



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

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

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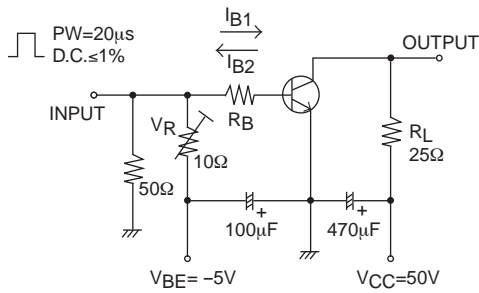
Rank	Q	R	S
h_{FE}	70 to 140	100 to 200	140 to 280

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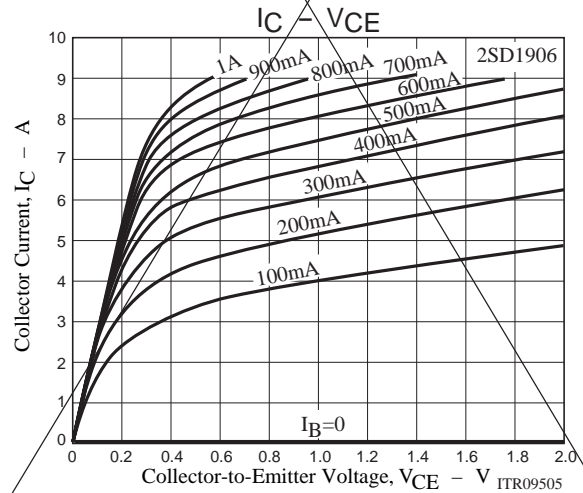
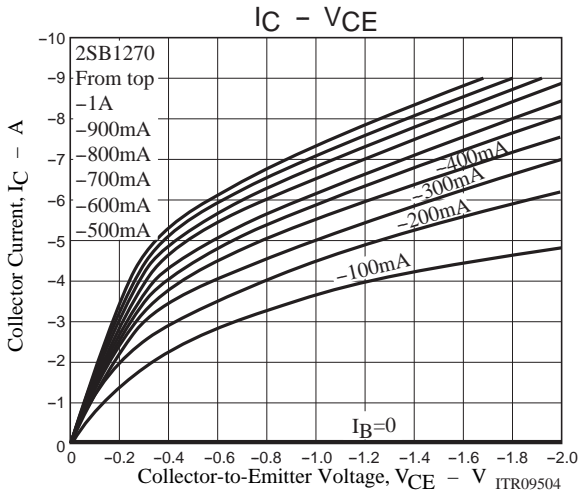
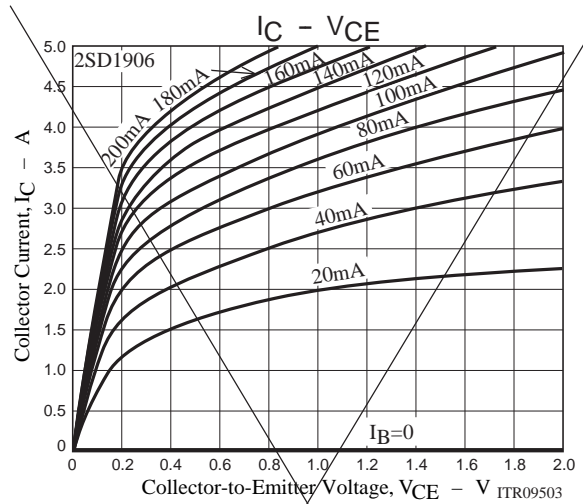
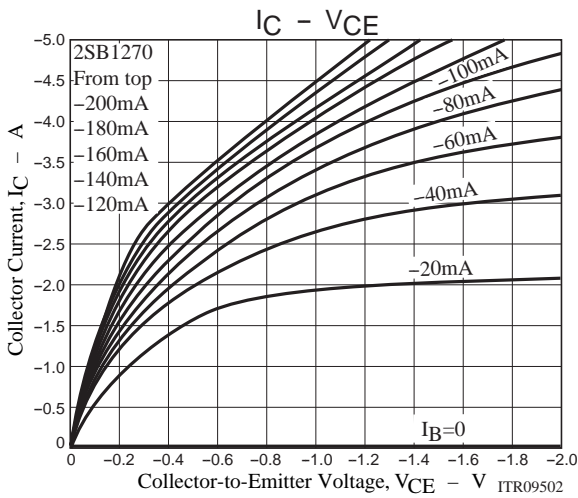
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)3A, I_B=(-)0.3A$			0.4	V
					(-0.5)	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)1mA, I_E=0$	(-90)			V
Collector-to-Emitter 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)		μs
				0.1		μs
Storage Time	t_{stg}	See specified test circuit.		(0.7)		μs
				1.2		μs
Fall Time	t_f	See specified test circuit.		(0.2)		μs
				0.4		μs

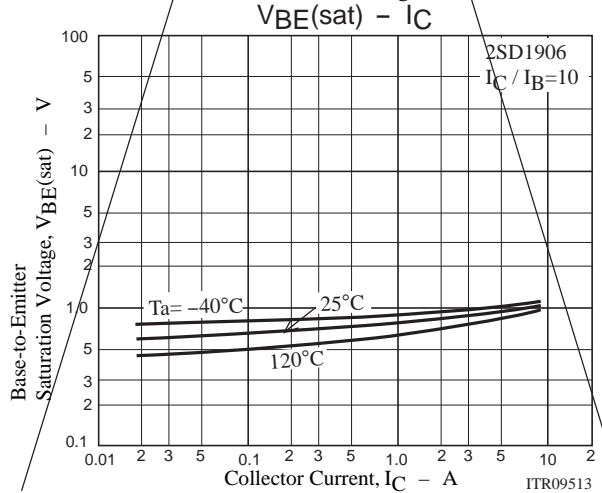
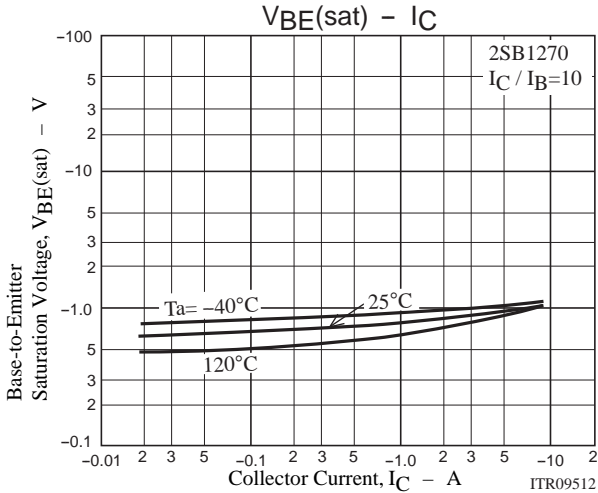
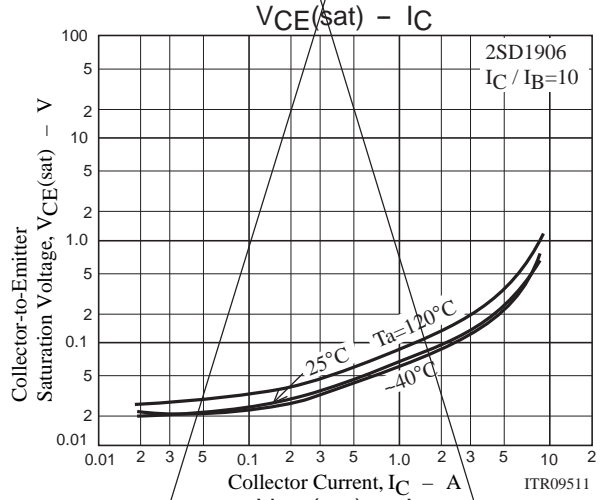
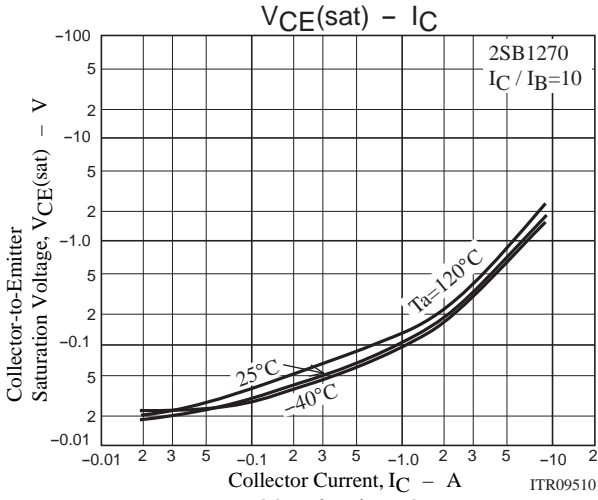
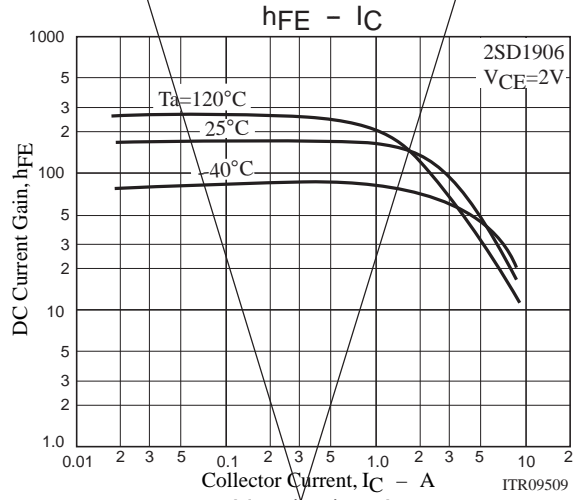
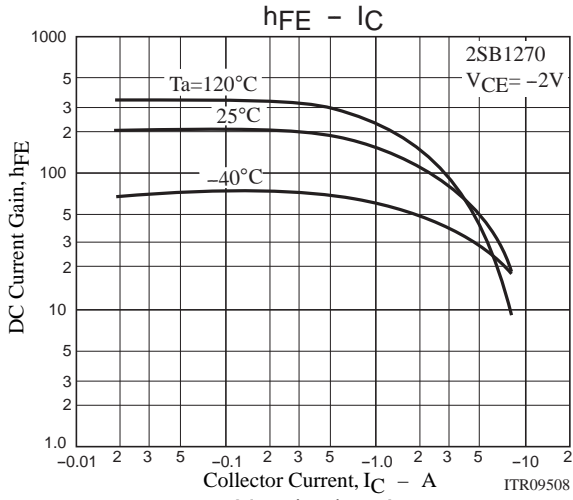
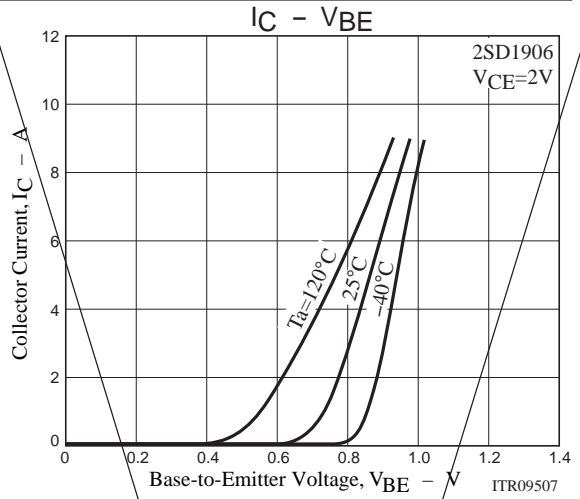
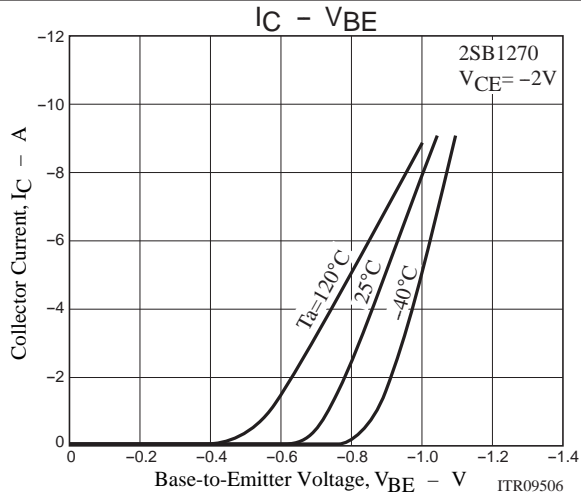
Switching Time Test Circuit

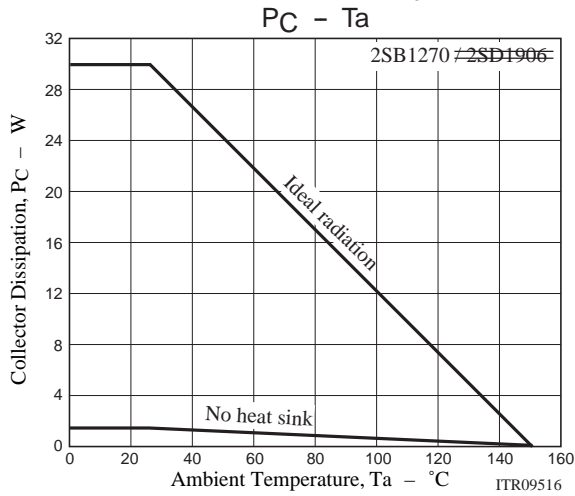
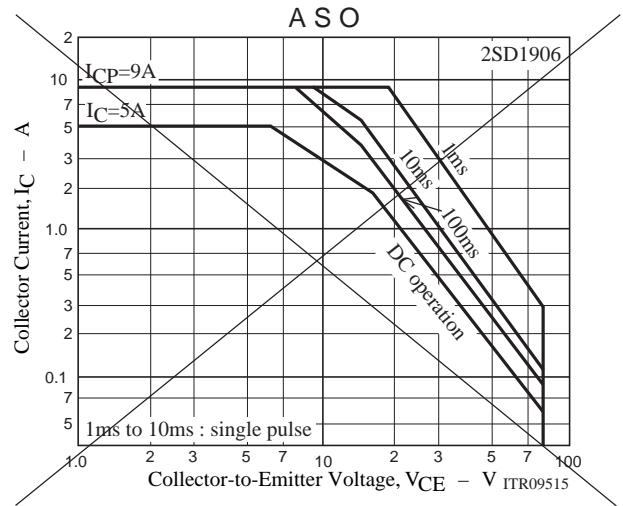
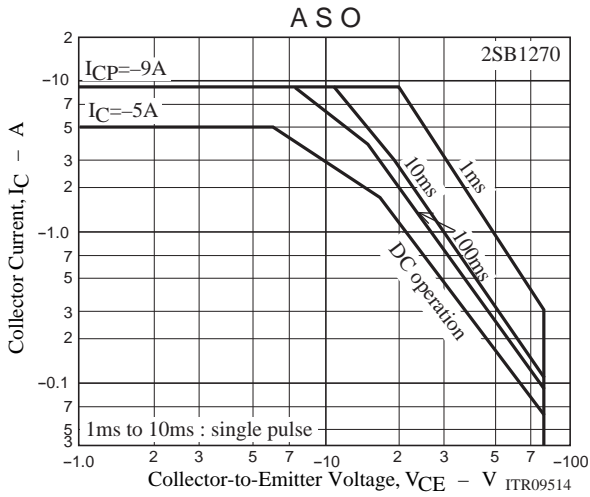


(For PNP, the polarity is reversed.)



2SB1270/2SD1906





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