



2SB1228/2SD1830

Driver Applications

Applications

- Suitable for use in control of motor drivers, printer hammer drivers, relay drivers, and constant-voltage regulators.

Features

- High DC current gain.
- Large current capacity and wide ASO.
- Low saturation voltage.
- Micaless package facilitating mounting.

() : 2SB1228

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(-)110	V
Collector-to-Emitter Voltage	V_{CEO}		(-)100	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		2.0	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}	$V_{EB}=(-)5\text{V}, I_C=0$			(-)3.0	mA
DC Current Gain	h_{FE}	$V_{CE}=(-)3\text{V}, I_C=(-)4\text{A}$	1500	4000		
Gain-Bandwidth Product	f_T	$V_{CE}=(-)5\text{V}, I_C=(-)4\text{A}$		20		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)4\text{A}, I_B=(-)8\text{mA}$		0.9	(-)1.5	V
				(-1.0)		V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)4\text{A}, I_B=(-)8\text{mA}$			(-)2.0	V

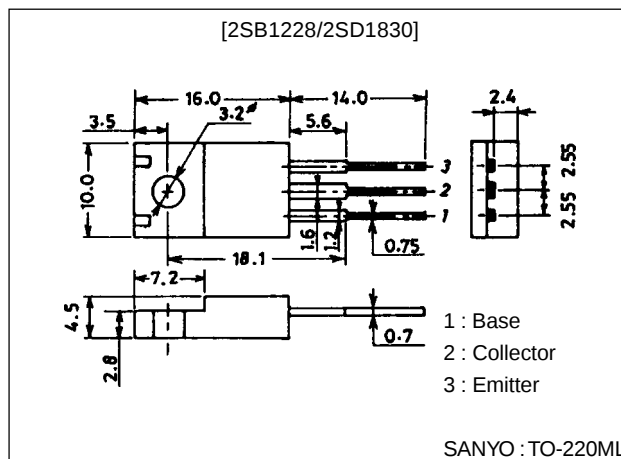
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Package Dimensions

unit:mm

2041A



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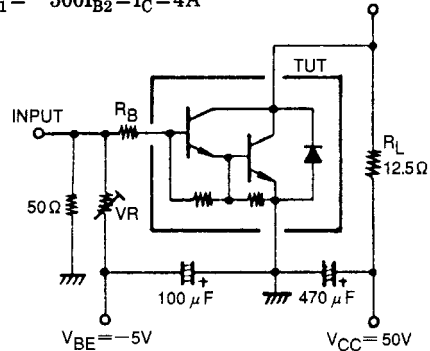
2SB1228/2SD1830

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)5mA, I_E=0$	$(-)\sim 110$			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)50mA, R_{BE}=\infty$	$(-)\sim 100$			V
Turn-ON Time	t_{on}	See specified Test Circuit		0.6 (0.7)		μs
Storage Time	t_{stg}	See specified Test Circuit		4.8 (1.4)		μs
Fall Time	t_f	See specified Test Circuit		1.6 (1.5)		μs

Switching Time Test Circuit

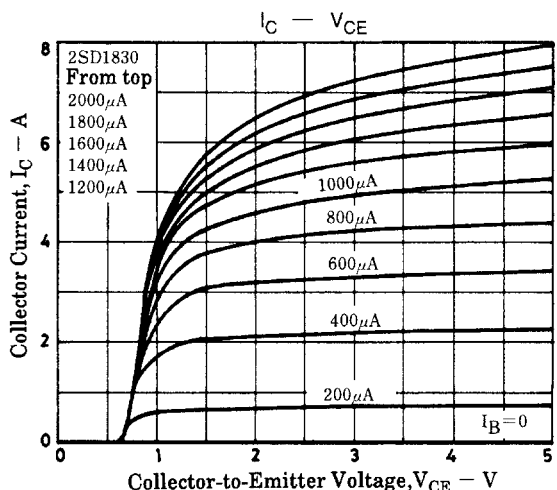
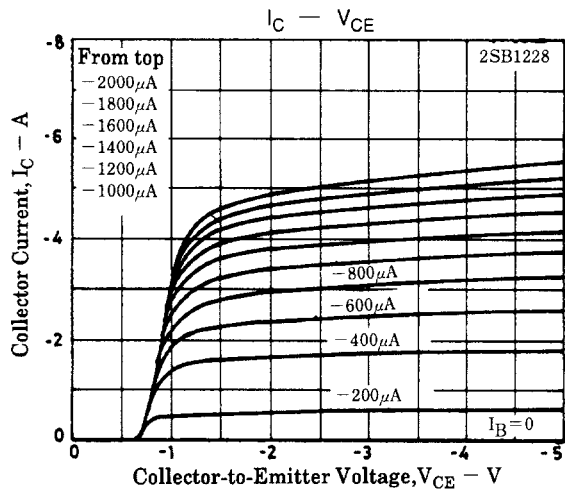
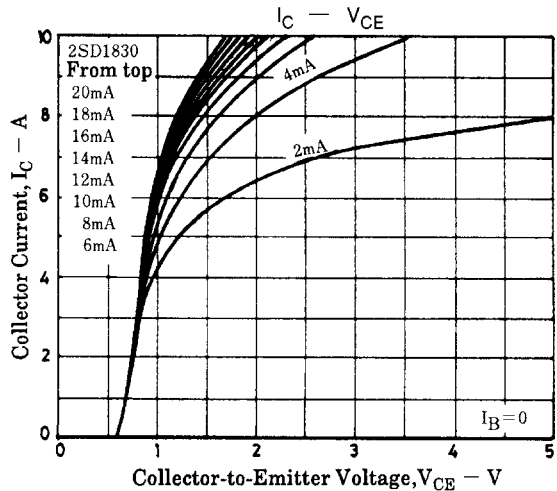
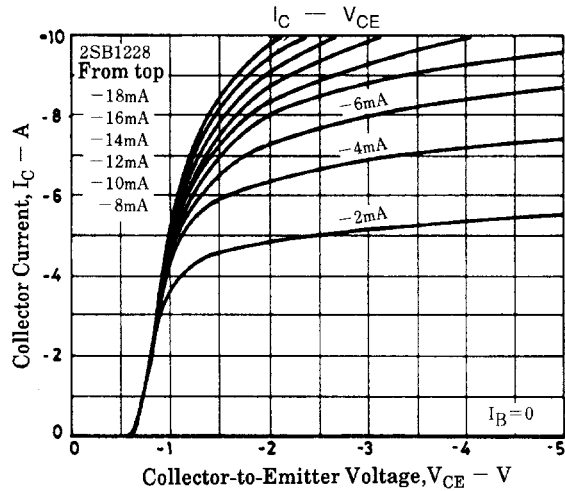
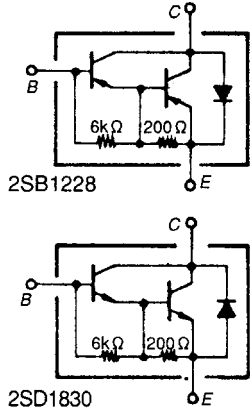
PW = 50 μs , Duty cycle $\leq 1\%$

500I_{B1} = -500I_{B2} = I_C = 4A

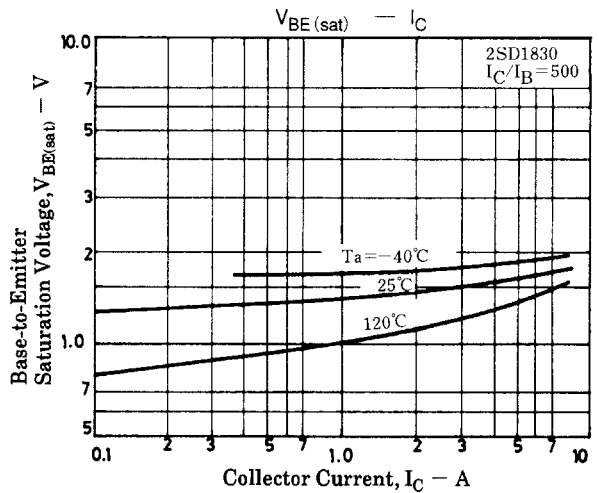
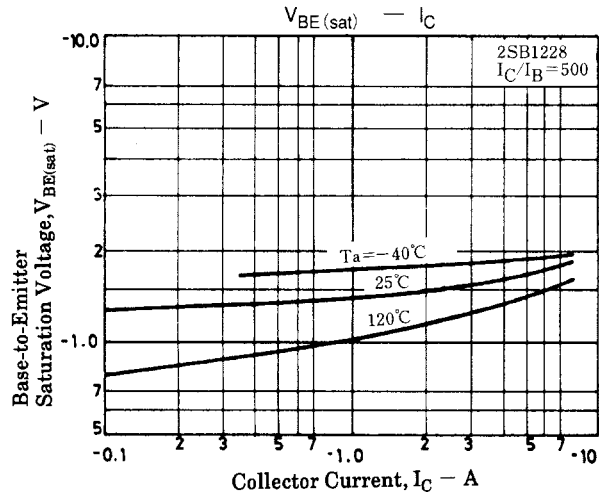
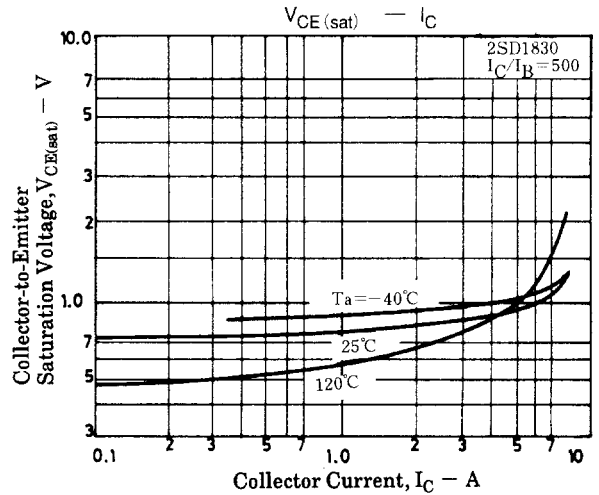
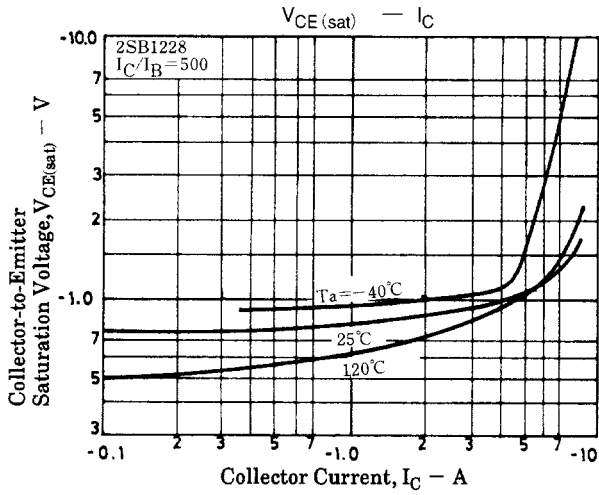
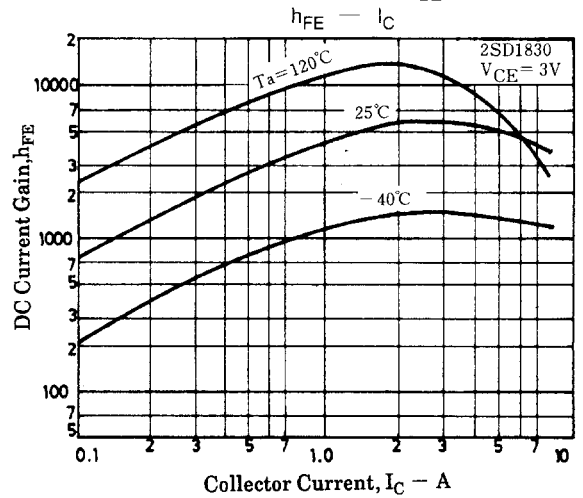
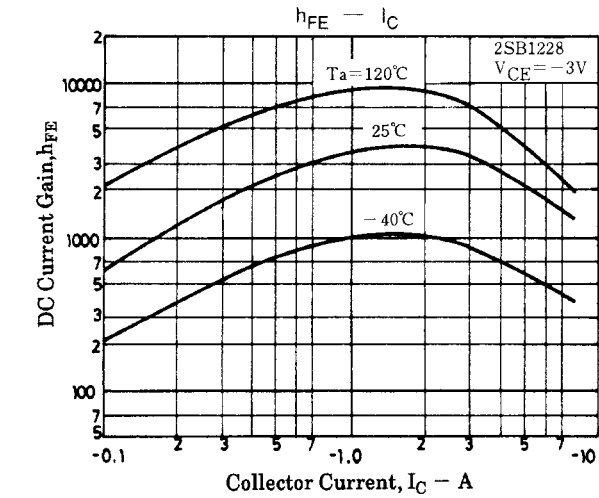
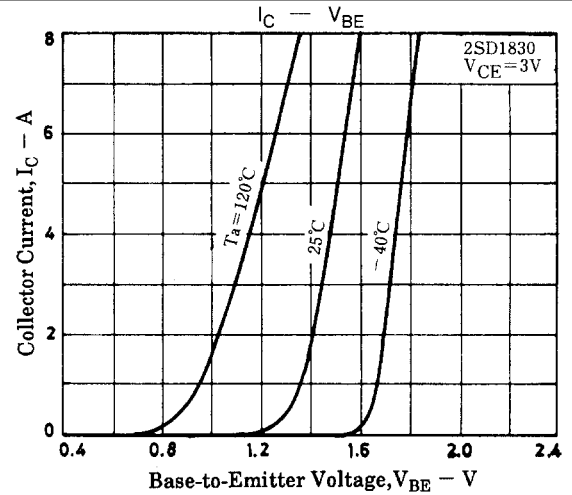
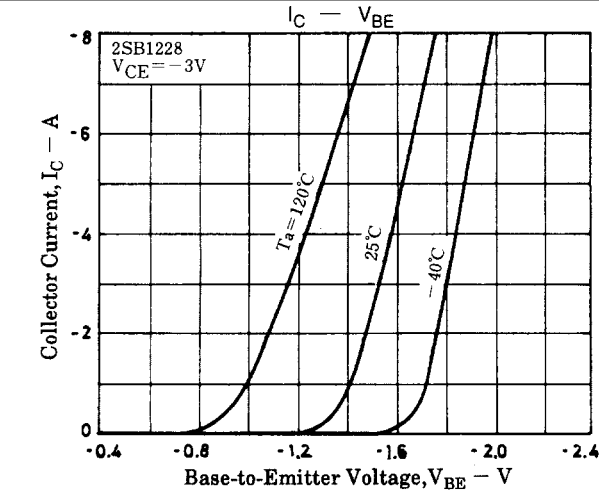


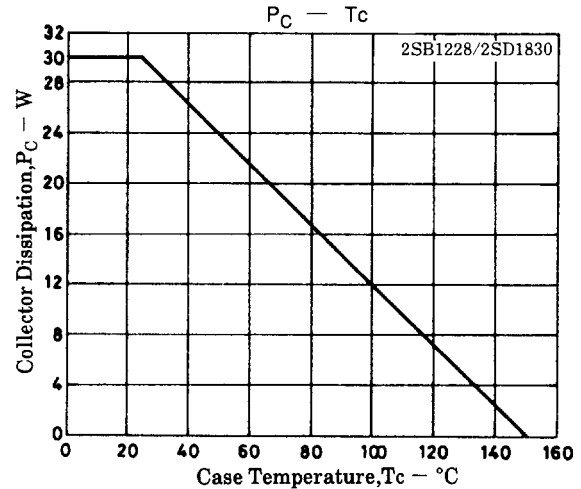
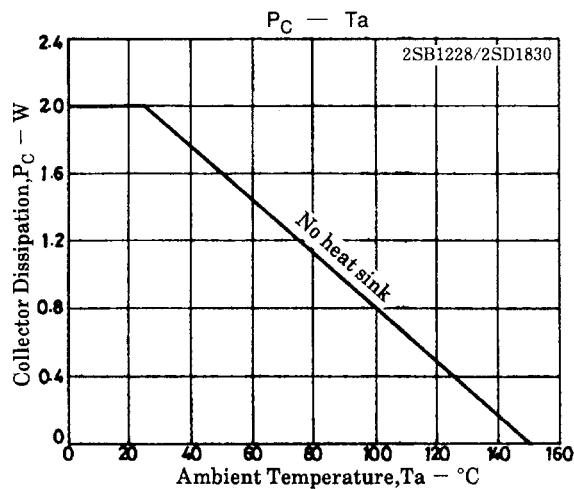
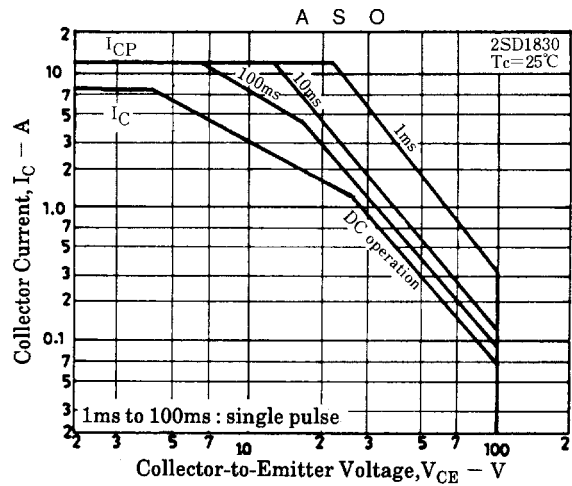
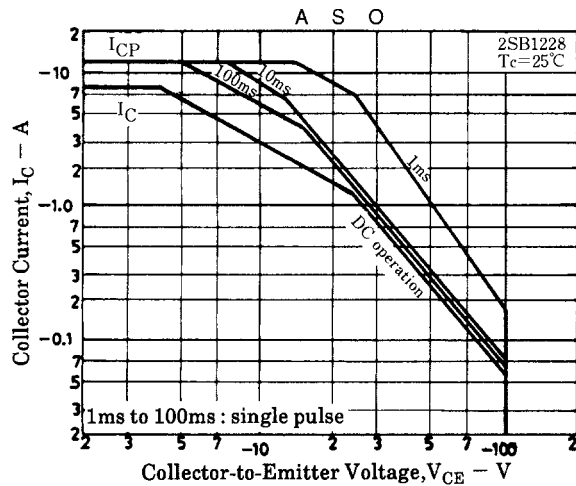
(For PNP, the polarity is reversed.)

Electrical Connection



2SB1228/2SD1830





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