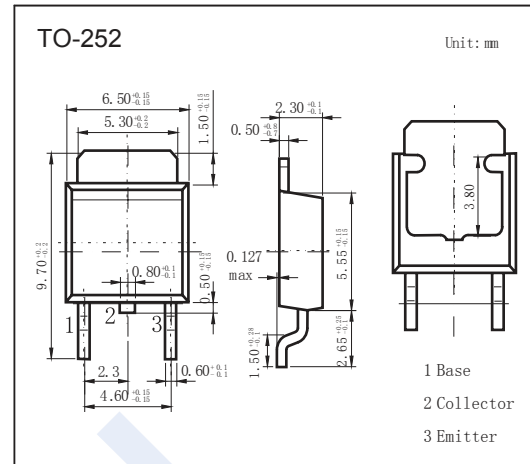


PNP Transistors

2SB1204

■ Features

- Low collector-to-emitter saturation voltage.
- High current and high f_t
- Fast switching time.
- Complementary to 2SD1804

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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CB0}	-60	V
Collector - Emitter Voltage	V_{CE0}	-50	
Emitter - Base Voltage	V_{EB0}	-6	
Collector Current - Continuous	I_C	-8	A
Collector Current - Pulse	I_{CP}	-12	
Collector Power Dissipation $T_c = 25^\circ\text{C}$	P_C	20	W
		1	
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature range	T_{stg}	-55 to 150	

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CB0}	$I_C = -100 \mu\text{A}$, $I_E = 0$	-60			V
Collector- emitter breakdown voltage	V_{CE0}	$I_C = -1 \text{ mA}$, $R_{BE} = \infty$	-50			
Emitter - base breakdown voltage	V_{EB0}	$I_E = -100 \mu\text{A}$, $I_C = 0$	-6			
Collector-base cut-off current	I_{CB0}	$V_{CB} = -50\text{V}$, $I_E = 0$			-1	μA
Emitter cut-off current	I_{EB0}	$V_{EB} = -5\text{V}$, $I_C = 0$			-1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -4 \text{ A}$, $I_B = -200\text{mA}$		-0.25	-0.5	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = -4 \text{ A}$, $I_B = -200\text{mA}$		-0.95	-1.3	
DC current gain	h_{FE}	$V_{CE} = -2\text{V}$, $I_C = -500 \text{ mA}$	70		400	
		$V_{CE} = -2\text{V}$, $I_C = -6 \text{ A}$	35			
Turn-ON Time	t_{on}	See specified Test Circuit		50		ns
Storage Time	t_{stg}			450		
Fall Time	t_f			20		
Collector output capacitance	C_{ob}		$V_{CB} = -10\text{V}$, $I_E = 0$, $f = 1\text{MHz}$		95	
Transition frequency	f_t	$V_{CE} = -5\text{V}$, $I_C = -1 \text{ A}$		130		MHz

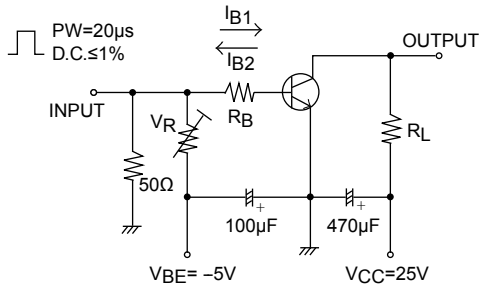
■ Classification of $h_{fe}(1)$

Type	2SB1204-Q	2SB1204-R	2SB1204-S	2SB1204-T
Range	70-140	100-200	140-280	200-400

PNP Transistors

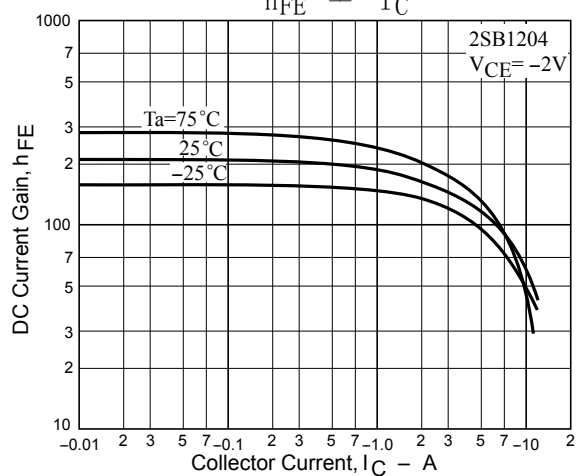
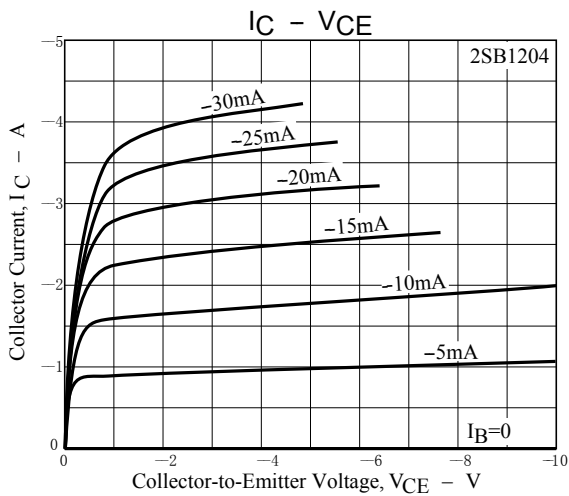
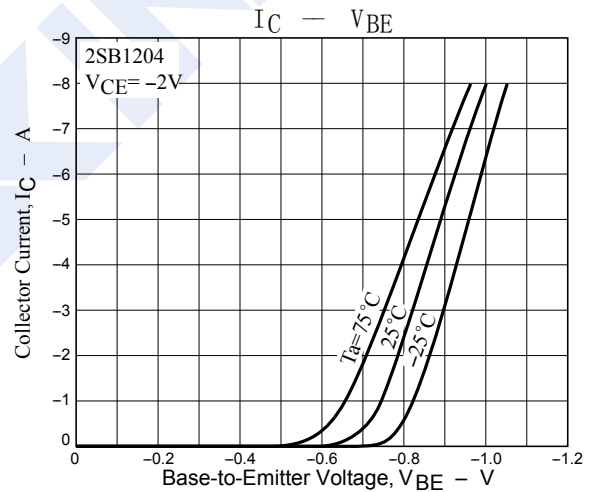
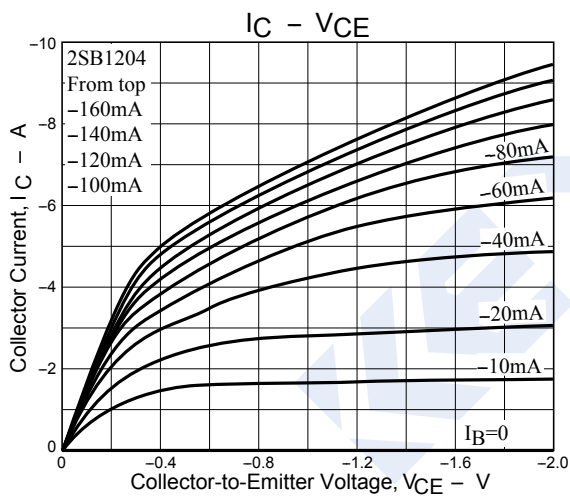
2SB1204

Switching Time Test Circuit



$I_C = 10I_{B1} = -10I_{B2} = 4A$
 (For PNP, the polarity is reversed.)

Typical Characteristics



PNP Transistors

2SB1204

■ Typical Characteristics

