

**Silicon NPN transistor epitaxial type  
D5850**
**[ Applications ]**

General purpose transistors  
Medium power amplifire and switching

**[ Feature ]**

High collector-emitter beak-down voltage  $BV_{CEO}= 80V$   
 High emitter-base break-down voltage  $BV_{EBO}= 8V$   
 Low collector saturation voltage  $V_{CE(sat)}= 0.14V$  (Typ.) at  $I_C= 500mA$ ,  $I_B= 50mA$   
 Complimentary pair with phenitec P/N B5850

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

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	VCBO	80	V
Collector-emitter voltage	VCEO	80	V
Emitter-base voltage	VEBO	8	V
Collector current	IC	700	mA
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	80	-	-	V	$I_C= 50\mu A$ , $I_E= 0A$
Collector-emitter breakdown voltage	BVCEO	80	-	-	V	$I_C= 2mA$ , $I_B= 0A$
Emitter-base breakdown voltage	BVEBO	8	-	-	V	$I_E= 50\mu A$ , $I_C= 0A$
Collector cut-off current	ICBO	-	-	0.5	$\mu A$	$V_{CB}= 50V$ , $I_E= 0A$
Emitter cut-off current	IEBO	-	-	0.5	$\mu A$	$V_{EB}= 8V$ , $I_E= 0A$
DC current gain	hFE	56	-	390	-	$V_{CE}= 10V$ , $I_C= 150mA$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	0.14	0.4	V	$I_C= 500mA$ , $I_B= 50mA$
Transition frequency	fT	-	180	-	MHz	$V_{CE}= 10V$ , $I_E= -50mA$
Collector output capacitance	Cob	-	5	15	pF	$V_{CB}= 10V$ , $f = 1MHz$ , $I_E= 0A$

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= 10V, Ta= 25C

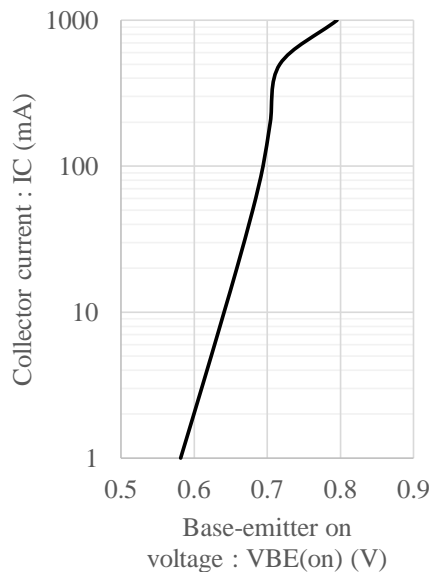


Fig.2 hFE - IC  
at VCE= 10V, Ta= 25C

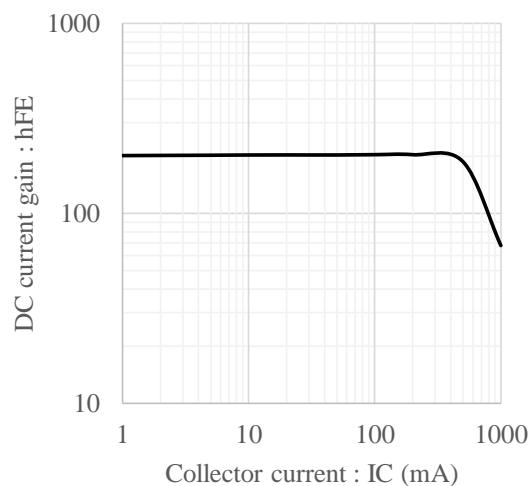


Fig.3 VCE(sat) - IC  
at IC/IB=10, Ta= 25V

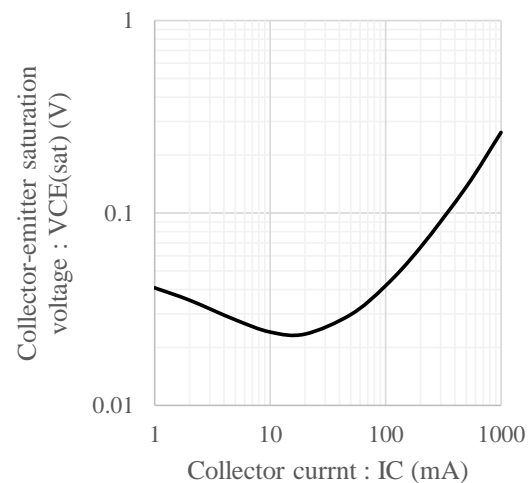


Fig.4 VBE(sat) - IC  
at IC/IB= 10, Ta= 25C

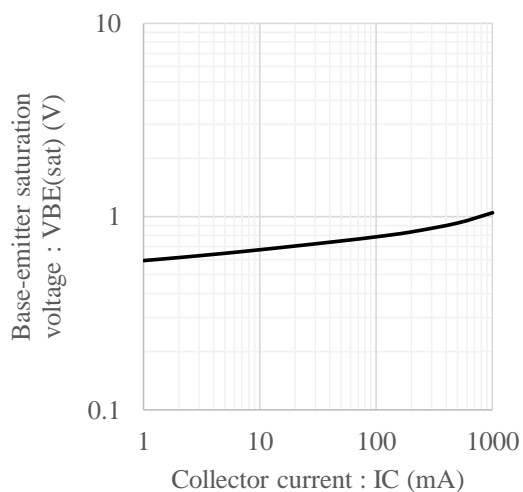


Fig.5 fT - IE  
at VCE= 10V, Ta= 25C

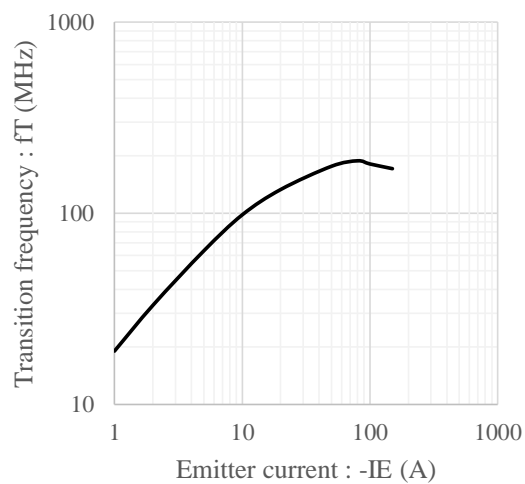


Fig.6 Cob - VCB  
at f= 1MHz, Ta= 25C

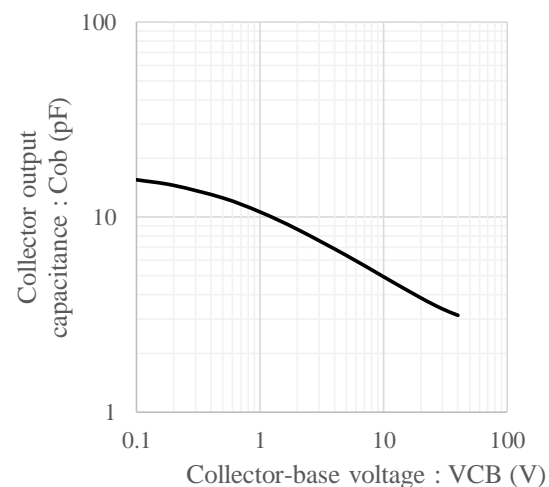


Fig.7 Cob - VEB  
at f= 1MHz, Ta= 25C

