

**Silicon NPN transistor epitaxial type  
C5902**

**[ Applications ]**

CFL inverter driver

**[ Feature ]**

High current gain characteristic

Low collector-emitter saturation voltage  $V_{CE(sat)} = 0.2V(\text{Max.})$  at  $I_C/I_B = 500mA/50mA$

**[ Absolute maximum ratings (Ta=25C) ]**

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	VCBO	60	V
Collector-emitter voltage	VCEO	60	V
Emitter-base voltage	VEBO	7	V
Collector current (DC)	IC	5	A
Collector current (Pulse*)	ICP	8	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	60	-	-	V	IC= 100uA
Collector-emitter breakdown voltage	BVCEO	60	-	-	V	IC= 1mA
Emitter-base breakdown voltage	BVEBO	7	-	-	V	IE= 10uA
Collector cut-off current	ICBO	-	-	10	uA	VCB= 50V
Emitter cut-off current	IEBO	-	-	10	uA	VEB= 7V
DC current gain 1	hFE 1	60	-	-	-	VCE= 1V, IC= 0.1A
DC current gain 2	hFE 2	200	-	400	-	VCE= 1V, IC= 2A
DC current gain 3	hFE 3	50	-	-	-	VCE= 1V, IC= 5A
Collector-emitter saturation voltage	VCE(sat)	-	0.1	0.3	V	IC= 2A, IB= 0.2A
Base-emitter saturation voltage	VBE(sat)	-	0.9	1.2	V	IC= 2A, IB= 0.2A
Transition frequency	fT	-	70	-	MHz	VCE= 10V, IE= -50mA
Collector output capacitance	Cob	-	70	-	pF	VCB= 10V, f = 1MHz, IE= 0A
Turn on time	ton	-	0.2	1	us	VCC= 10V, IC= 2A
Storage time	tstg	-	1.1	2.5	us	IB1= -IB2= 0.2A
Fall time	tf	-	0.2	1	us	

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= 1V, Ta= 25C

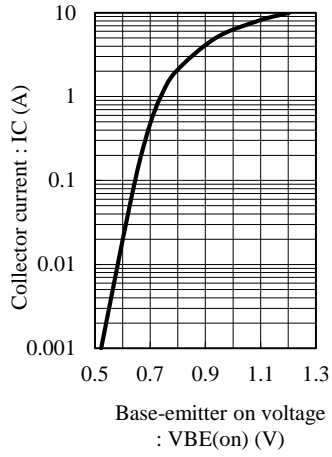


Fig.2 IC - VBE(on)  
at VCE= 2V, Ta= 25C

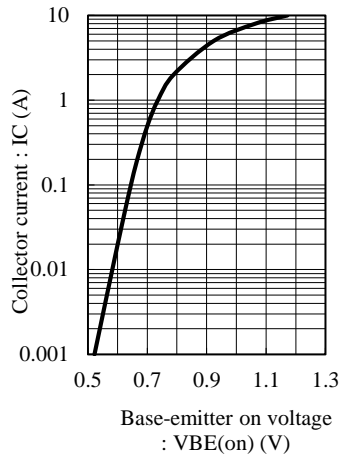


Fig.3 hFE - IC  
at VCE= 1V, Ta= 25C

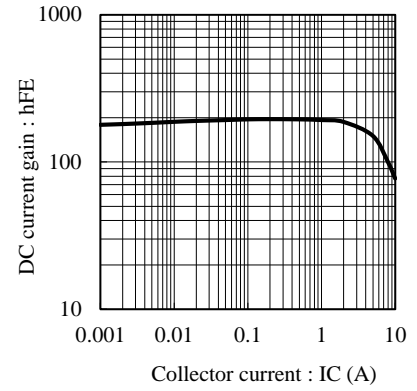


Fig.4 hFE - IC  
at VCE= 2V, Ta= 25C

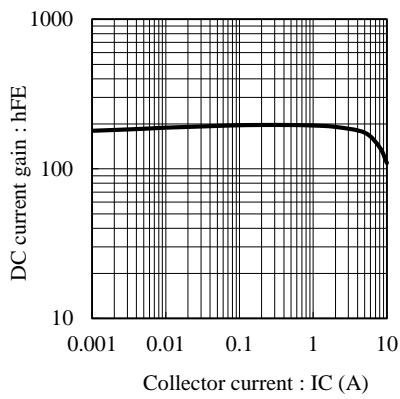


Fig.5 VCE(sat) - IC  
at IC/IB= 10, Ta= 25C

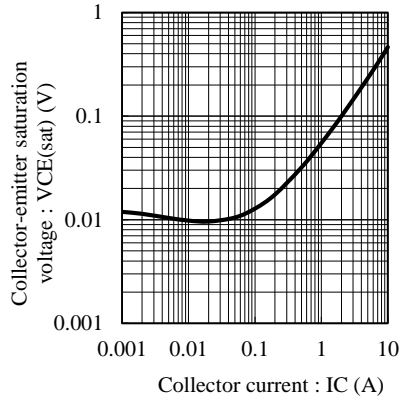


Fig.6 VBE(sat) - IC  
at IC/IB= 10, Ta= 25C

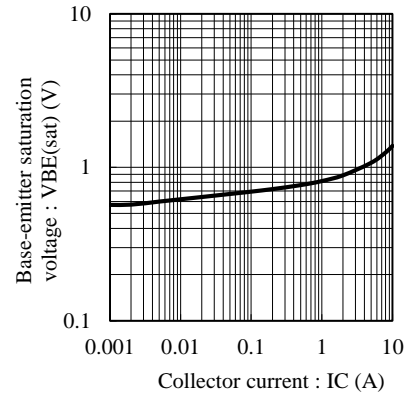


Fig.7 fT - IE  
at VCE= 10V, Ta= 25C

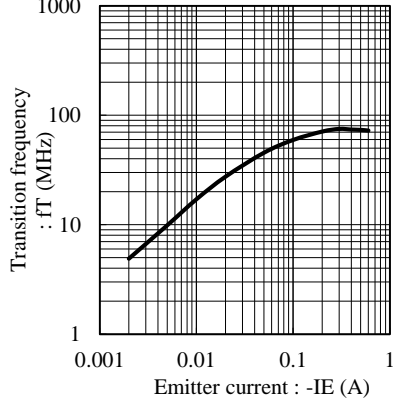


Fig.8 Cob - VCB  
at f= 1MHz, Ta= 25C

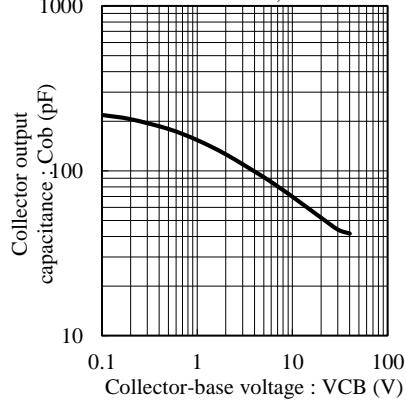


Fig.9 Cib - VEB  
at f= 1MHz, Ta= 25C

