



2SB1223/2SD1825

Driver Applications

Applications

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

Features

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

() : 2SB1223

Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		(-) 70	V
Collector-to-Emitter Voltage	V_{CEO}		(-) 60	V
Emitter-to-Base Voltage	V_{EBO}		(-) 6	V
Collector Current	I_C		(-) 4	A
Collector Current (Pulse)	I_{CP}		(-) 6	A
Collector Dissipation	P_C		2.0	W
		$T_c=25^\circ\text{C}$	20	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	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = (-)5\text{V}$, $I_C = 0$			(-) 3.0	mA
DC Current Gain	h_{FE}	$V_{CE} = (-)2\text{V}$, $I_C = (-)2\text{A}$	2000	5000		
Gain-Bandwidth Product	f_T	$V_{CE} = (-)5\text{V}$, $I_C = (-)2\text{A}$		20		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = (-)2\text{A}$, $I_B = (-)4\text{mA}$		0.9	(-) 1.5	V
				(-) 1.0		V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = (-)2\text{A}$, $I_B = (-)4\text{mA}$			(-) 2.0	V

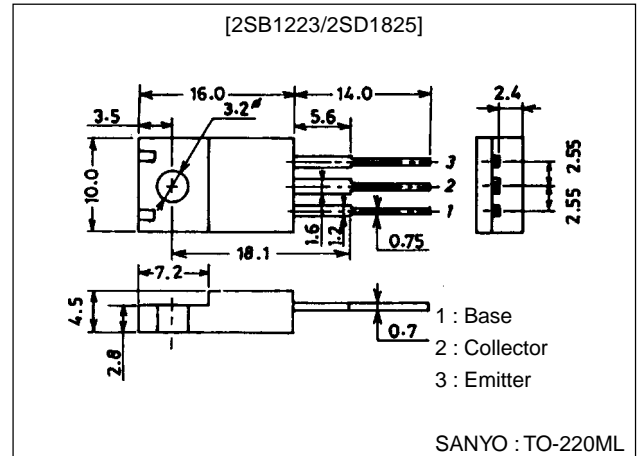
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Package Dimensions

unit:mm

2041A



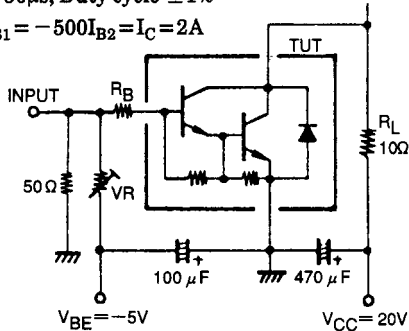
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)5mA, I_E=0$	(-70)			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)50mA, R_{BE}=\infty$	(-60)			V
Turn-ON Time	t_{on}	See specified Test Circuit		0.6		μs
Storage Time	t_{stg}	See specified Test Circuit		(0.5)		μs
				2.7		μs
Fall Time	t_f	See specified Test Circuit		(1.4)		μs
				1.6		μs
				(1.2)		μs

Switching Time Test Circuit

PW = 50 μs , Duty cycle $\leq 1\%$

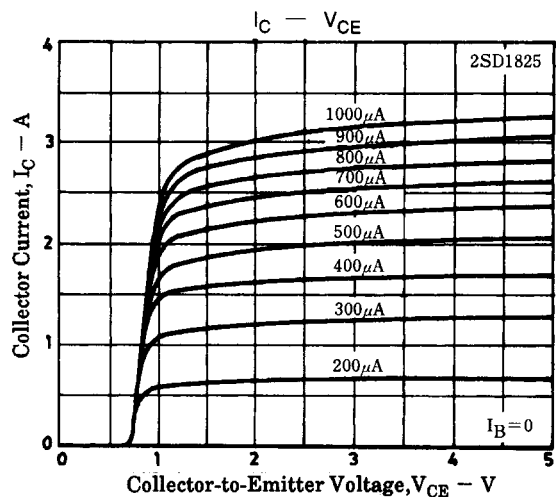
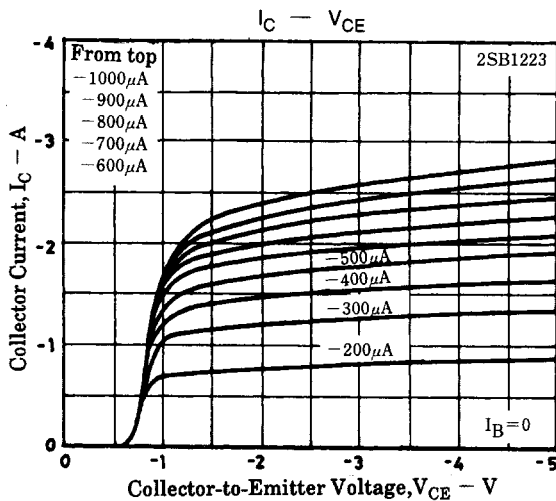
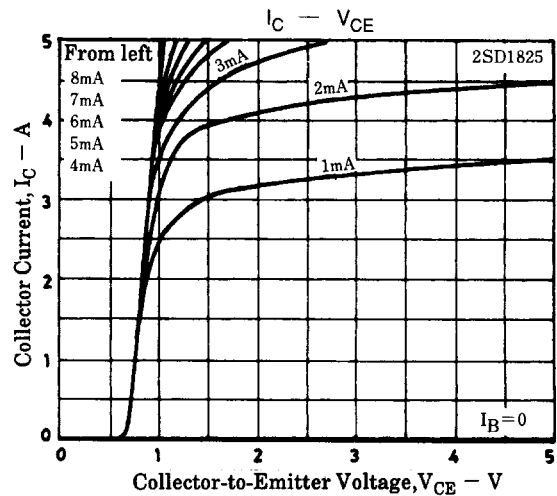
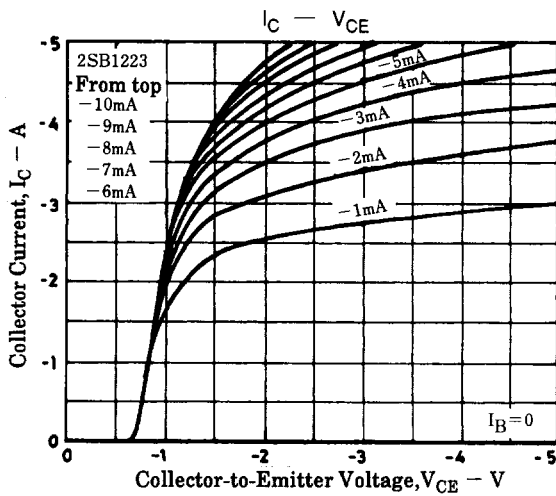
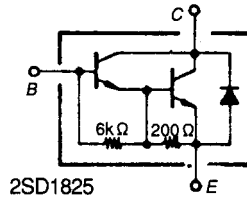
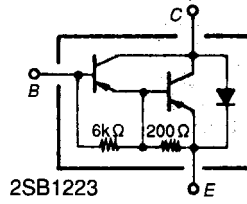
500I_{B1} = -500I_{B2} = I_C = 2A



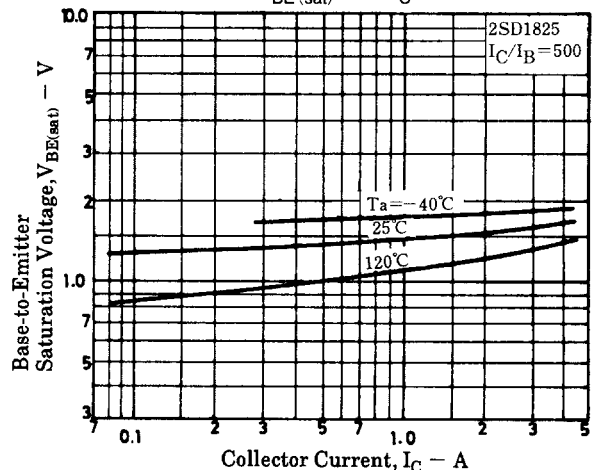
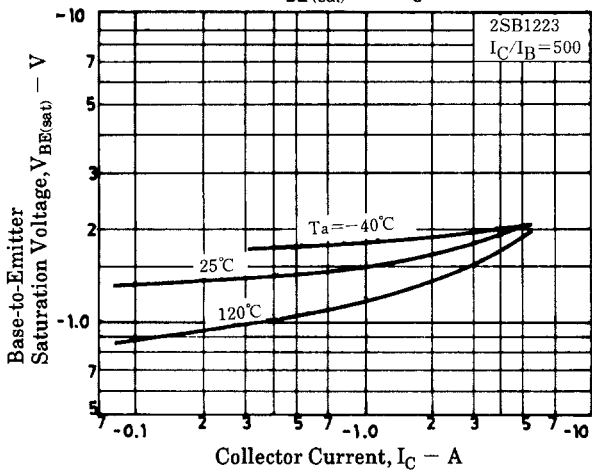
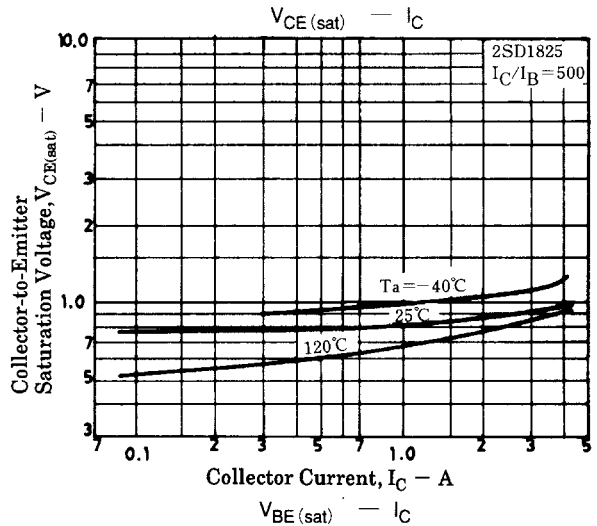
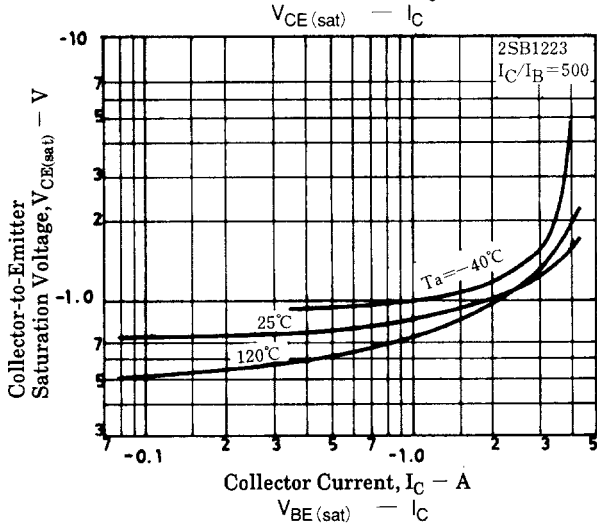
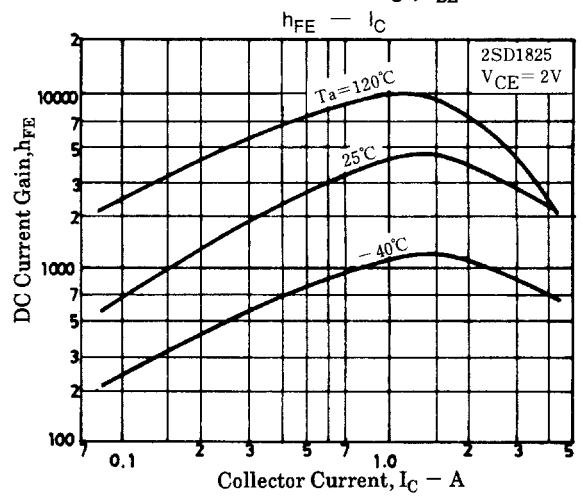
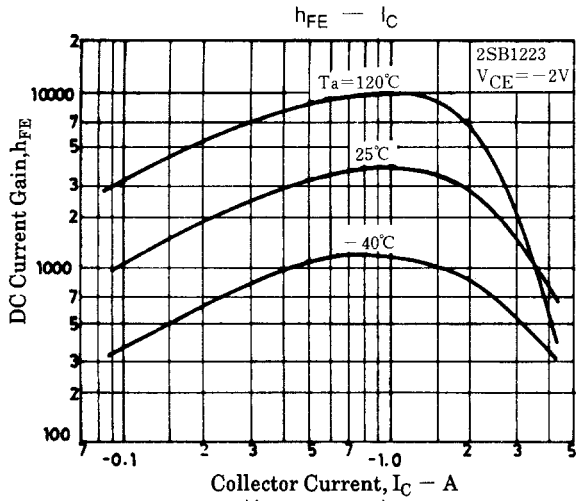
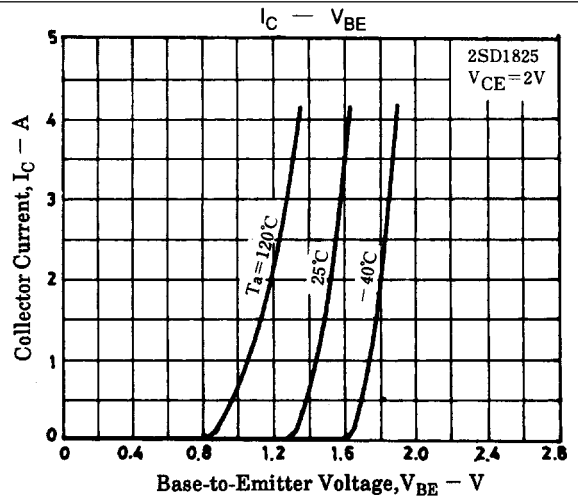
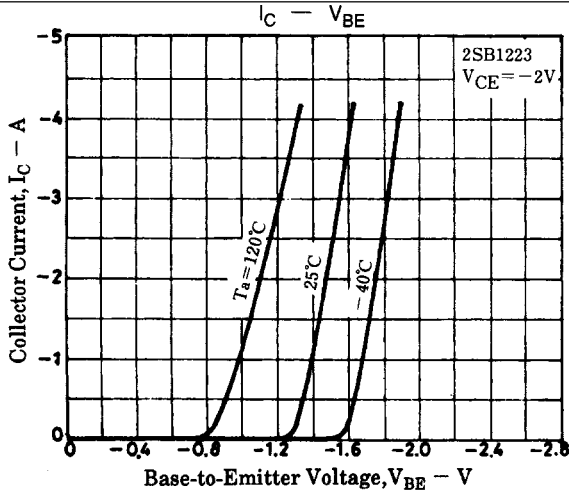
(For PNP, the polarity is reversed.)

Unit (resistance : Ω , capacitance : F)

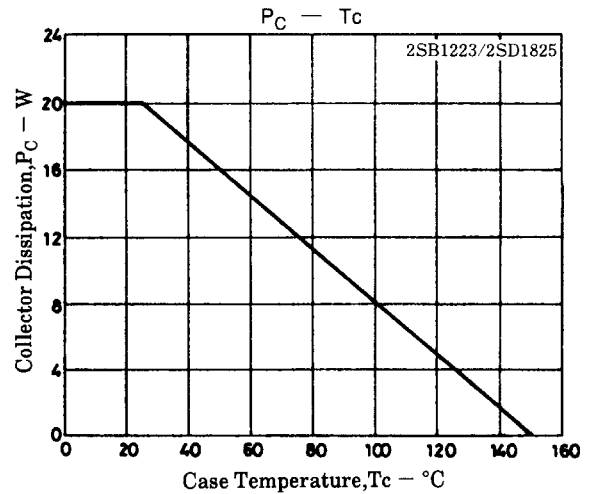
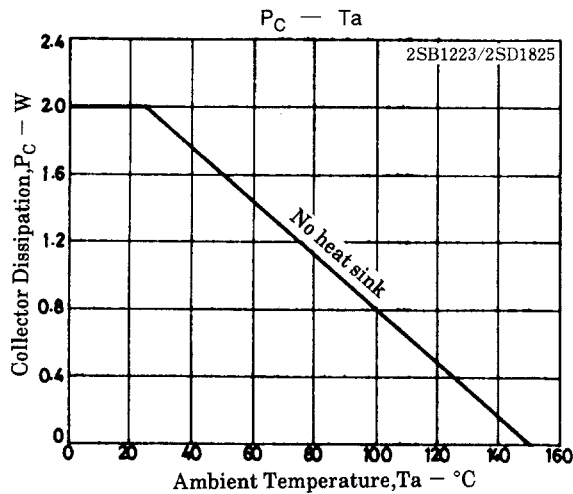
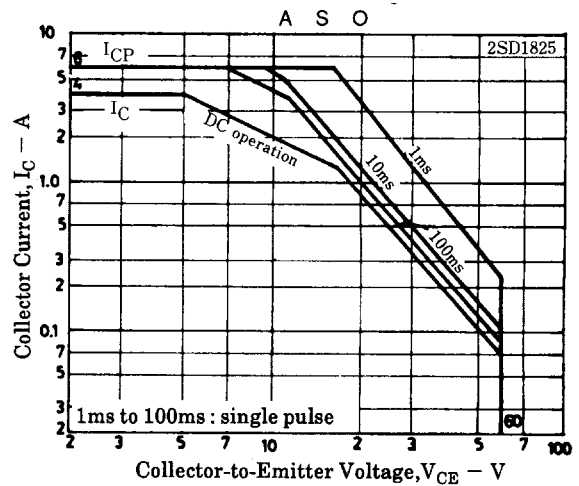
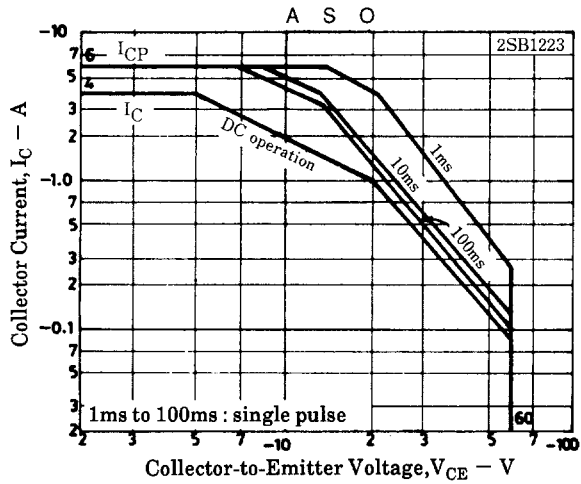
Electrical Connection



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