



## 2SB1268/2SD1904

### High-Current Switching Applications

#### Applications

- Suitable for relay drivers, high-speed inverters, converters, and other general high-current switching applications.

#### Features

- Suitable for sets whose height is restricted.
- Low collector to emitter saturation voltage.

( ) : 2SB1268

#### 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	$V_{CEO}$		(-)50	V
Emitter-to-Base Voltage	$V_{EBO}$		(-)6	V
Collector Current	$I_C$		(-)5	A
Collector Current (Pulse)	$I_{CP}$		(-)9	A
Collector Dissipation	$P_C$		1.65	W
		$T_c=25^\circ\text{C}$	30	W
Junction Temperature	$T_J$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CB0}$	$V_{CB}=(-)40\text{V}, I_E=0$			(-)0.1	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=(-)4\text{V}, I_C=0$			(-)0.1	$\mu\text{A}$
DC Current Gain	$h_{FE1}$	$V_{CE}=(-)2\text{V}, I_C=(-)1\text{A}$	70*		280*	
	$h_{FE2}$	$V_{CE}=(-)2\text{V}, I_C=(-)3\text{A}$	30			
Gain-Bandwidth Product	$f_T$	$V_{CE}=(-)5\text{V}, I_C=(-)1\text{A}$		30		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=(-)10\text{V}, f=1\text{MHz}$		100		pF
				(160)		pF

\* : The 2SB1268/2SD1904 are classified by 1A  $h_{FE}$  as follows :

70	Q	140	100	R	200	140	S	280
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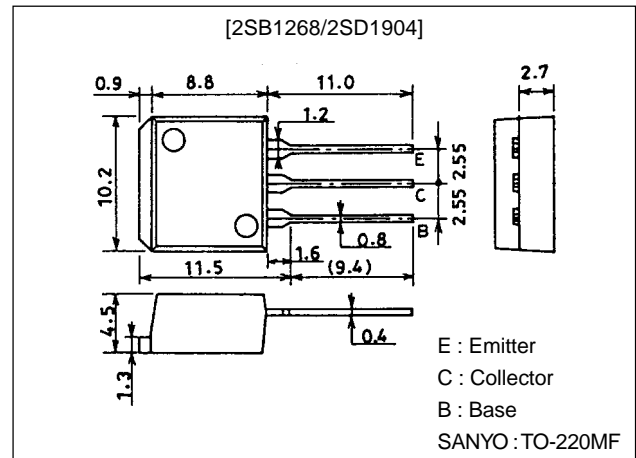
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#### Package Dimensions

unit:mm

2049B

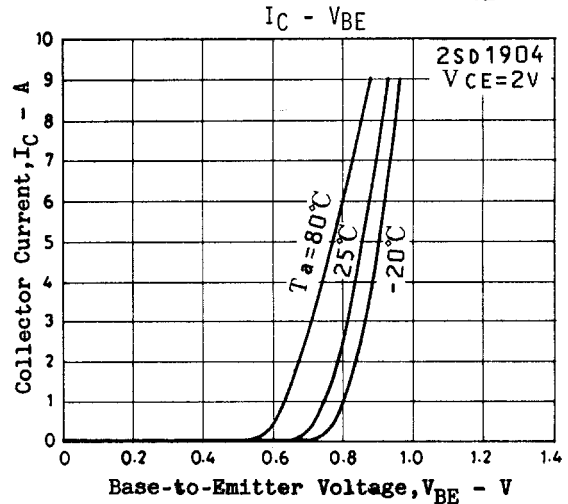
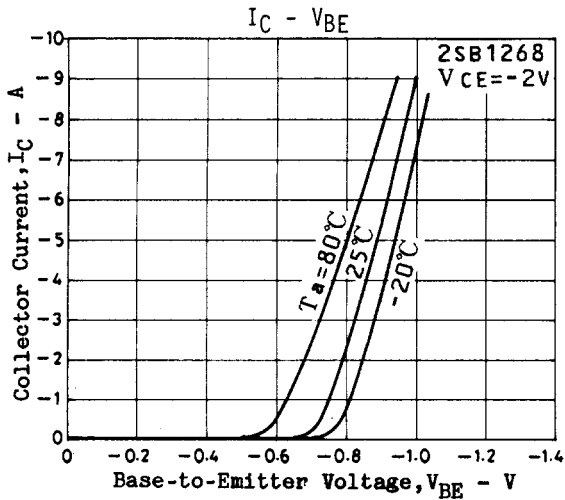
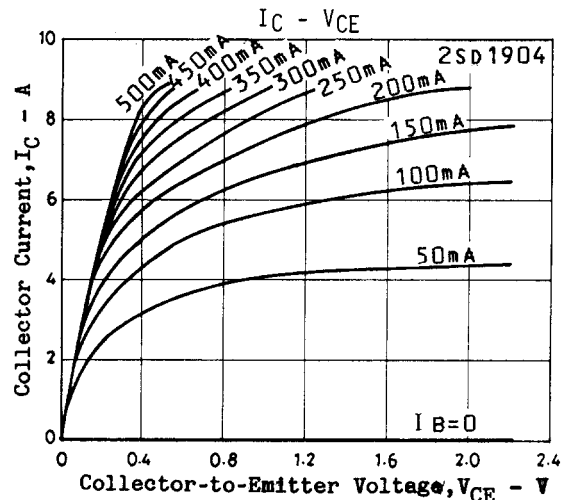
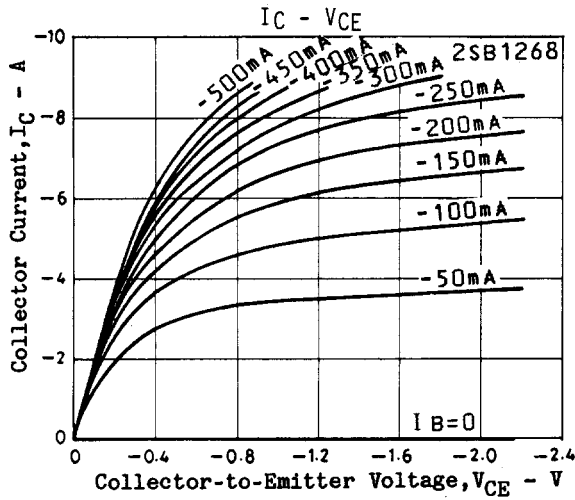
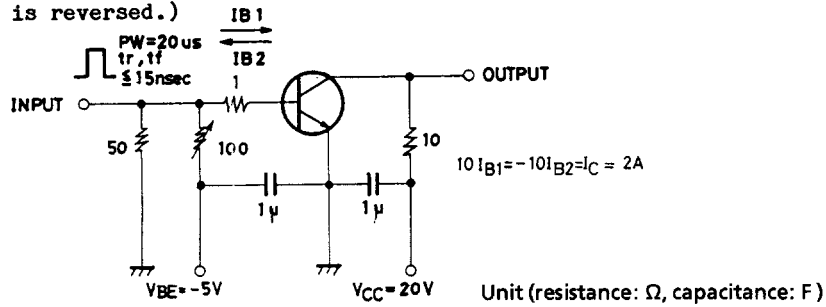


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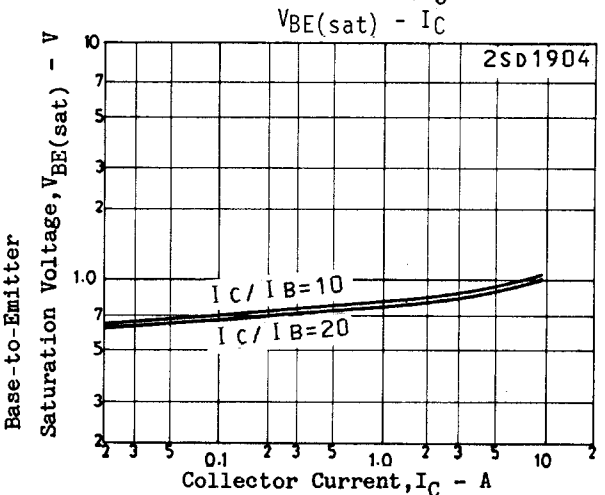
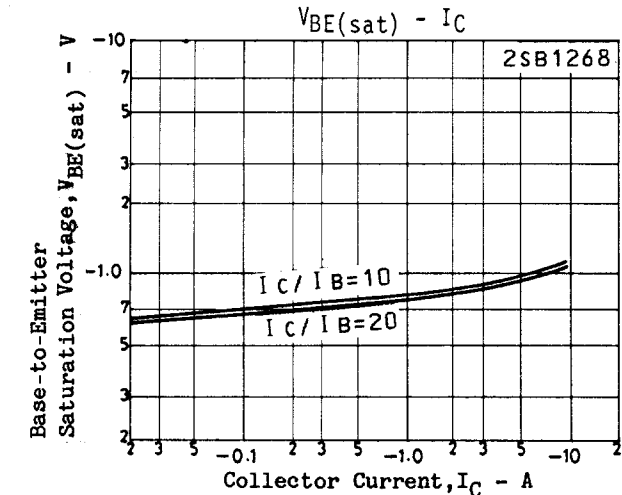
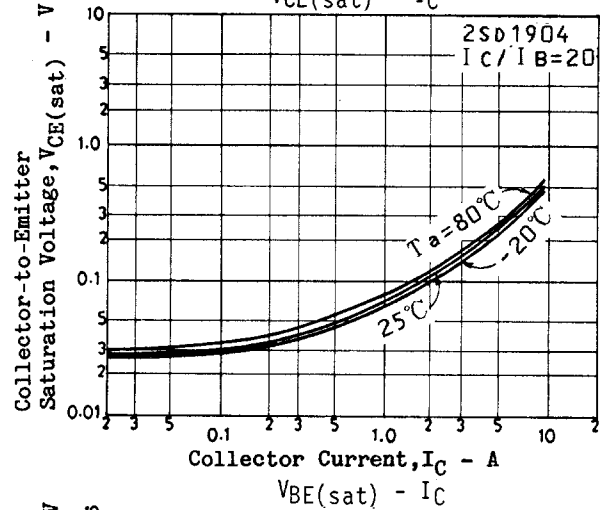
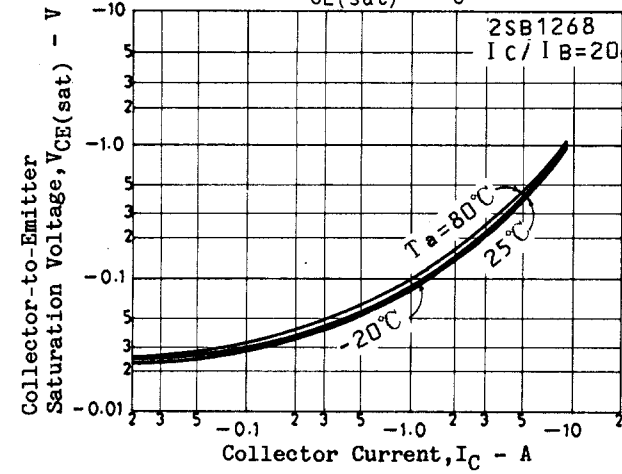
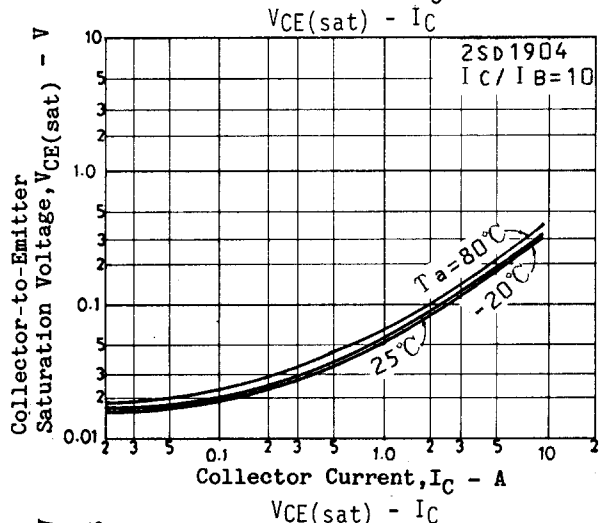
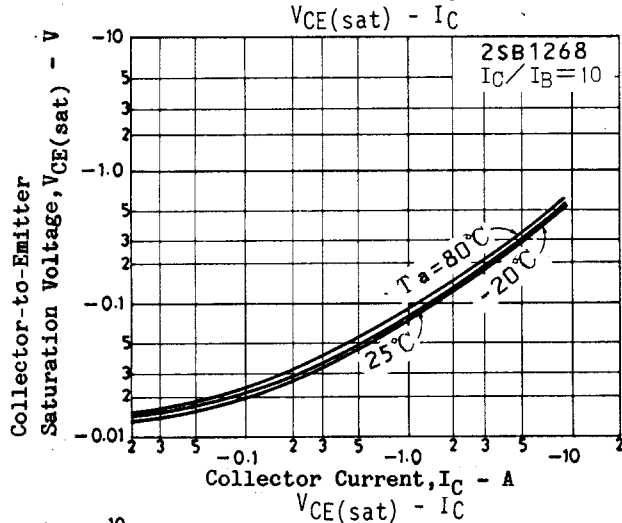
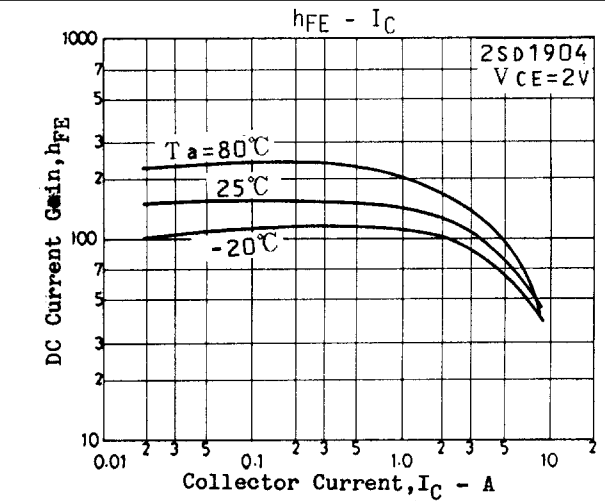
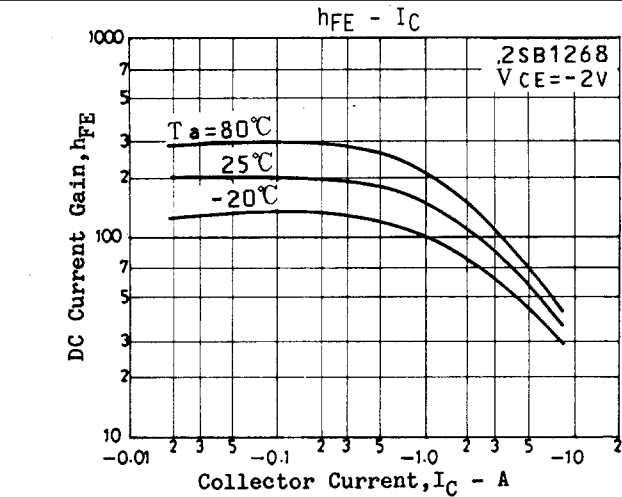
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)3A, I_B=(-)0.3A$			(-)0.4	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)1mA, I_E=0$	(-)60			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-)50			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)1mA, I_C=0$	(-)6			V
Turn-ON Time	$t_{on}$	See specified test circuit.		0.1		$\mu s$
Storage Time	$t_{stg}$	See specified test circuit.		(0.7)		$\mu s$
				1.4		$\mu s$
Fall Time	$t_f$	See specified test circuit.		0.2		$\mu s$

## Switching Time Test Circuit

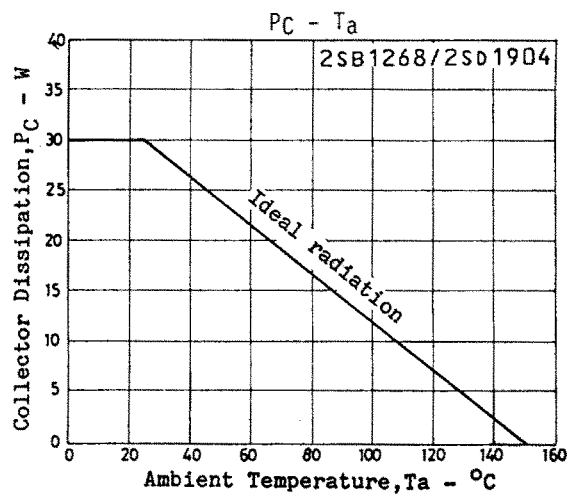
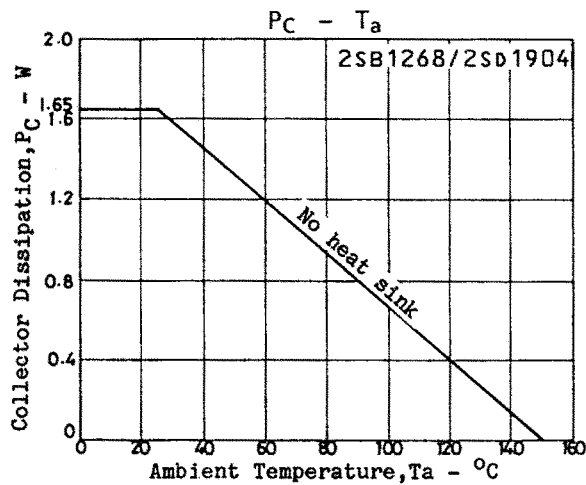
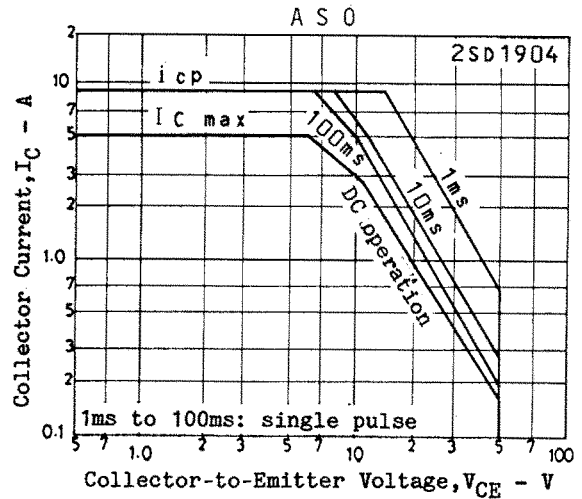
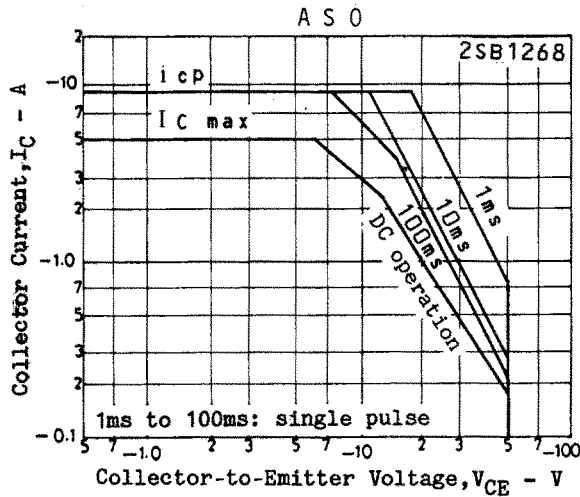
(For PNP, the polarity is reversed.)



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