



## 2SB1397/2SD2100

### Compact Motor Driver Applications

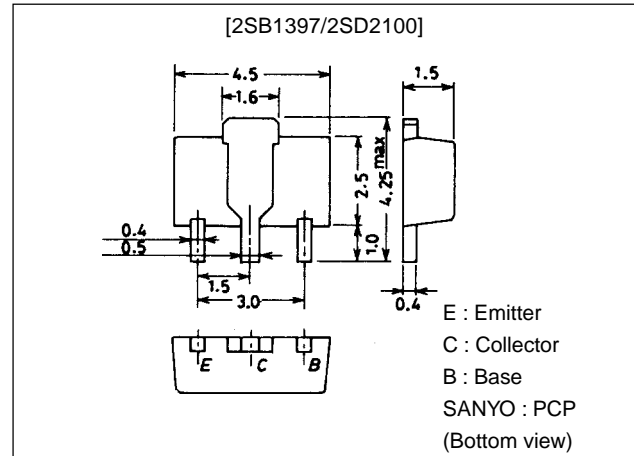
#### Features

- 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 <sup>2</sup> ×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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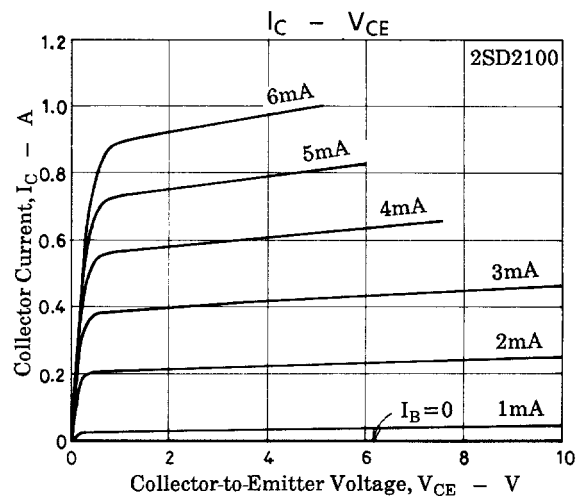
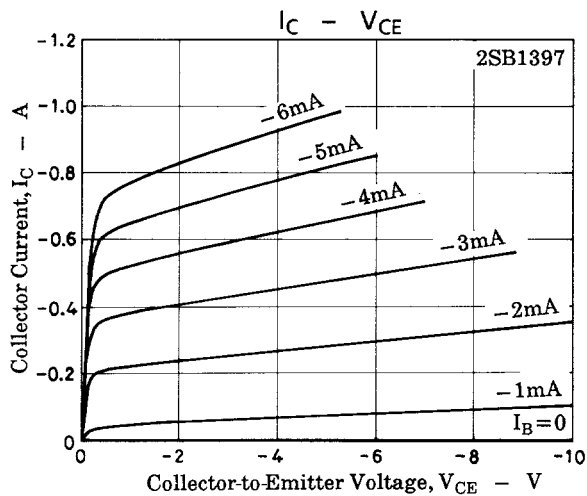
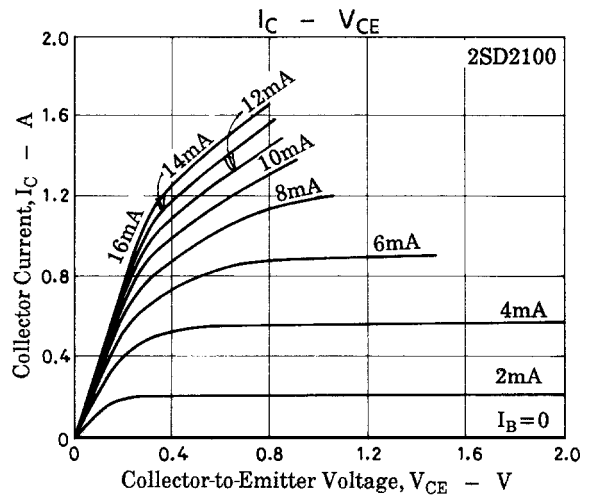
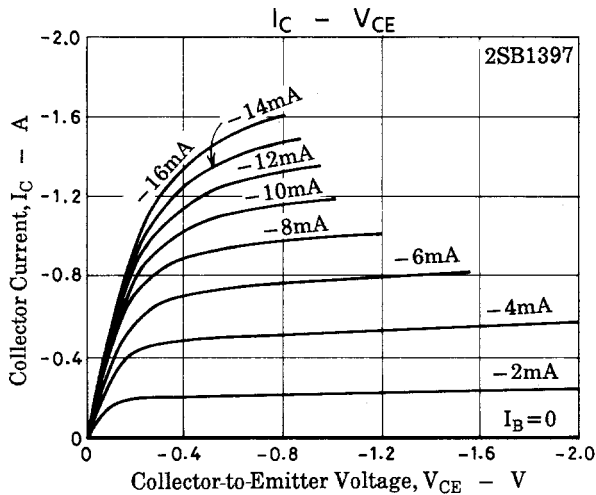
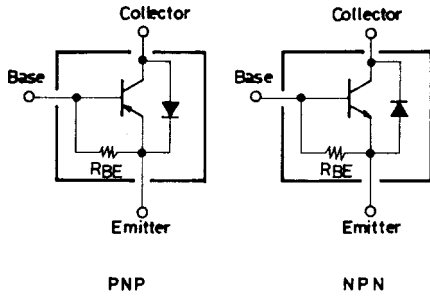
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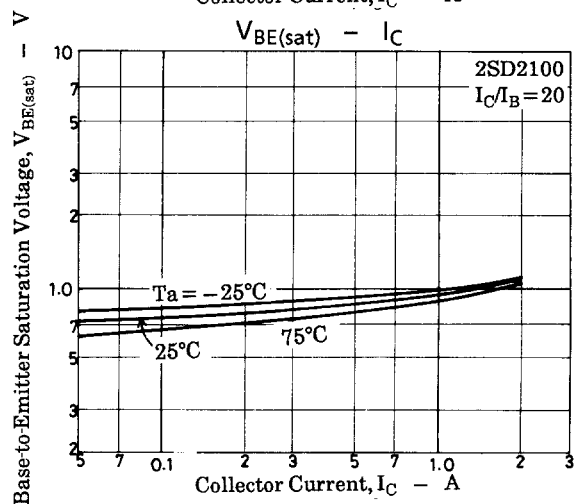
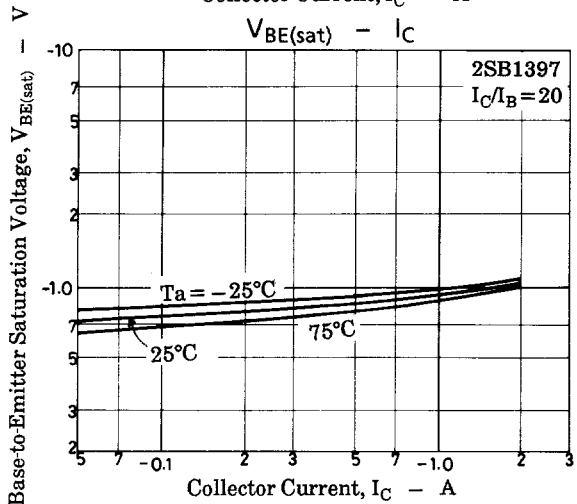
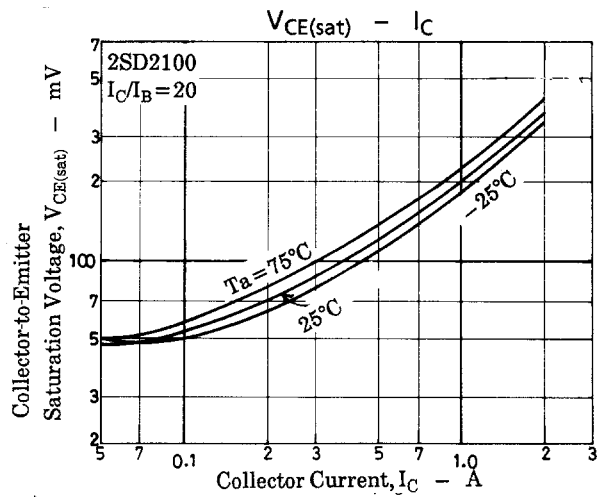
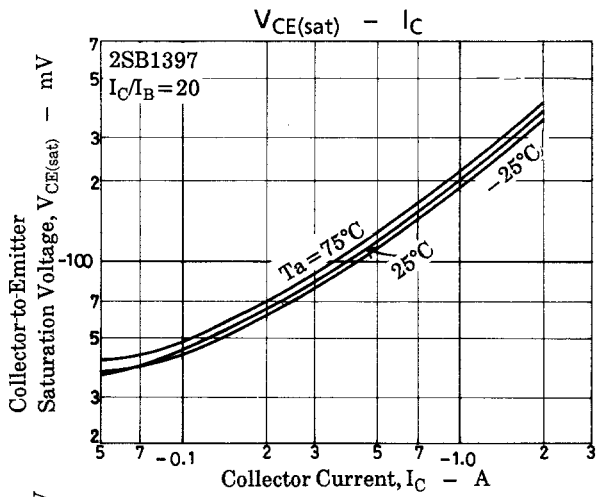
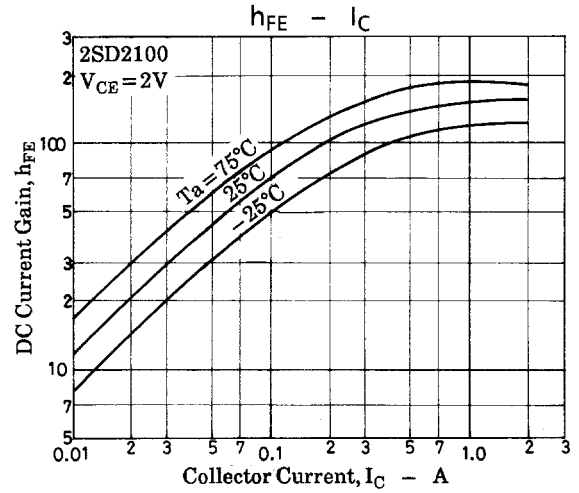
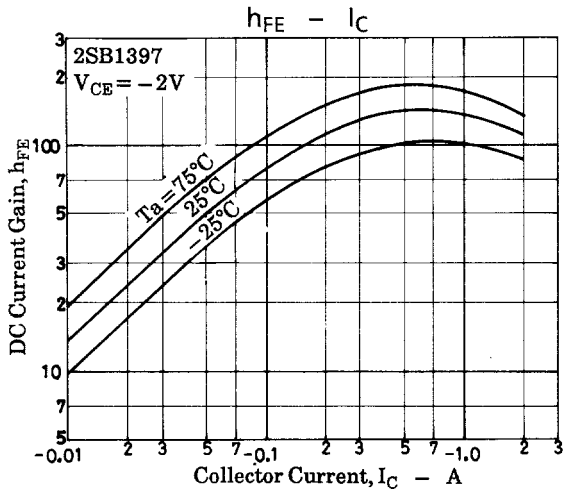
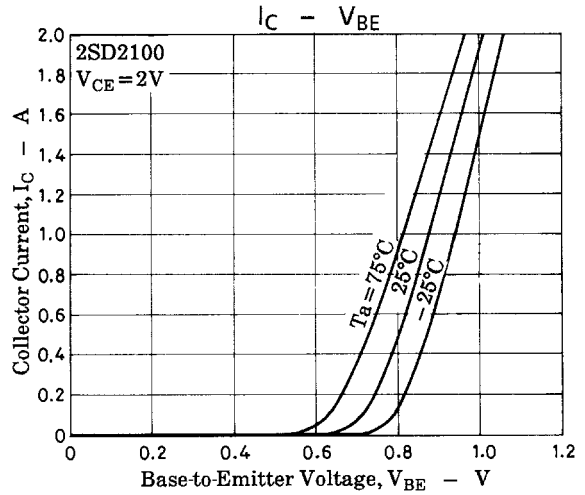
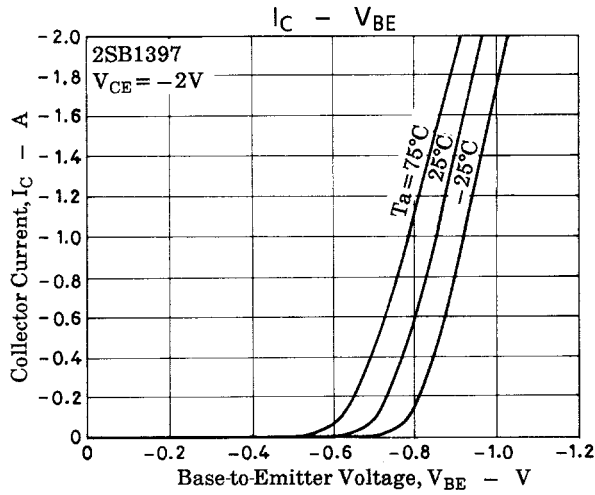
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)1A, I_B=(-)50mA$		(-)0.25	(-)0.5	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)1A, I_B=(-)50mA$			(-)1.5	V
Collector-to-Base 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 $\Omega$
Base-to-Emitter Resistance	$R_{BE}$			1.6		

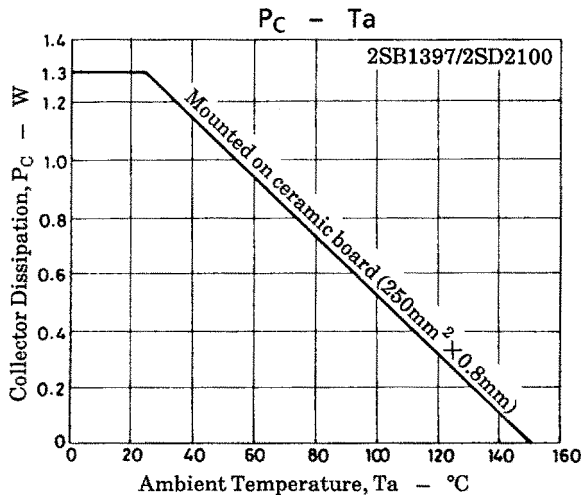
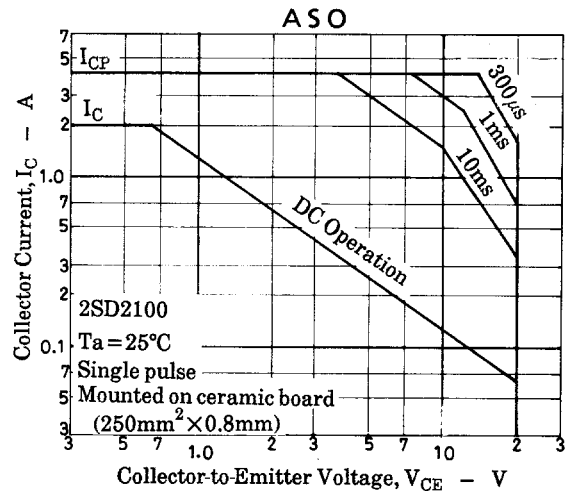
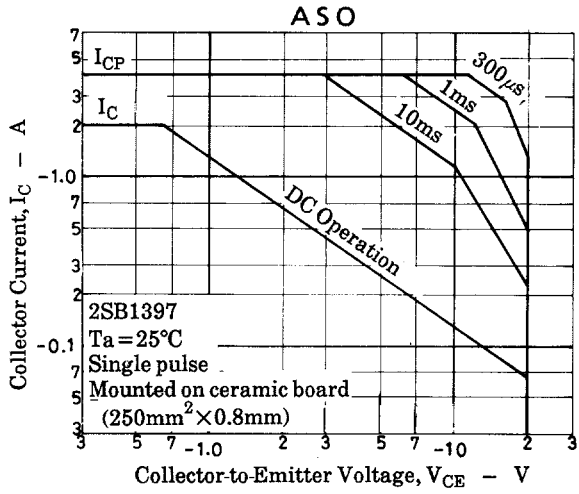
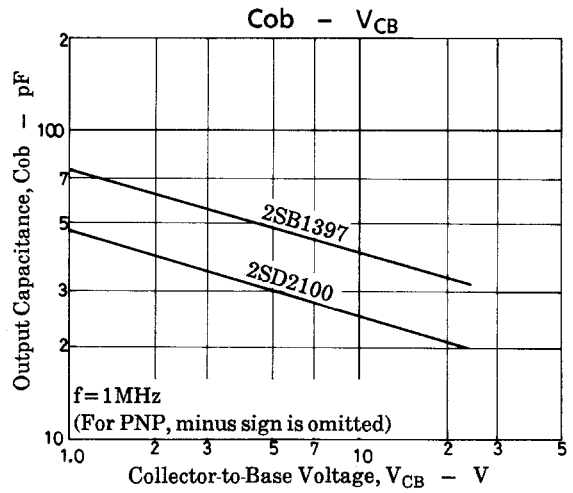
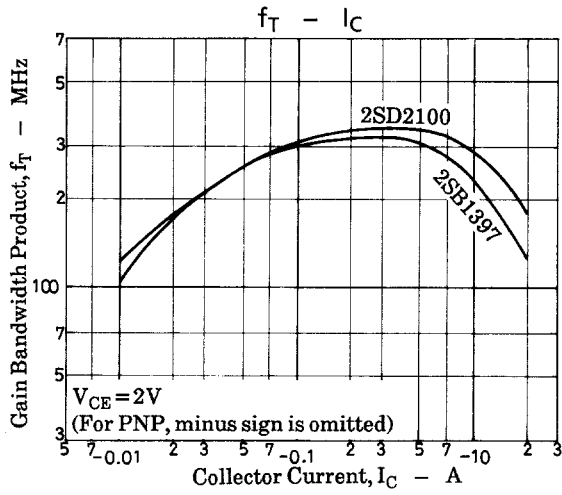
## Electrical Connection



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