



2SB1204/2SD1804

High-Current Switching Applications

Applications

- Relay drivers, high-speed inverters, converters, and other general high-current switching applications.

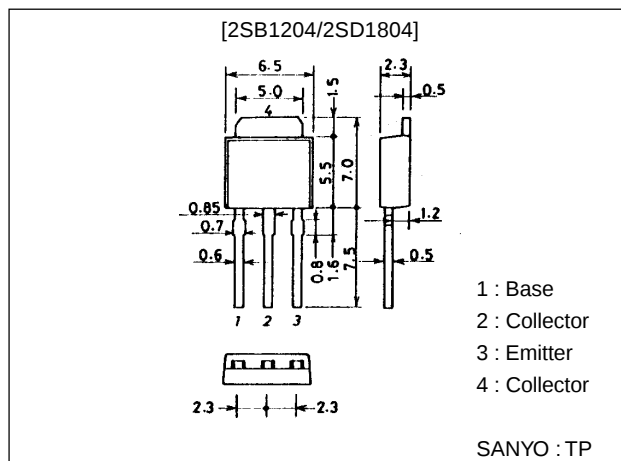
Features

- Low collector-to-emitter saturation voltage.
- High current and high f_T .
- Excellent linearity of h_{FE} .
- Fast switching time.
- Small and slim package making it easy to make 2SB1204/2SD1804-applied sets smaller.

Package Dimensions

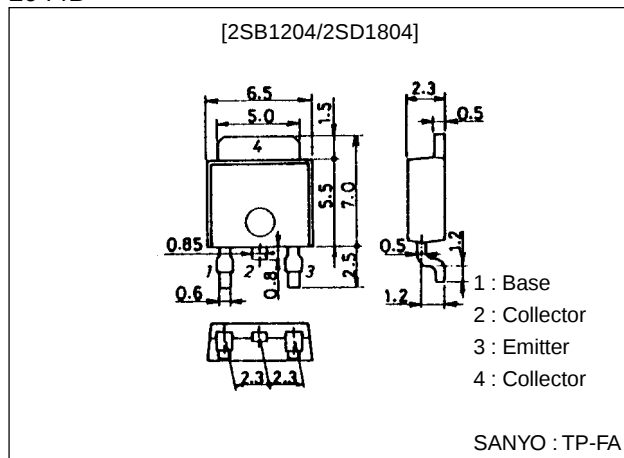
unit:mm

2045B



unit:mm

2044B



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■ SANYO assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all SANYO products described or contained herein.

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92098HA (KT)/8309MO/3117AT, TS No.2086-1/5

() : 2SB1204

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		(-)8	A
Collector Current (Pulse)	I_{CP}		(-)12	A
Collector Dissipation	P_C		1	W
		$T_c=25^\circ\text{C}$	20	W
Junction Temperature	T_j		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

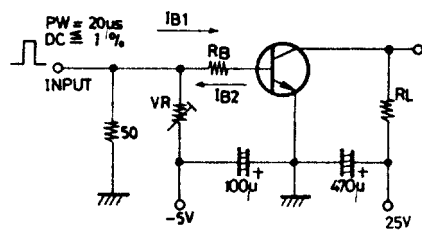
Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=(-)40\text{V}, I_E=0$			(-)1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)4\text{V}, I_C=0$			(-)1	μA
DC Current Gain	h_{FE1}	$V_{CE}=(-)2\text{V}, I_C=(-)0.5\text{A}$	70*		400*	
	h_{FE2}	$V_{CE}=(-)2\text{V}, I_C=(-)6\text{A}$	35			
Gain-Bandwidth Product	f_T	$V_{CE}=(-)5\text{V}, I_C=(-)1\text{A}$		(130)		MHz
				180		MHz
Output Capacitance	C_{ob}	$V_{CB}=(-)10\text{V}, f=1\text{MHz}$		(95)65		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)4\text{A}, I_B=(-)0.2\text{A}$		200	400	mV
				(-250)	(-500)	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)4\text{A}, I_B=(-)0.2\text{A}$		(-)0.95	(-)1.3	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu\text{A}, I_E=0$	(-)60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1\text{mA}, R_{BE}=\infty$	(-)50			V
Emitter-to-Base 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		(50)		ns
Storage Time	t_{stg}	See specified Test Circuit		(450)		ns
				500		ns
Fall Time	t_f	See specified Test Circuit		20		ns

* : The 2SB1204/2SD1804 are classified by 0.5A h_{FE} as follows :

70	Q	140	100	R	200	140	S	280	200	T	400
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Switching Time Test Circuit

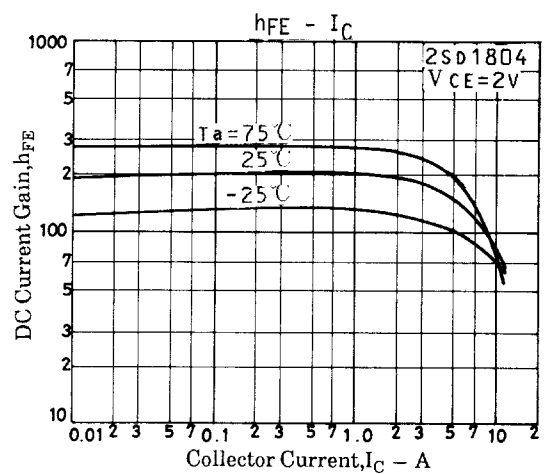
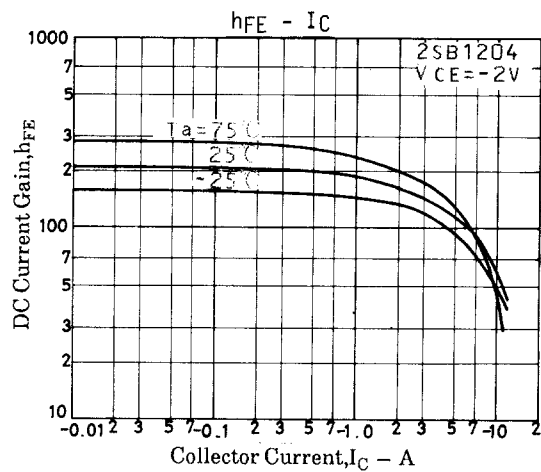
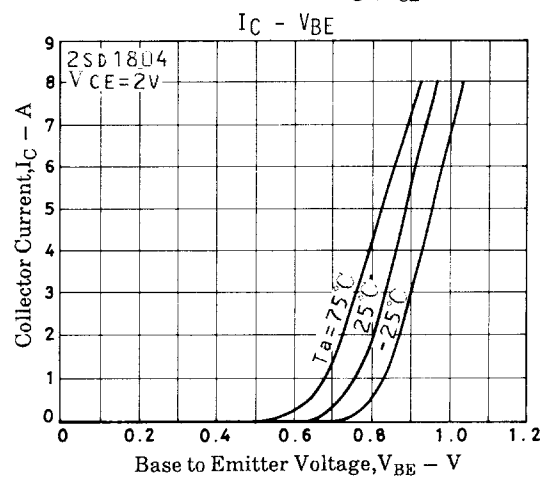
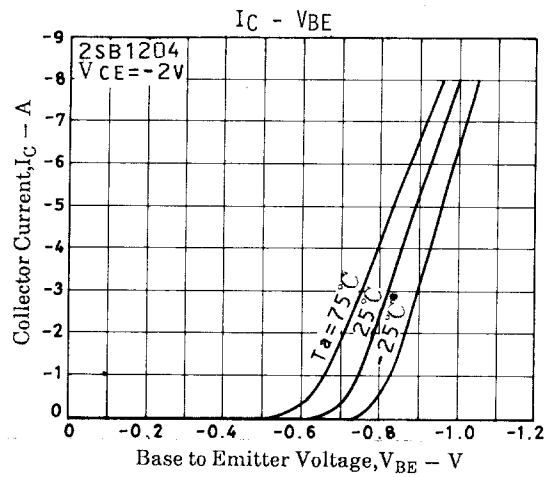
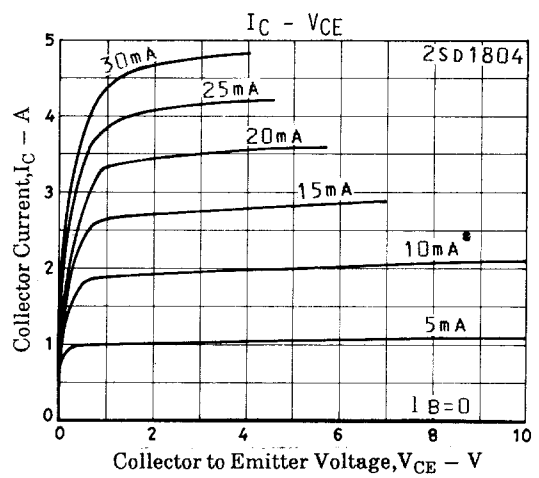
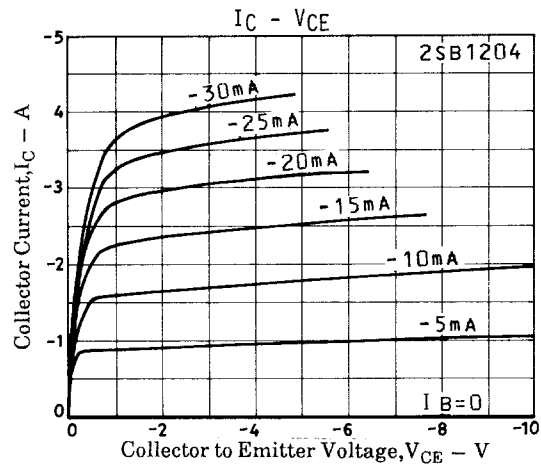
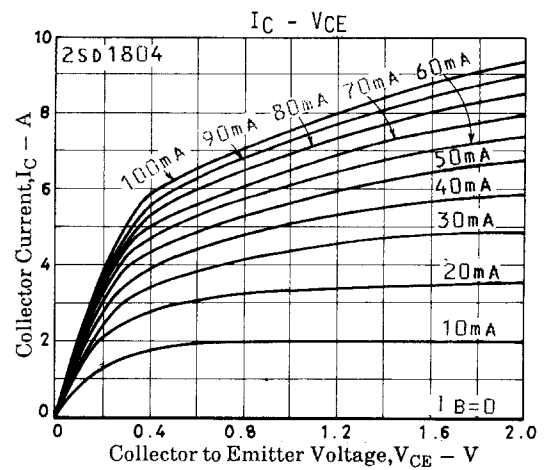
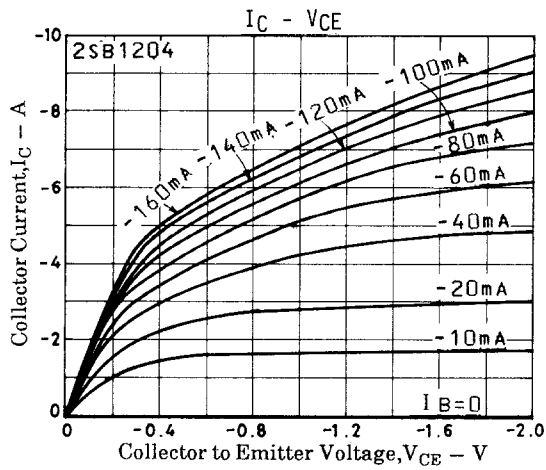


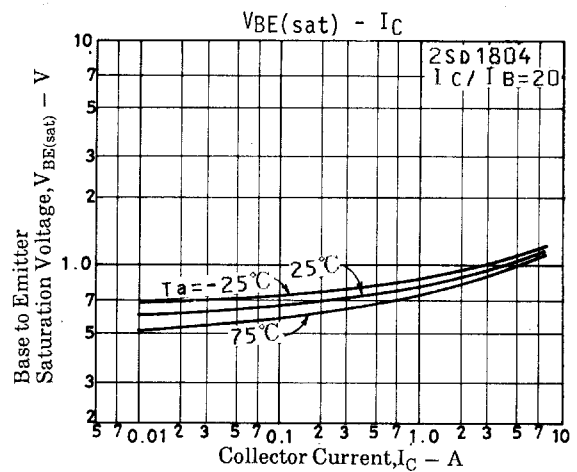
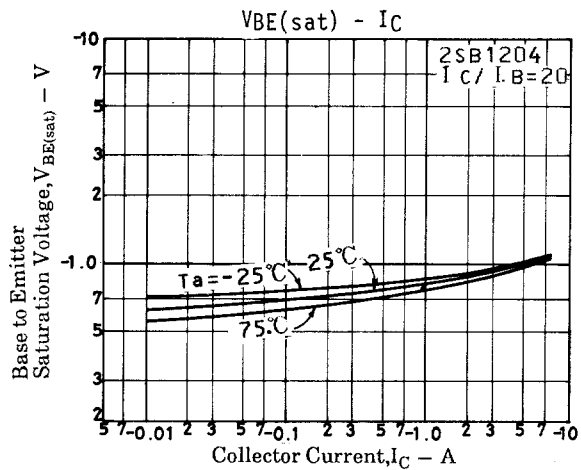
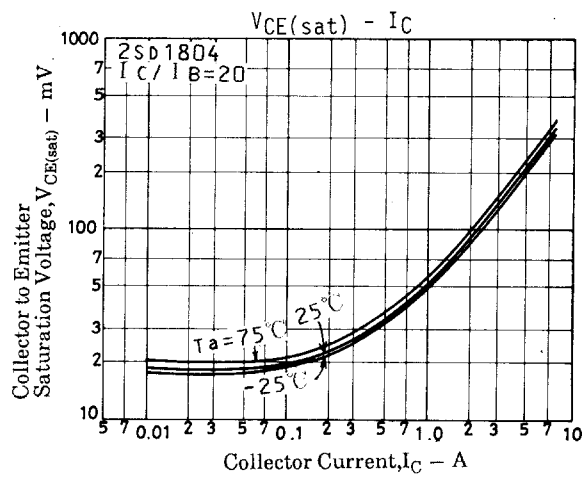
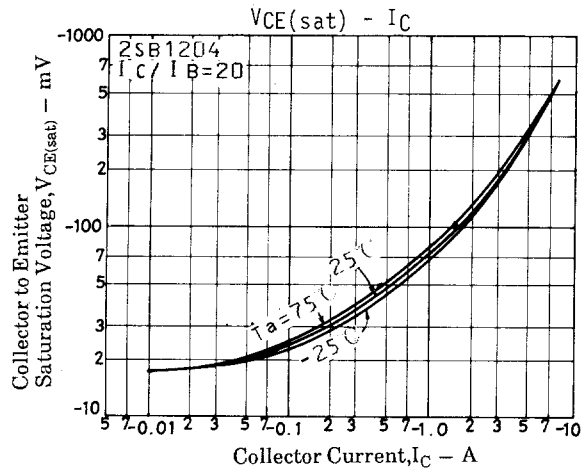
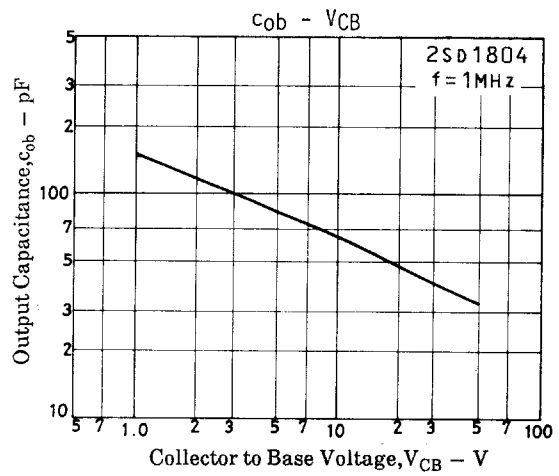
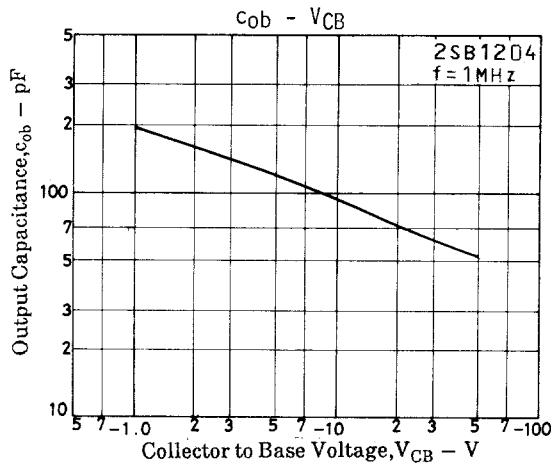
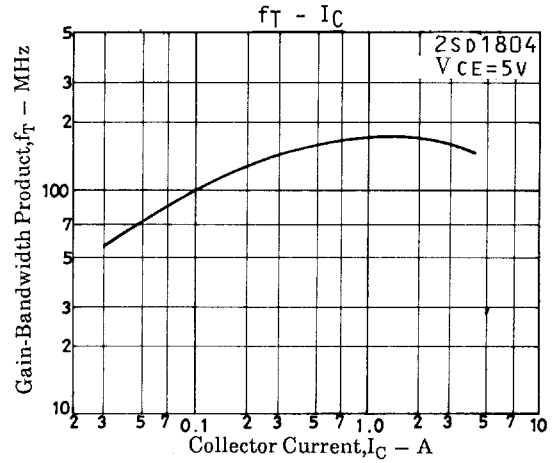
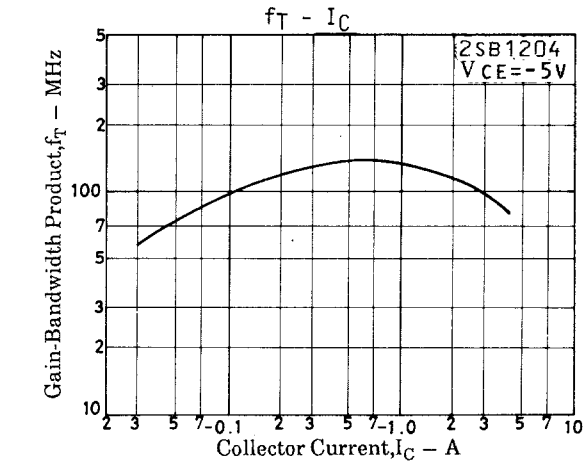
$$I_C = 10 \text{ A } I_{B1} = -10 \text{ A } I_{B2} = 4 \text{ A}$$

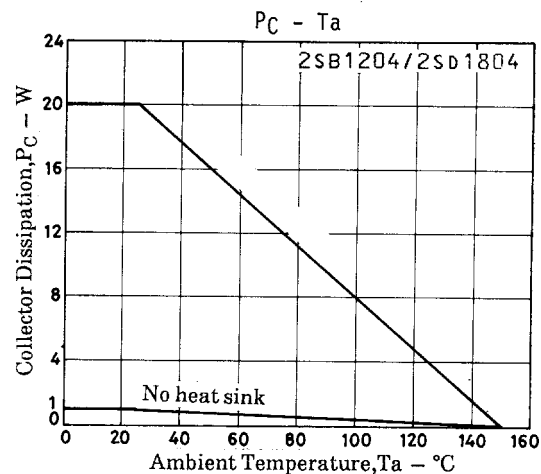
(For PNP, the polarity is reversed.)

Unit (resistance : Ω , capacitance : F)

2SB1204/2SD1804







- This catalog provides information as of September, 1998. Specifications and information herein are subject to change without notice.