Ordering number:EN3176A

PNP/NPN Epitaxial Planar Silicon Transistors

2SB1397/2SD2100

Compact Motor Driver Applications

Features

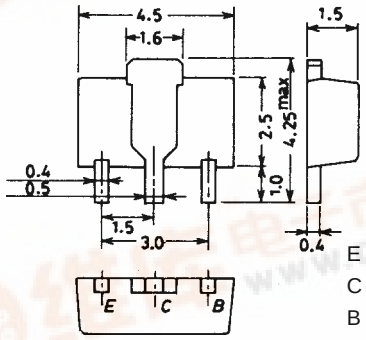
- Low saturation voltage.
- Contains diode between collector and emitter.
- Contains bias resistance between base and emitter.
- Large current capacity.
- Small-sized package making it easy to provide high-density, small-sized hybrid ICs.

Package Dimensions

unit:mm

2038

[2SB1397/2SD2100]



E : Emitter
C : Collector
B : Base
SANYO : PCP
(Bottom view)

( ) : 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 (250mm²×0.8mm)	1.3	W
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–55 to +150	˚C

Electrical Characteristics at Ta = 25˚C

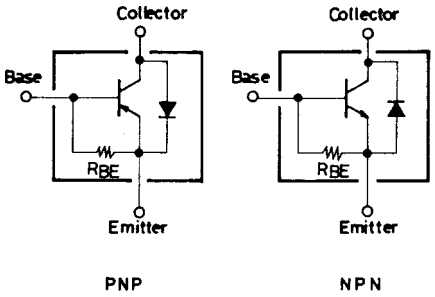
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=(–)20V, I_E=0			(–)1.0	μA
DC Current Gain	$h_{FE}1$	V_{CE}=(–)2V, I_C=(–)0.5A	(–)70			
	$h_{FE}2$	V_{CE}=(–)2V, I_C=(–)2A	(–)50			
Gain-Bandwidth Product	f_T	V_{CE}=(–)2V, I_C=(–)0.5A		(300)		MHz
				200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

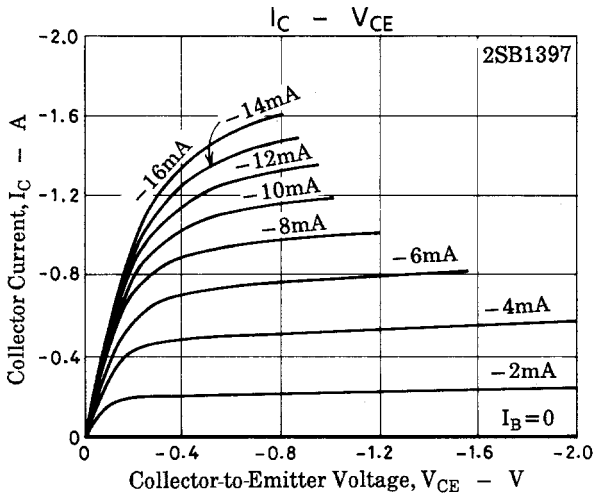
Marking : 2SB1397 : BP
2SD2100 : DP

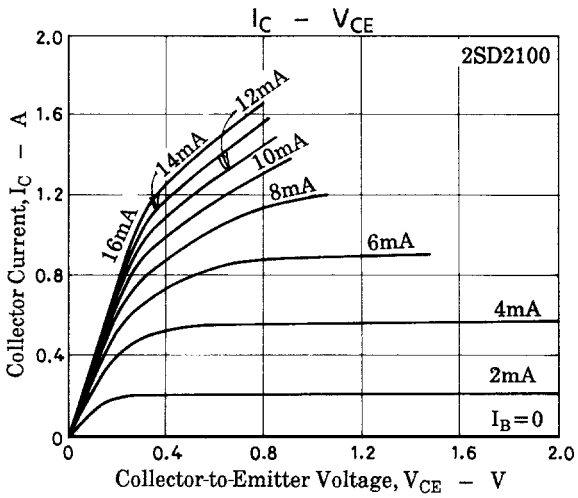
SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

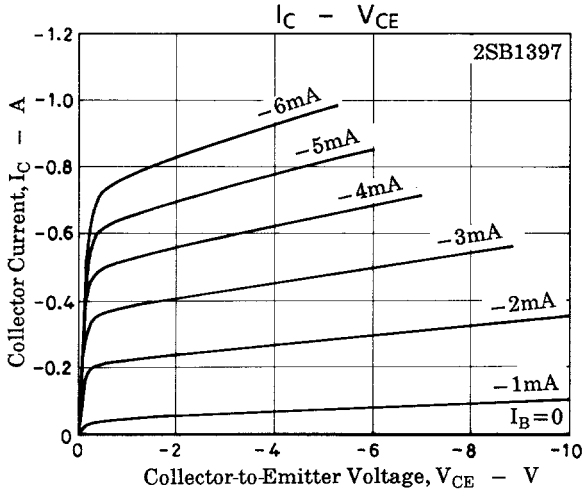
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=(–)1A, I_B=(–)50mA		(–)0.25	(–)0.5	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=(–)1A, I_B=(–)50mA			(–)1.5	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(–)10μA, I_E=0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

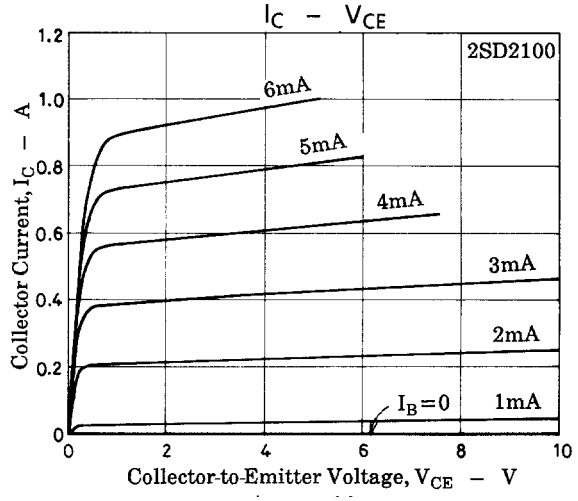
Electrical Connection



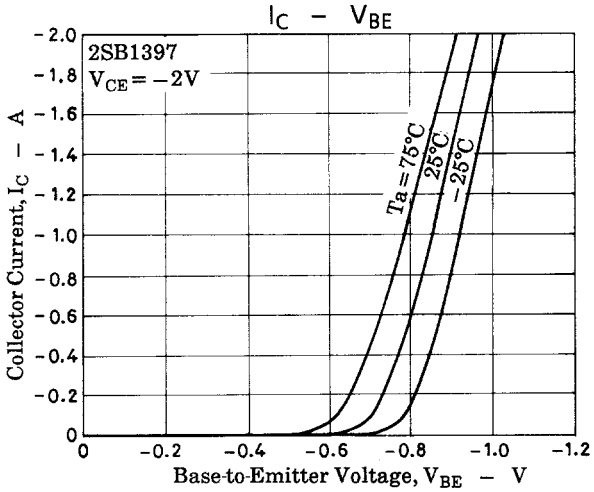




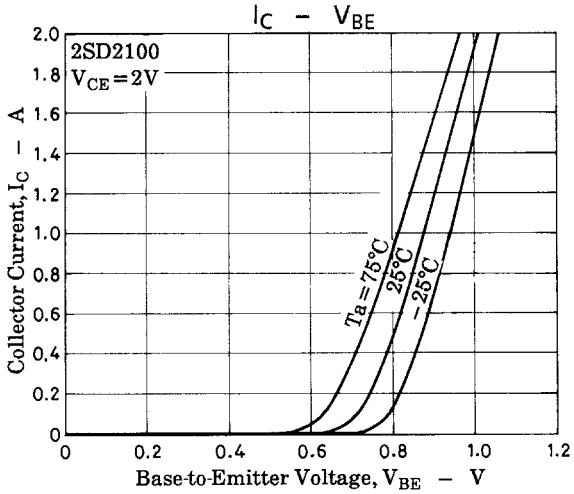




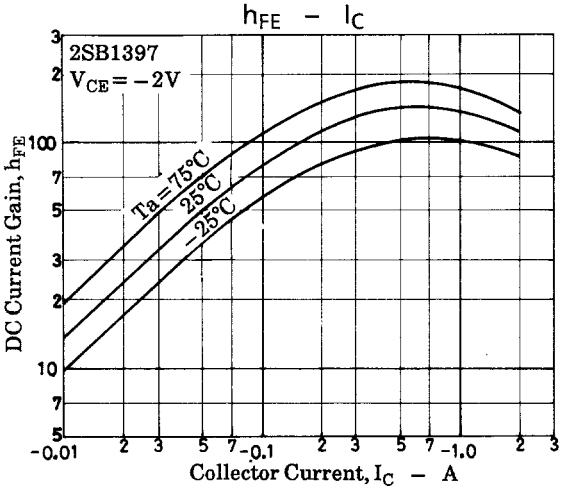
I_C – V_{BE}



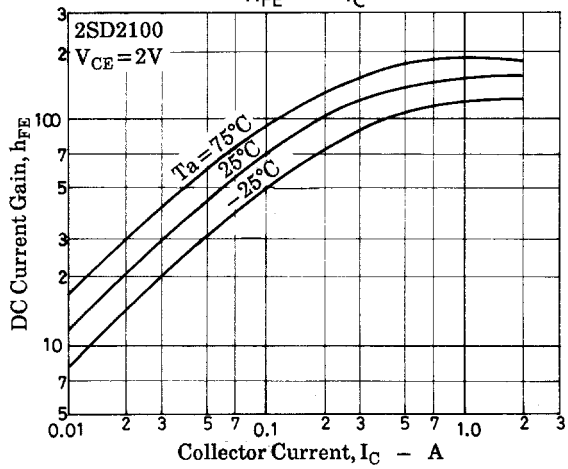
I_C – V_{BE}



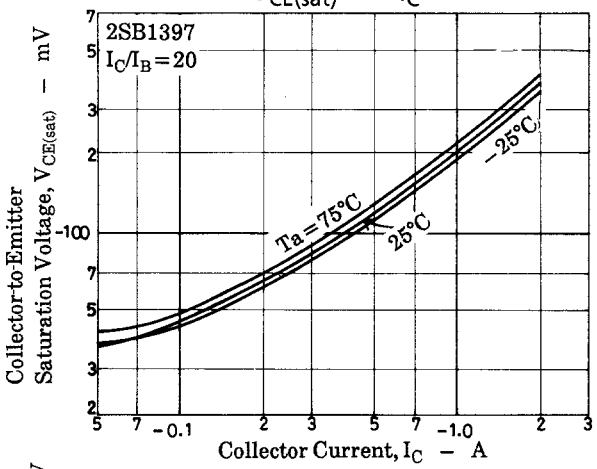
h_{FE} – I_C



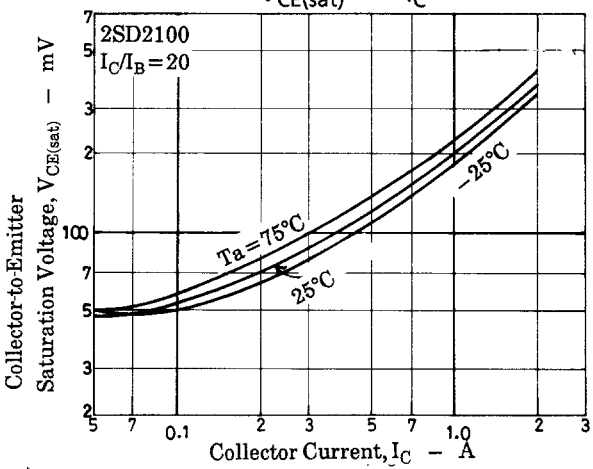
h_{FE} – I_C



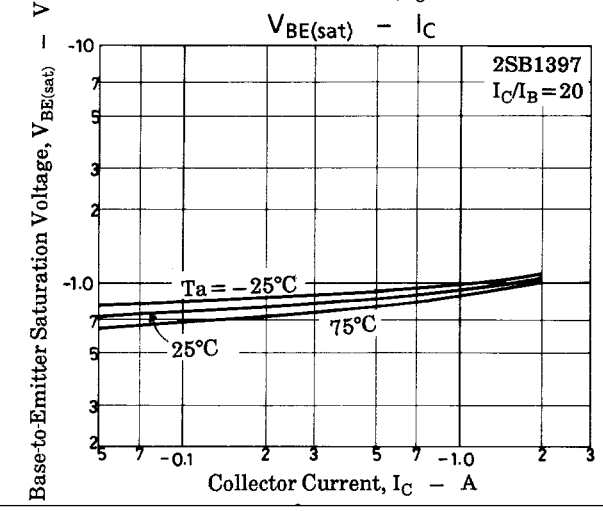
$V_{CE(sat)}$ – I_C



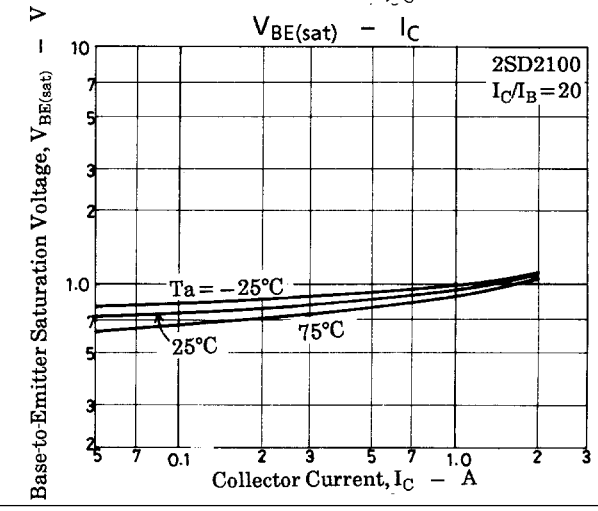
$V_{CE(sat)}$ – I_C



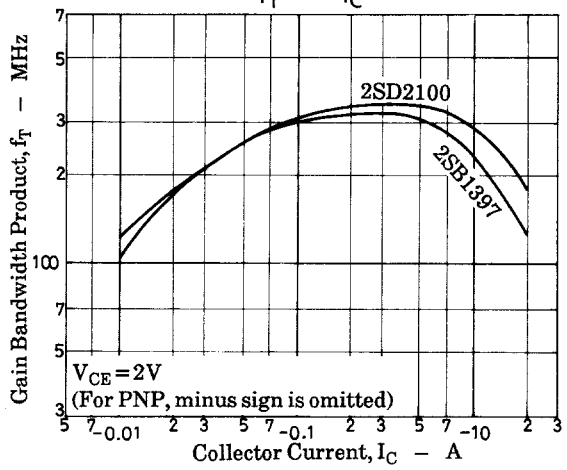
$V_{BE(sat)}$ – I_C



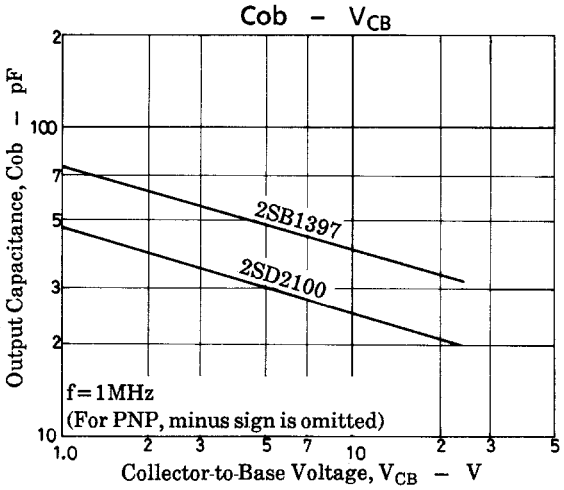
$V_{BE(sat)}$ – I_C



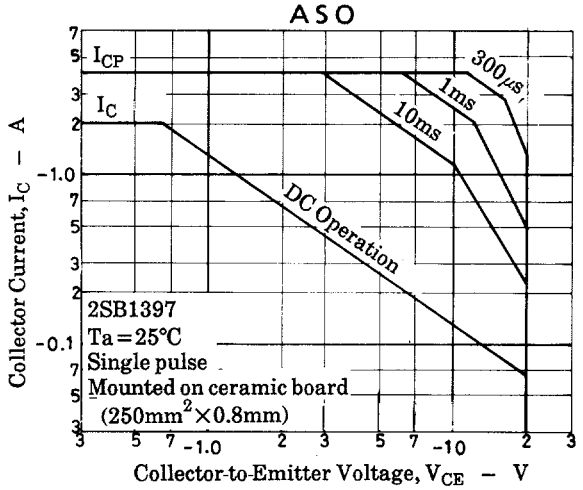
f_T – I_C



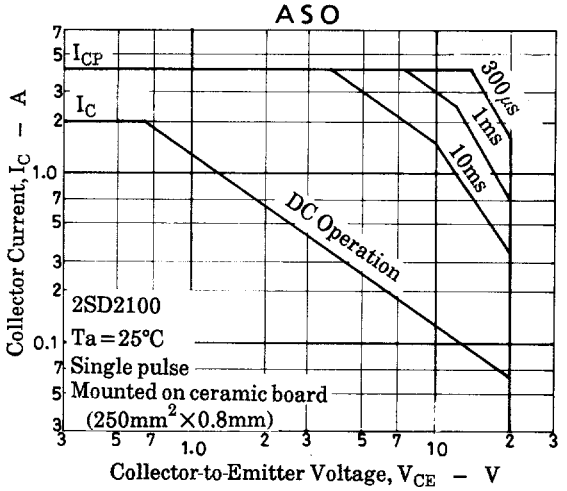
Cob – V_{CB}



ASO



ASO



P_C – Ta