



2SB1397/2SD2100

Compact Motor Driver Applications

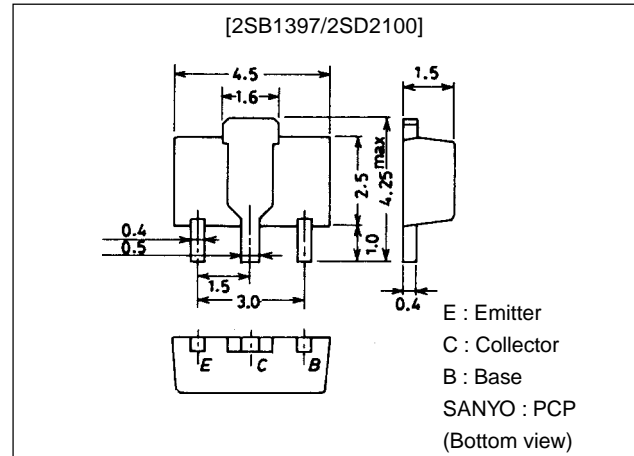
Features

- Low saturation voltage.
- Contains diode between collector and emitter.
- Contains bias resistance between base and emitter.
- Large current capacity.
- Small-sized package making it easy to provide high-density, small-sized hybrid ICs.

Package Dimensions

unit:mm

2038



() : 2SB1397

Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(-)25	V
Collector-to-Emitter Voltage	V_{CEO}		(-)20	V
Emitter-to-Base Voltage	V_{EBO}		(-)6	V
Collector Current	I_C		(-)2	A
Collector Current (Pulse)	I_{CP}		(-)4	A
Collector Dissipation	P_C	Mounted on ceramic board (250mm ² ×0.8mm)	1.3	W
Junction Temperature	T_J		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=(-)20V, I_E=0$			(-)1.0	μA
DC Current Gain	h_{FE1}	$V_{CE}=(-)2V, I_C=(-)0.5A$	(-)70			
	h_{FE2}	$V_{CE}=(-)2V, I_C=(-)2A$	(-)50			
Gain-Bandwidth Product	f_T	$V_{CE}=(-)2V, I_C=(-)0.5A$		(300)		MHz
				200		MHz
Output Capacitance	C_{ob}	$V_{CB}=(-)10V, f=1MHz$		(40)25		pF

Marking : 2SB1397 : BP
2SD2100 : DP

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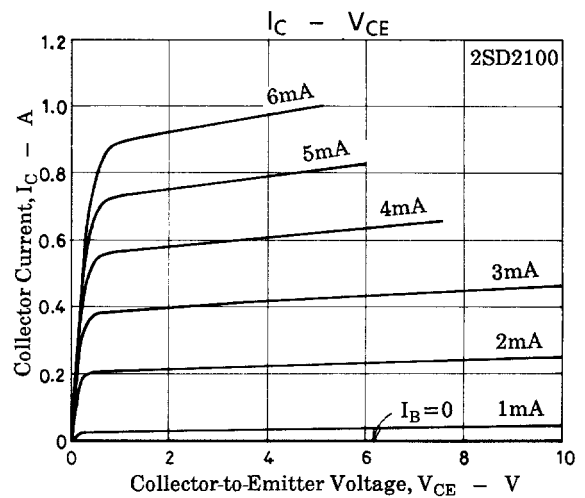
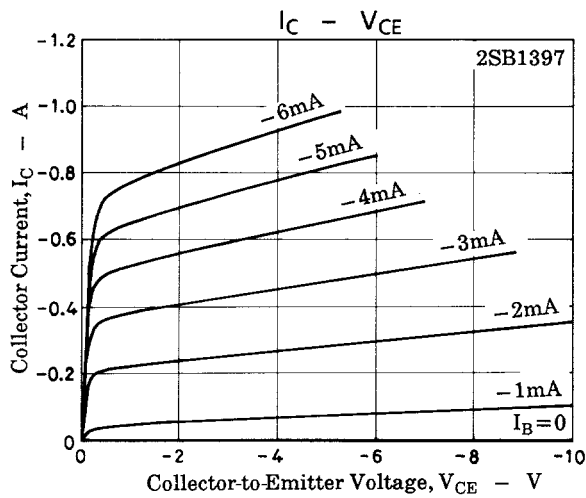
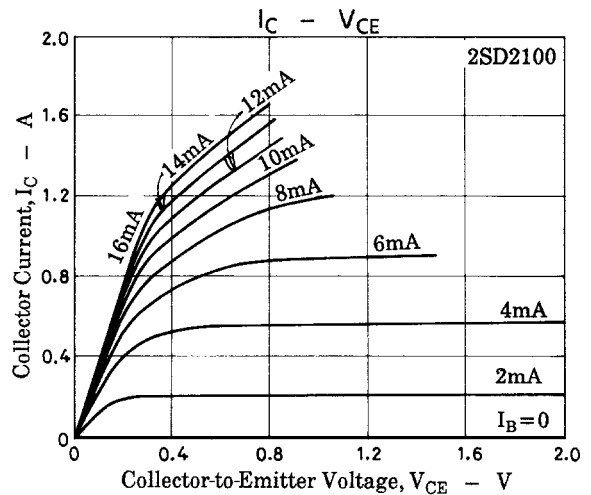
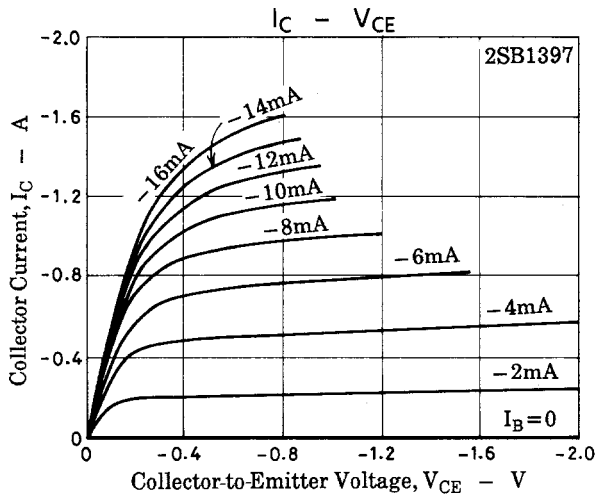
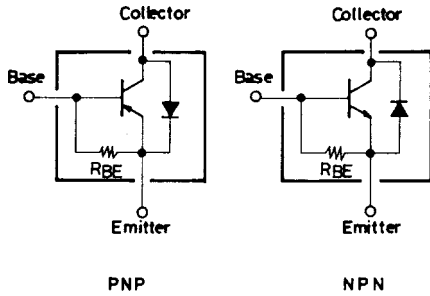
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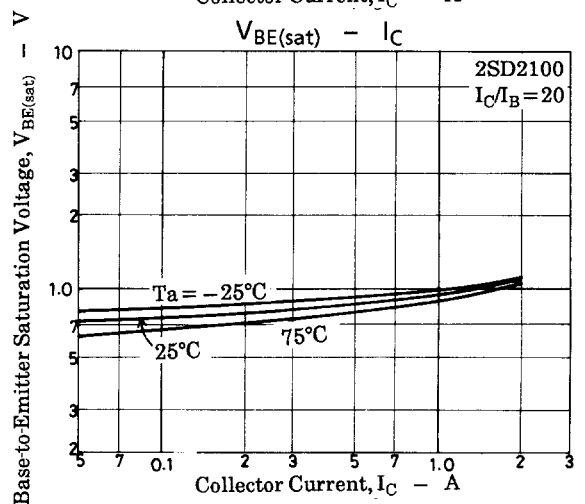
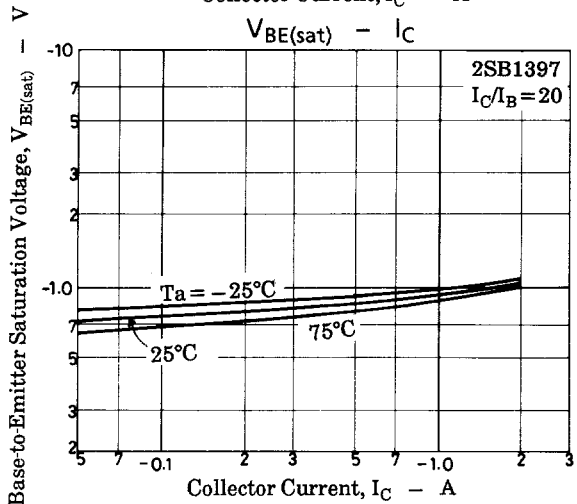
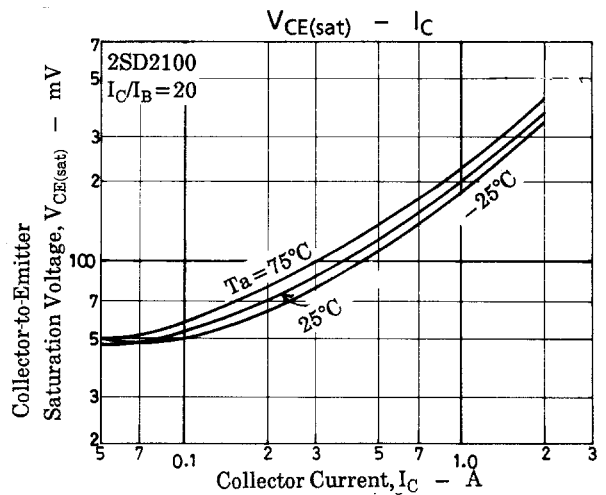
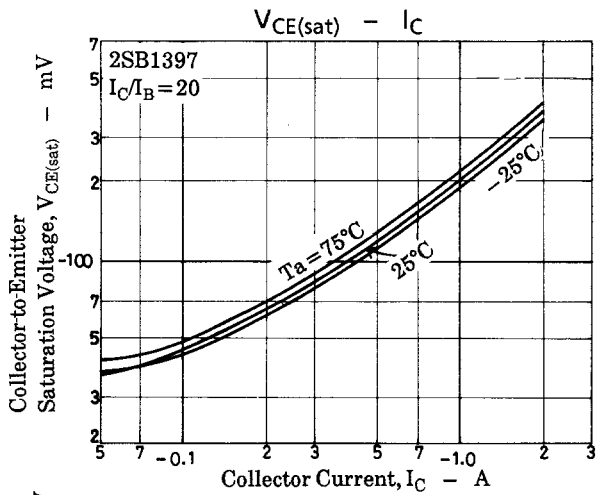
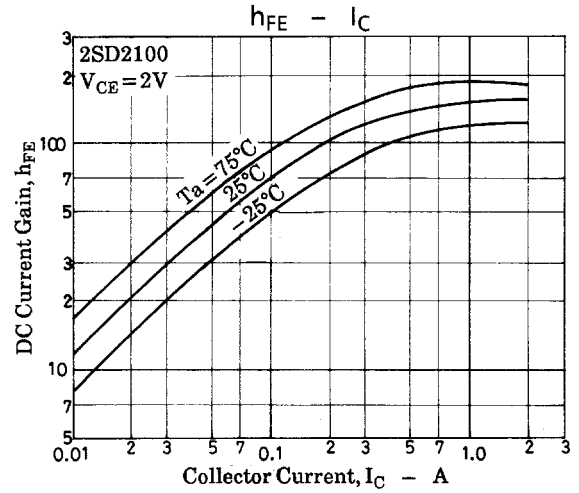
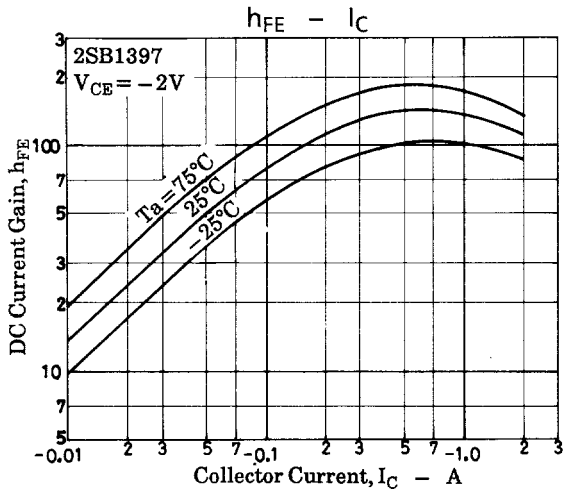
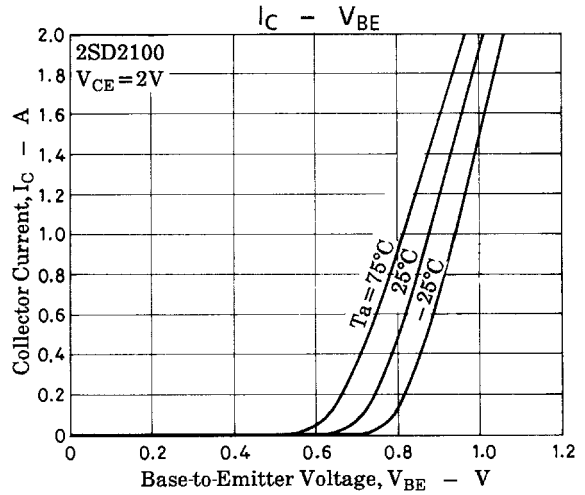
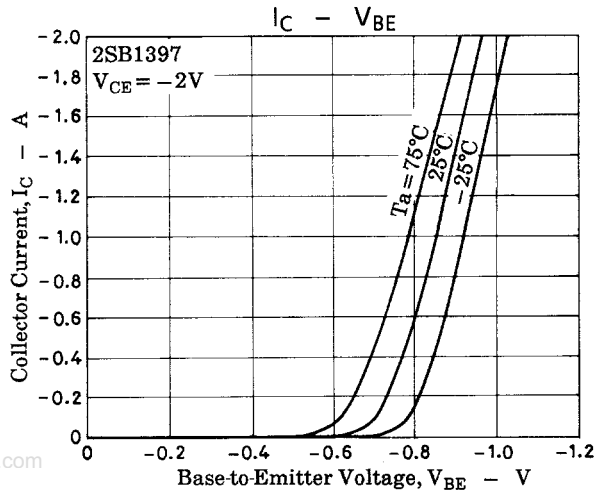
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)1A, I_B=(-)50mA$		(-)0.25	(-)0.5	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)1A, I_B=(-)50mA$			(-)1.5	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0$	(-)25			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO1}$	$I_C=(-)10\mu A, R_{BE}=\infty$	(-)25			V
	$V_{(BR)CEO2}$	$I_C=(-)10mA, R_{BE}=\infty$	(-)20			V
Diode Forward Voltage	V_F	$I_F=0.5A$			(-)1.5	k Ω
Base-to-Emitter Resistance	R_{BE}			1.6		

Electrical Connection

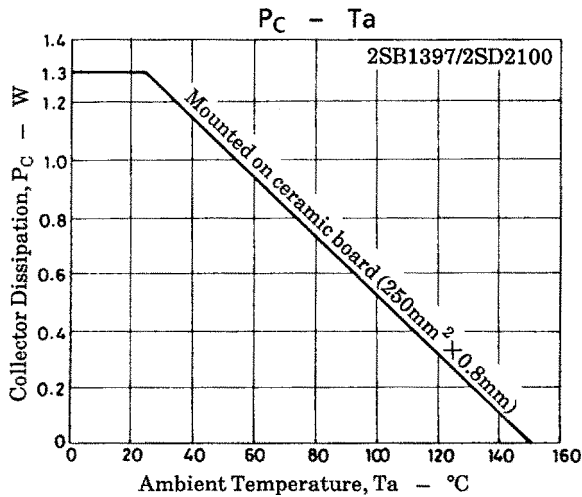
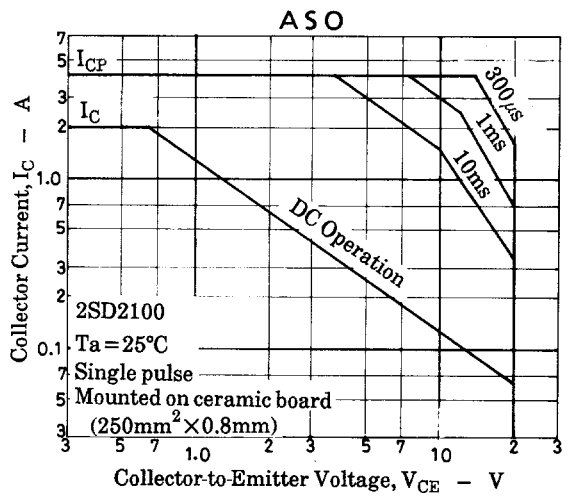
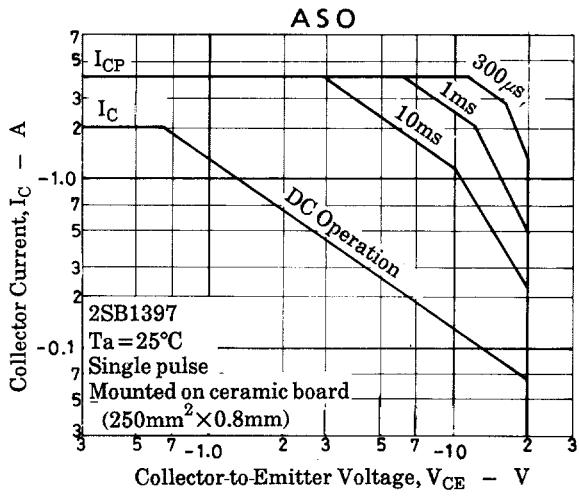
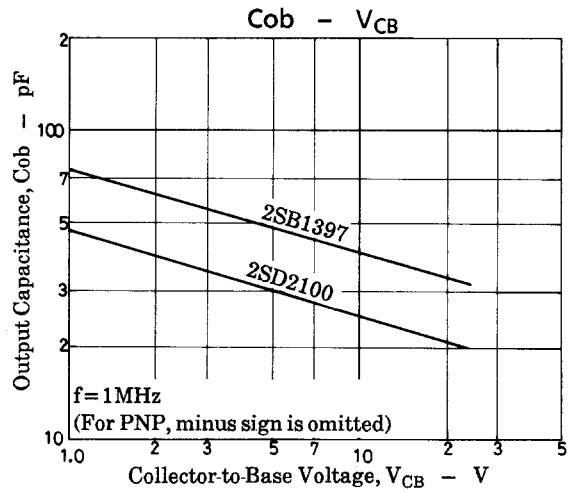
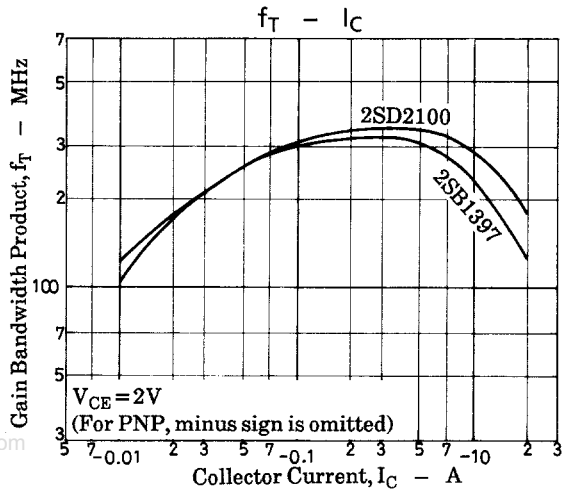
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