

## 2SB1268/2SD1904

# **High-Current Switching Applications**

## **Applications**

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

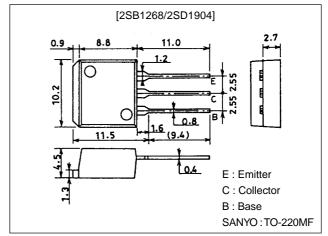
#### **Features**

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

## **Package Dimensions**

unit:mm

2049B



#### (): 2SB1268

### **Specifications**

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V <sub>CBO</sub>		(-)60	V
Collector-to-Emitter Voltage	VCEO		(-)50	V
Emitter-to-Base Voltage	V <sub>EBO</sub>		(–)6	V
Collector Current	IC		(-)5	Α
Collector Current (Pulse)	I <sub>CP</sub>		(-)9	Α
Collector Dissipation	PC		1.65	W
		Tc=25°C	30	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

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

Parameter	Symbol	Conditions		Unit		
	Symbol	Conditions		typ	max	Offic
Collector Cutoff Current	ICBO	V <sub>CB</sub> =(-)40V, I <sub>E</sub> =0			(–)0.1	μΑ
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =(-)4V, I <sub>C</sub> =0			(–)0.1	μΑ
DC Current Gain	h <sub>FE</sub> 1	V <sub>CE</sub> =(-)2V, I <sub>C</sub> =(-)1A	70*		280*	
	h <sub>FE</sub> 2	V <sub>CE</sub> =(-)2V, I <sub>C</sub> =(-)3A	30			
Gain-Bandwidth Product	fT	V <sub>CE</sub> =(-)5V, I <sub>C</sub> =(-)1A		30		MHz
Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =(-)10V, f=1MHz		100		pF
				(160)		pF

<sup>\*:</sup> The 2SB1268/2SD1904 are classified by 1A h<sub>FE</sub> as follows:

171 HE as follows .	70	Q	140	100	R	200	140	S	280	
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Parameter	Symbol	Conditions		Unit		
Farameter	Symbol	Conditions	min	typ	max	Unit
Collector-to-Emitter Saturation Voltage	VCE(sat)	I <sub>C</sub> =(-)3A, I <sub>B</sub> =(-)0.3A			(-)0.4	V
Collector-to-Base Breakdown Voltage	V(BR)CBO	I <sub>C</sub> =(-)1mA, I <sub>E</sub> =0	(–)60			V
Collector-to-Emitter Breakdown Voltage	V <sub>(BR)</sub> CEO	I <sub>C</sub> =(–)1mA, R <sub>BE</sub> =∞	(–)50			V
Emitter-to-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =(-)1mA, I <sub>C</sub> =0	(–)6			V
Turn-ON Time	ton	See specified test circuit.		0.1		μs
Storage Time	t <sub>stg</sub>	See specified test circuit.		(0.7)		μs
				1.4		μs
Fall Time	t <sub>f</sub>	See specified test circuit.		0.2		μs

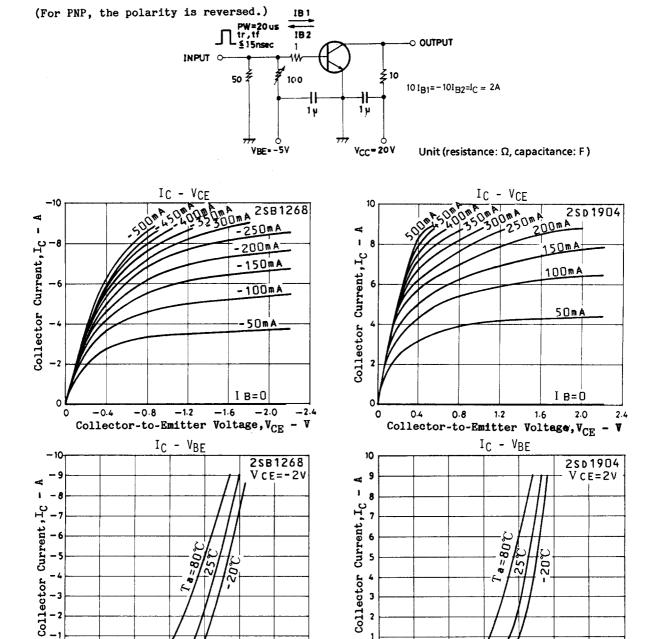
### **Switching Time Test Circuit**

0 0

-0.2 -0.4 -0.6

-0.8 -1.0

Base-to-Emitter Voltage,  $V_{\rm BE}$  - V

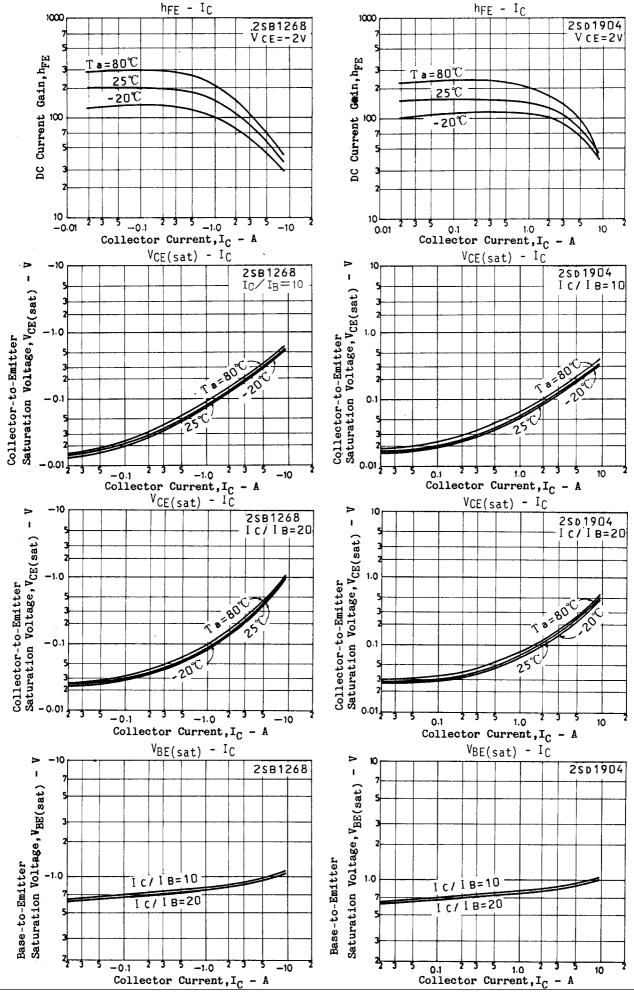


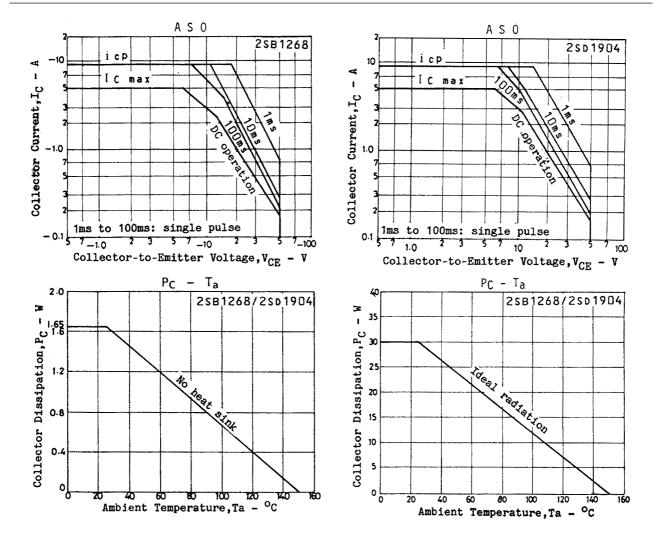
0.4

0.6

Base-to-Emitter Voltage,  $V_{\rm BE}$  - V

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