

**Silicon NPN transistor epitaxial type
C5886**
[Applications]

Supply line switching circuits, Battery charger
DC-DC converter, MOSFET driver

[Feature]

Very low collector saturation voltage $V_{CE(sat)} = 355\text{mV}$ (Max.) at $I_C = 5\text{A}$, $I_B = 0.5\text{A}$

[Absolute maximum ratings (Ta=25C)]

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	VCBO	40	V
Collector-emitter voltage	VCEO	40	V
Emitter-base voltage	VEBO	6	V
Collector current (DC)	IC	5	A
Collector current (Pulse)	IC	10	A
Base current (Pulse)	IB	2	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	40	-	-	V	$I_C = 100\mu\text{A}$, $I_E = 0\text{A}$
Collector-emitter breakdown voltage	BVCEO	40	-	-	V	$I_C = 10\text{mA}$, $I_B = 0\text{A}$
Emitter-base breakdown voltage	BVEBO	6	-	-	V	$I_E = 100\mu\text{A}$, $I_C = 0\text{A}$
Collector cut-off current	ICBO	-	-	100	nA	$V_{CB} = 30\text{V}$, $I_E = 0\text{A}$
Emitter cut-off current	IEBO	-	-	100	nA	$V_{EB} = 5\text{V}$, $I_C = 0\text{A}$
DC current gain 1	hFE 1	300	500	-	-	$V_{CE} = 2\text{V}$, $I_C = 0.5\text{A}$
DC current gain 2	hFE 2	300	500	-	-	$V_{CE} = 2\text{V}$, $I_C = 1\text{A}$
DC current gain 3	hFE 3	250	450	-	-	$V_{CE} = 2\text{V}$, $I_C = 2\text{A}$
DC current gain 4	hFE 4	100	300	-	-	$V_{CE} = 2\text{V}$, $I_C = 5\text{A}$
Collector-emitter saturation voltage 1	$V_{CE(sat)1}$	-	50	90	mV	$I_C = 0.5\text{A}$, $I_B = 5\text{mA}$
Collector-emitter saturation voltage 2	$V_{CE(sat)2}$	-	75	120	mV	$I_C = 1\text{A}$, $I_B = 10\text{mA}$
Collector-emitter saturation voltage 3	$V_{CE(sat)3}$	-	90	150	mV	$I_C = 2\text{A}$, $I_B = 0.2\text{A}$
Collector-emitter saturation voltage 4	$V_{CE(sat)4}$	-	210	355	mV	$I_C = 5\text{A}$, $I_B = 0.5\text{A}$
Base-emitter saturation voltage	$V_{BE(sat)}$	-	1.1	1.3	V	$I_C = 5\text{A}$, $I_B = 0.5\text{A}$
Base-emitter on voltage	$V_{BE(on)}$	-	0.8	1.1	V	$V_{CE} = 2\text{V}$, $I_C = 2\text{A}$
Transition frequency	fT	70	130	-	MHz	$V_{CE} = 10\text{V}$, $I_E = -0.1\text{A}$
Collector output capacitance	Cob	-	60	75	pF	$V_{CB} = 10\text{V}$, $f = 1\text{MHz}$, $I_E = 0\text{A}$

Notice 1) These data composed by the transistor assembled by PHENITEC SEMICONDUCTOR Corp. is for reference only.

Notice 2) The contents described herein are subject to change without notice.

No. C5886-01-20081014

Fig.1 I_C - $V_{BE(on)}$
at $V_{CE}=2V$, $T_a=25C$

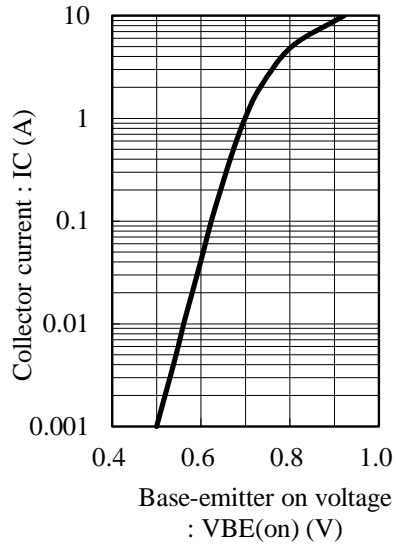


Fig.2 h_{FE} - I_C
at $V_{CE}=2V$, $T_a=25C$

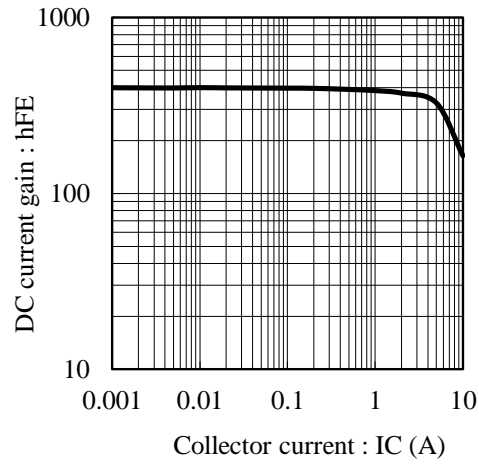


Fig.3 $V_{CE(sat)}$ - I_C
at $I_C/I_B=10$, $T_a=25C$

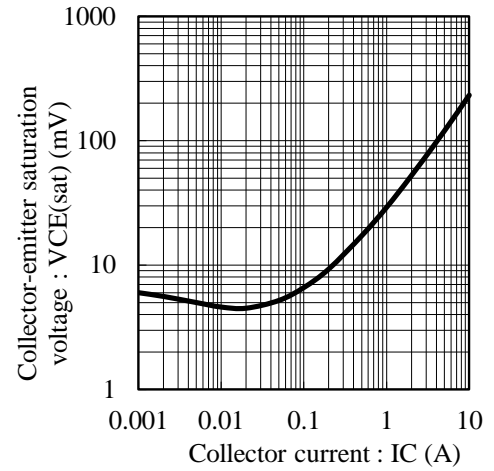


Fig.4 $V_{CE(sat)}$ - I_C
at $I_C/I_B=100$, $T_a=25C$

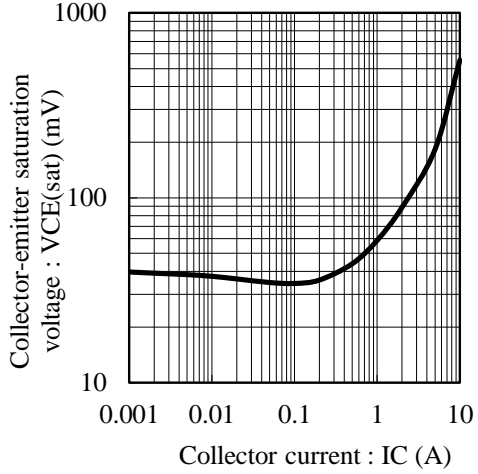


Fig.5 $V_{BE(sat)}$ - I_C
at $I_C/I_B=10$, $T_a=25C$

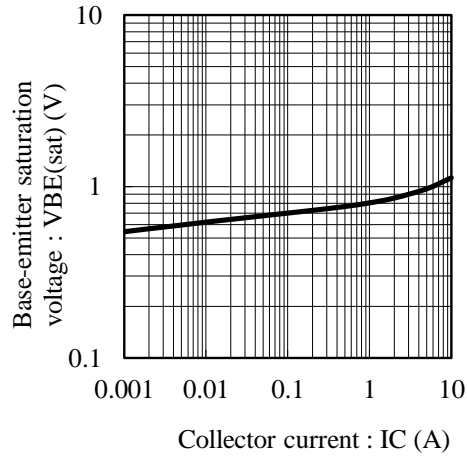


Fig.6 f_T - I_E
at $V_{CE}=10V$, $T_a=25C$

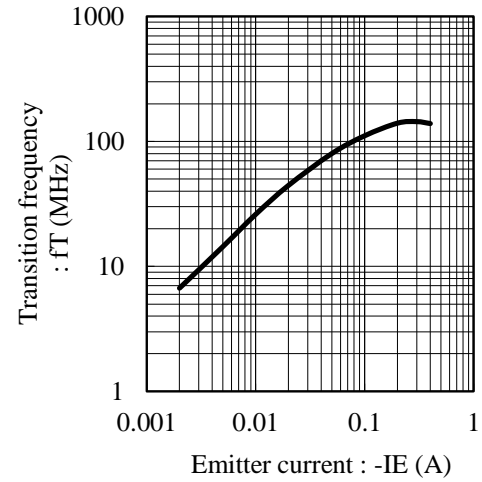


Fig.7 C_{ob} - V_{CB}
at $f=1MHz$, $T_a=25C$

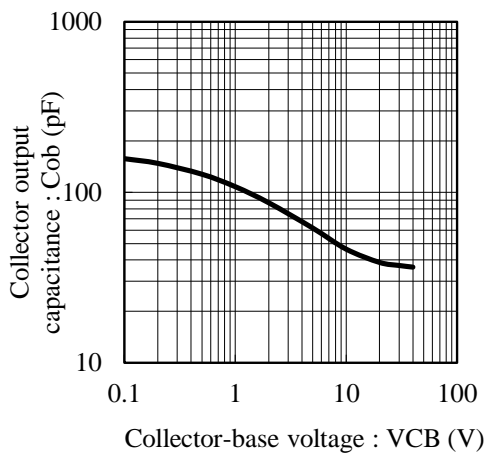


Fig.8 C_{ib} - V_{EB}
at $f=1MHz$, $T_a=25C$

