Silicon NPN transistor epitaxial type
C5906

[Applications]
High voltage, High current

[Feature]
High voltage VCEO= 170V
High current gain charactristic
Low collector-emitter saturation voltage VCE(sat)= 0.45V(Max.) at IC/IB= 2A/200mA
Fast-switching speed

[Absolute maximum ratings (Ta=25C)]

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	VCBO	200	V
Collector-emitter voltage	VCEO	170	V
Emitter-base voltage	VEBO	6	V
Collector current	IC	5	A
Junction temperature	Tj	150	C
Storage temperature	Tstg	-55 to 150	C

[Electrical characteristics (Ta=25C)]

Characteristic	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BVCBO	200	-	-	V	IC= 1mA
Collector-emitter breakdown voltage	BVCEO	170	-	-	V	IC= 20mA
Emitter-base breakdown voltage	BVEBO	6	-	-	V	IE= 1mA
Collector cut-off current	ICBO	-	-	10	uA	VCB= 100V
DC current gain 1	hFE 1	40	-	-	-	VCE= 5V, IC= 500mA
DC current gain 2	hFE 2	40	-	-	-	VCE= 5V, IC= 2A
DC current gain 3	hFE 3	15	-	-	-	VCE= 5V, IC= 5A
Collector-emitter saturation voltage 1	VCE(sat) 1	-	-	0.45	V	IC= 2A, IB= 200mA
Collector-emitter saturation voltage 2	VCE(sat) 2	-	-	1	V	IC= 5A, IB= 500mA
Base-emitter saturation voltage 1	VBE(sat) 1	-	-	1.1	V	IC= 2A, IB= 200mA
Base-emitter saturation voltage 2	VBE(sat) 2	-	-	1.5	V	IC= 5A, IB= 500mA
Transition frequency	fT	-	90	-	MHz	VCE= 10V, IE= -100mA
Collector output capacitance	Cob	-	-	80	pF	VCB= 50V, f = 1MHz, IE= 0A
Turn on time	ton	-	-	1	us	VCC= 40V, IC= 5A
Turn off time	toff	-	-	2	us	IB1= -IB2= 500mA

Notice 1) These are measured data of transistors assembled by PHENITEC SEMICONDUCTOR Corp. and are for reference only.
Notice 2) The contents described herein are subject to change without notice.

Fig.1 IC - VBE(on)
at VCE= 5V, Ta= 25C

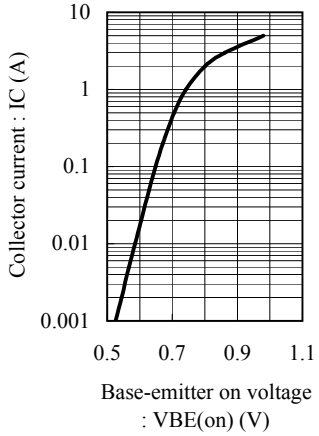


Fig.2 hFE - IC
at VCE= 5V, Ta= 25C

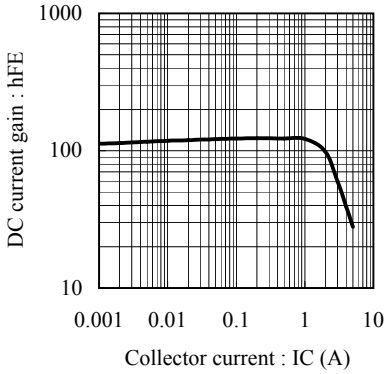


Fig.3 VCE(sat) - IC
at IC/IB= 10, Ta= 25C

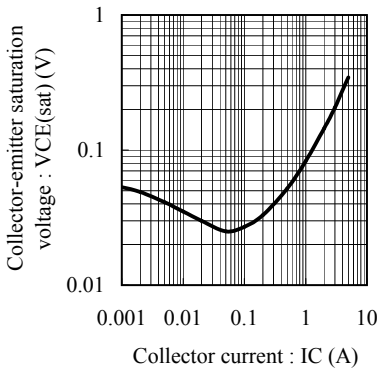


Fig.4 VBE(sat) - IC
at IC/IB= 10, Ta= 25C

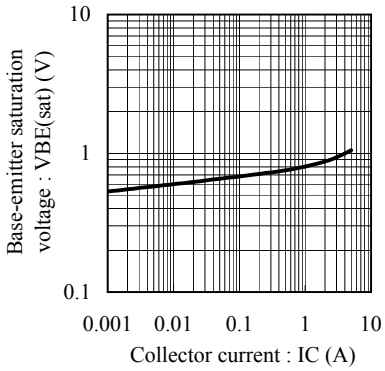


Fig.5 fT - IE
at VCE= 10V, Ta= 25C

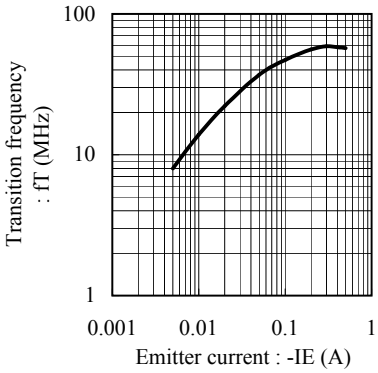
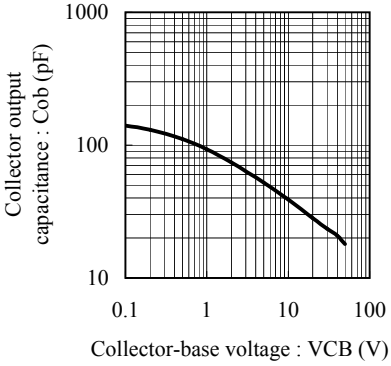


Fig.6 Cob - VCB
at f= 1MHz, Ta= 25C



Ftg.7 Cib - VEB
at f= 1MHz, Ta= 25C