



## 2SB1270/2SD1906

### 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.
- Large current capacity.

( ) : 2SB1270

#### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CB0}$		(-)90	V
Collector-to-Emitter Voltage	$V_{CEO}$		(-)80	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	$I_{CBO}$	$V_{CB} = (-)80\text{V}, I_E = 0$			(-)0.1	mA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = (-)4\text{V}, I_C = 0$			(-)0.1	mA
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	$f_T$	$V_{CE} = (-)5\text{V}, I_C = (-)1\text{A}$		20		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)3\text{A}, I_B = (-)0.3\text{A}$			0.4	V
					(-)0.5	V

\* : The 2SB1270/2SD1906 are classified by  $1A h_{FE}$  as follows :

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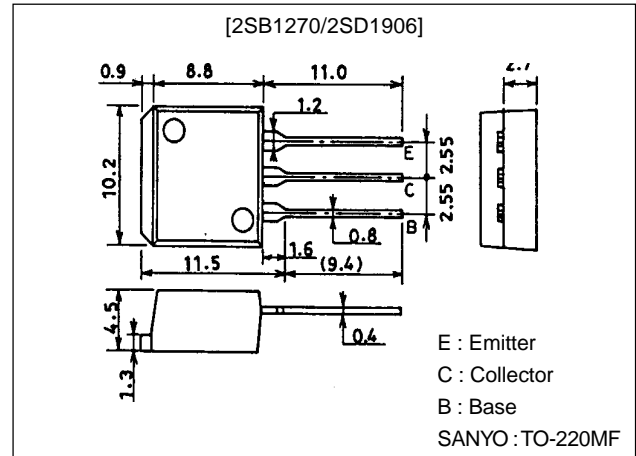
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#### Package Dimensions

unit:mm

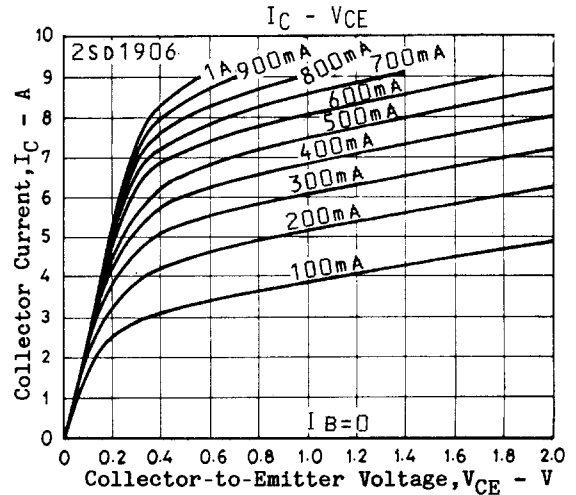
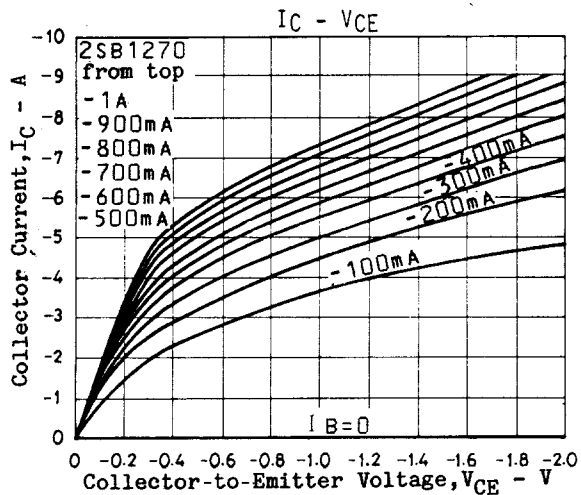
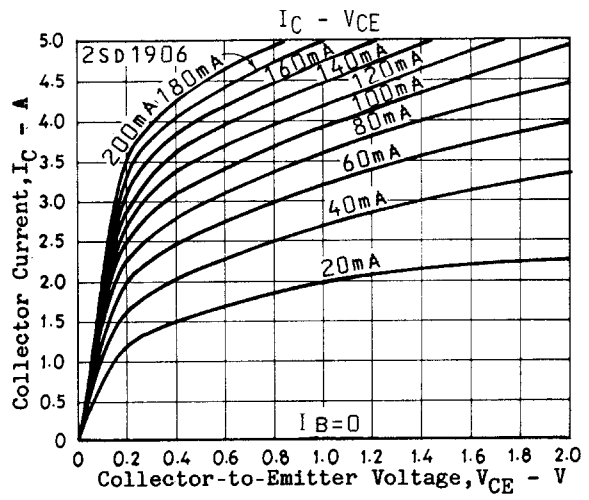
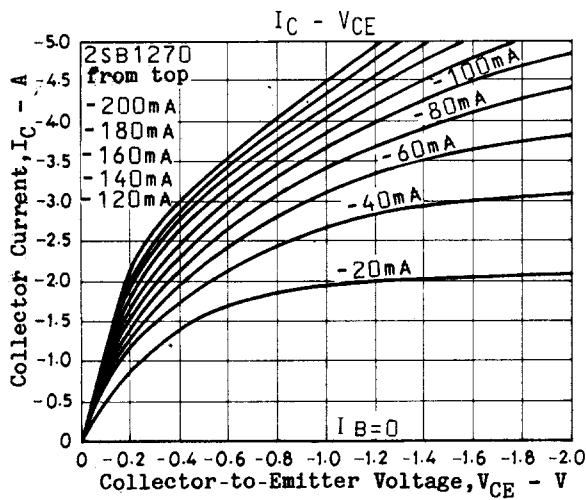
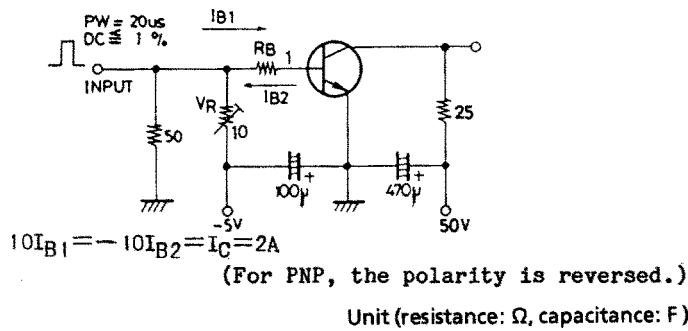
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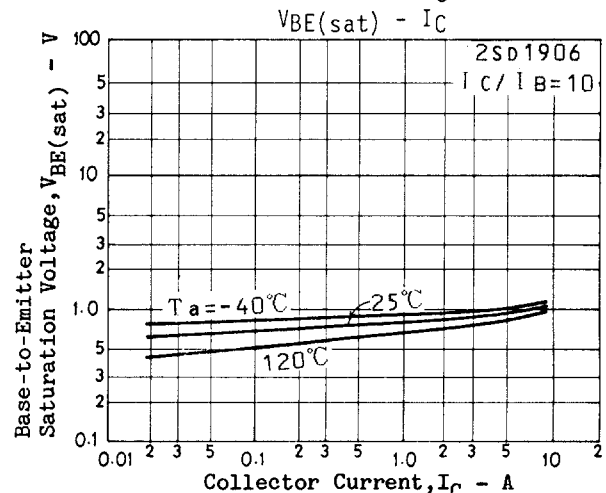
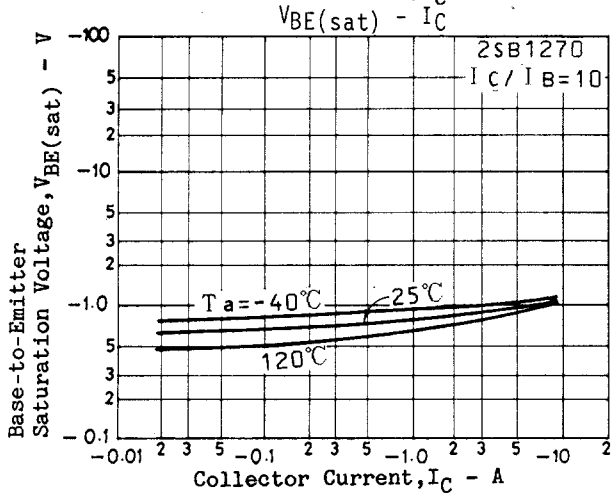
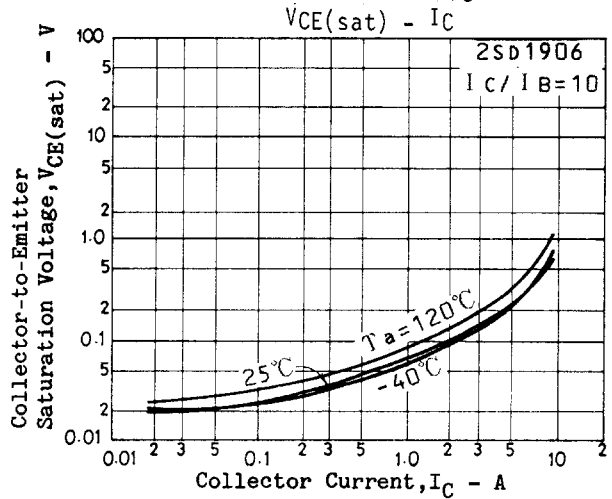
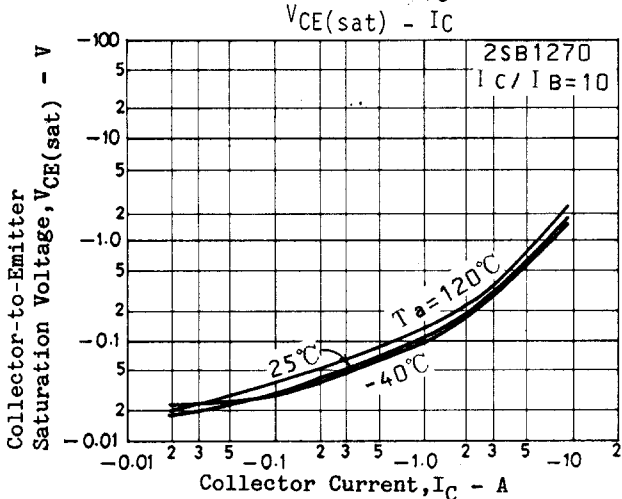
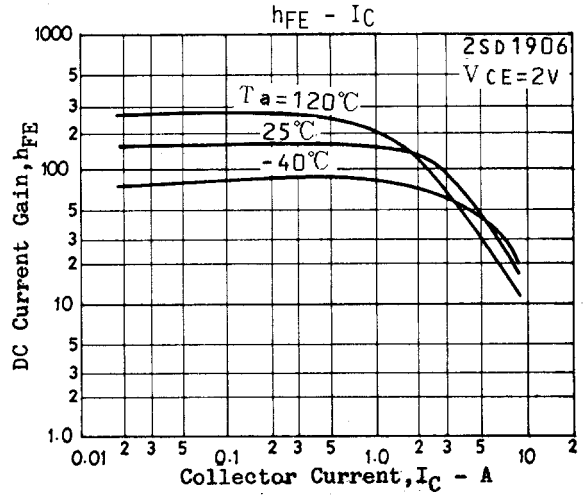
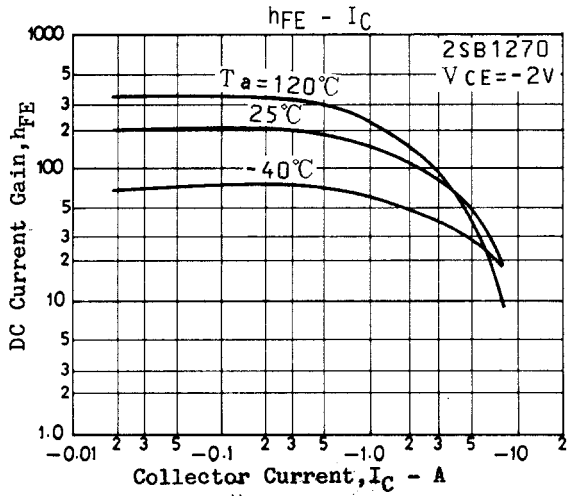
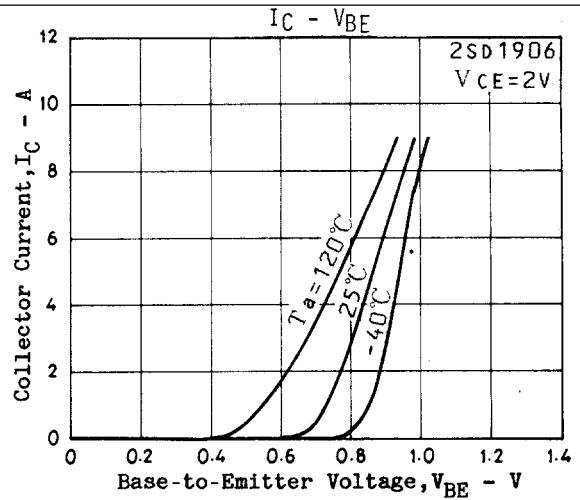
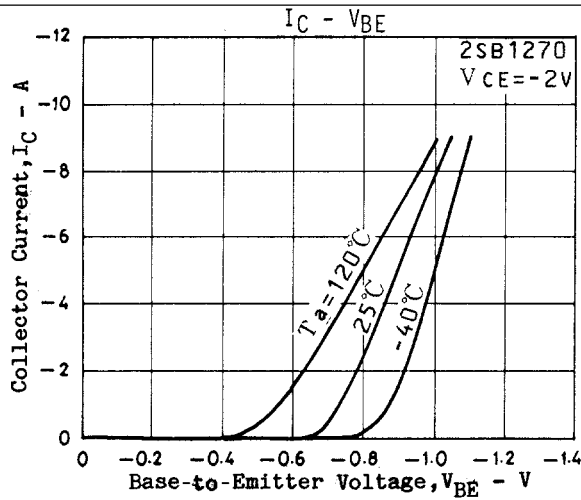
## 2SB1270/2SD1906

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = (-)1mA, I_E = 0$	(-)90			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = (-)1mA, R_{BE} = \infty$	(-)80			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.		(0.2)		$\mu s$
Storage Time	$t_{stg}$	See specified test circuit.		0.1		$\mu s$
Fall Time	$t_f$	See specified test circuit.		(0.7)		$\mu s$
				1.2		$\mu s$
				(0.2)		$\mu s$
				0.4		$\mu s$

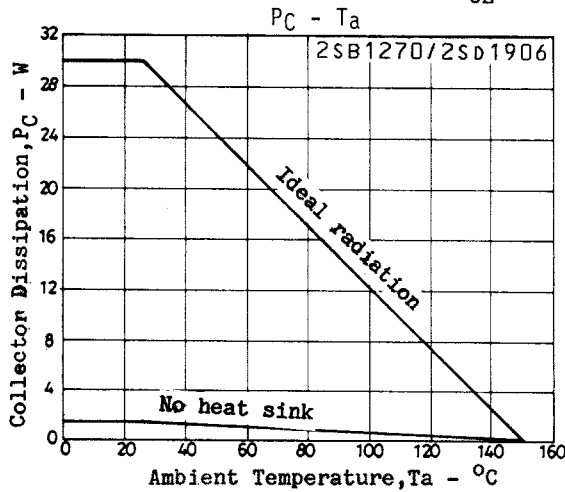
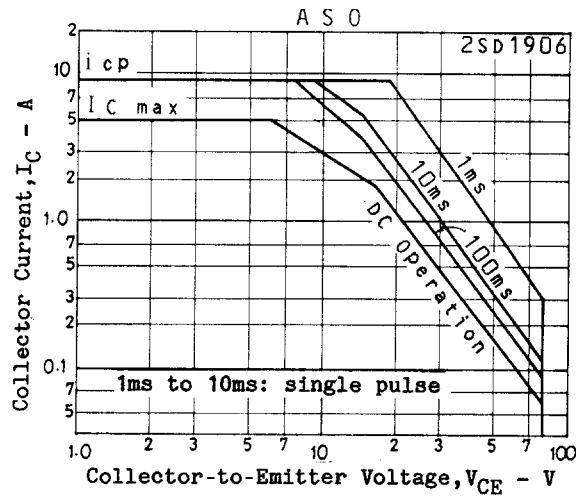
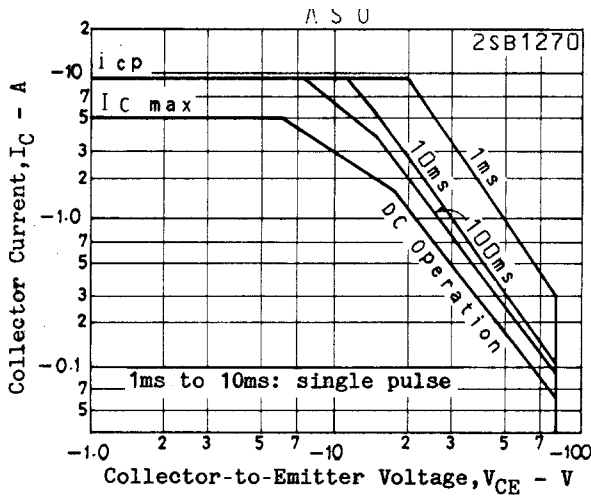
### Switching Time Test Circuit



# 2SB1270/2SD1906



## 2SB1270/2SD1906



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