

**Silicon NPN transistor epitaxial type  
C5937**

**[ Applications ]**

High voltage, High current

**[ Feature ]**

High voltage  $V_{CEO} = 200V$

High current gain characteristic

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

Fast-switching speed

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

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	VCBO	250	V
Collector-emitter voltage	VCEO	200	V
Emitter-base voltage	VEBO	6	V
Collector current	IC	3	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	250	-	-	V	IC= 100uA
Collector-emitter breakdown voltage	BVCEO	200	-	-	V	IC= 1mA
Emitter-base breakdown voltage	BVEBO	6	-	-	V	IE= 100uA
Collector cut-off current	ICBO	-	-	100	nA	VCB= 200V
Emitter cut-off current	IEBO	-	-	100	nA	VEB= 6V
DC current gain 1	hFE 1	40	-	-	-	VCE= 5V, IC= 20mA
DC current gain 2	hFE 2	40	80	160	-	VCE= 5V, IC= 500mA
Collector-emitter saturation voltage	VCE(sat)	-	-	0.2	V	IC= 500mA, IB= 50mA
Base-emitter saturation voltage	VBE(sat)	-	-	1.1	V	IC= 500mA, IB= 50mA
Transition frequency	fT	50	-	-	MHz	VCE= 10V, IE= -100mA
Collector output capacitance	Cob	-	-	30	pF	VCB= 10V, f= 1MHz, IE= 0A
Turn on time	ton	-	100	-	ns	VCC= 20V, IC= 500mA
Turn off time	toff	-	1500	-	ns	IB1= -IB2= 50mA

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

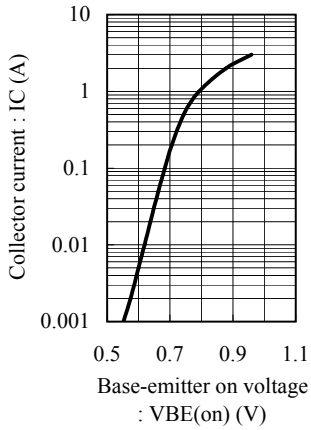


Fig.2 hFE - IC  
at VCE= 5V, Ta= 25C

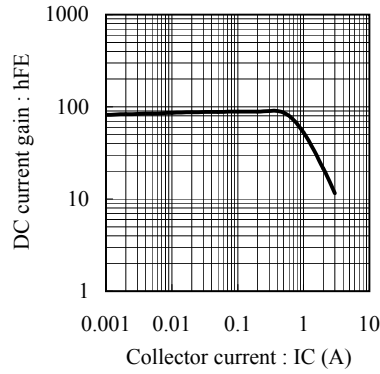


Fig.3 VCE(sat) - IC  
at IC/IB= 10, Ta= 25C

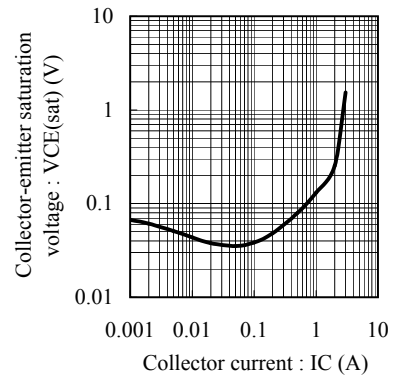


Fig.4 VBE(sat) - IC  
at IC/IB= 10, Ta= 25C

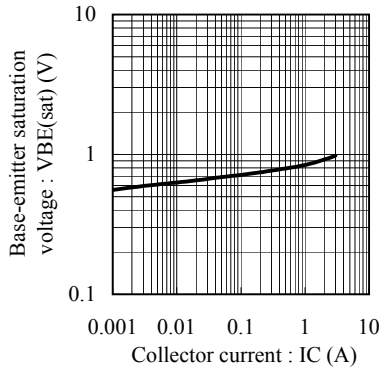


Fig.5 fT - IE  
at VCE= 10V, Ta= 25C

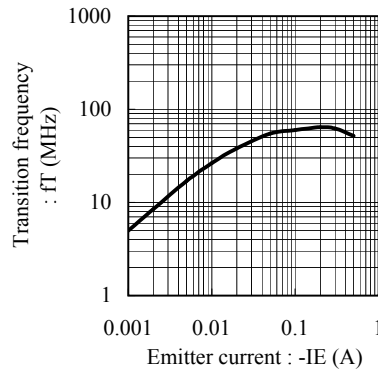


Fig.6 Cob - VCB  
at f= 1MHz, Ta= 25C

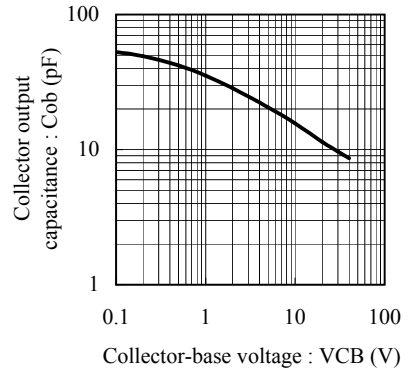


Fig.7 Cib - VEB  
at f= 1MHz, Ta= 25C

