

Silicon NPN transistor epitaxial type C5895

[Applications]

DC/DC converters, Supply line switching, Battery charger, LCD backlighting

[Feature]

High DC gain $hFE= 300-700$ at $VCE= 2V, IC= 1A$

Low collector saturation voltage $VCE(sat)= 370mV$ (Max.) at $IC= 3A, IB= 0.3A$

[Absolute maximum ratings (Ta=25C)]

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	VCBO	50	V
Collector-emitter voltage	VCEO	50	V
Emitter-base voltage	VEBO	5	V
Collector current (DC)	IC	3	A
Collector current (Pulse)	ICP	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	50	-	-	V	IC= 100uA, IE= 0A
Collector-emitter breakdown voltage	BVCEO	50	-	-	V	IC= 10mA, IB= 0A
Emitter-base breakdown voltage	BVEBO	5	-	-	V	IE= 100uA, IC= 0A
Collector cut-off current	ICBO	-	-	100	nA	VCB= 50V, IE= 0A
Collector cut-off current	ICES	-	-	100	nA	VCE= 50V
Emitter cut-off current	IEBO	-	-	100	nA	VEB= 5V, IC= 0A
DC current gain 1	hFE 1	300	-	-	-	VCE= 2V, IC= 0.1A
DC current gain 2	hFE 2	300	-	-	-	VCE= 2V, IC= 0.5A
DC current gain 3	hFE 3	300	-	700	-	VCE= 2V, IC= 1A
DC current gain 4	hFE 4	200	-	-	-	VCE= 2V, IC= 2A
DC current gain 4	hFE 5	100	-	-	-	VCE= 2V, IC= 3A
Collector-emitter saturation voltage 1	VCE(sat) 1	-	-	80	mV	IC= 0.5A, IB= 50mA
Collector-emitter saturation voltage 2	VCE(sat) 2	-	-	160	mV	IC= 1A, IB= 50mA
Collector-emitter saturation voltage 3	VCE(sat) 3	-	-	280	mV	IC= 2A, IB= 0.1A
Collector-emitter saturation voltage 4	VCE(sat) 4	-	-	260	mV	IC= 2A, IB= 0.2A
Collector-emitter saturation voltage 5	VCE(sat) 5	-	-	370	mV	IC= 3A, IB= 0.3A
Base-emitter saturation voltage 1	VBE(sat) 1	-	-	1.1	V	IC= 2A, IB= 0.1A
Base-emitter saturation voltage 2	VBE(sat) 2	-	-	1.2	V	IC= 3A, IB= 0.3A
Base-emitter on voltage	VBE(on)	-	-	1.1	V	VCE= 2V, IC= 1A
Transition frequency	fT	100	-	-	MHz	VCE= 5V, IE= -0.1A
Collector output capacitance	Cob	-	-	25	pF	VCB= 10V, f= 1MHz, IE= 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.

No. C5895-20071220

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

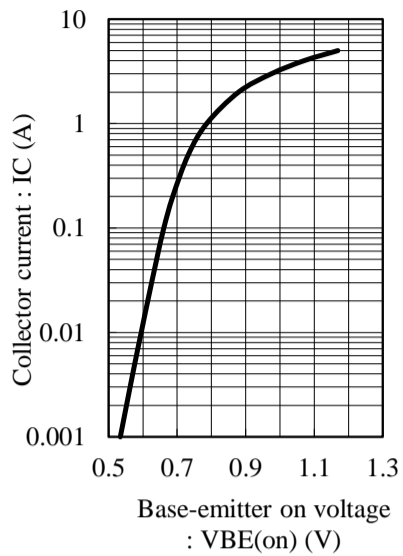


Fig.2 h_{FE} - I_C
at $V_{CE} = 2V, T_a = 25C$

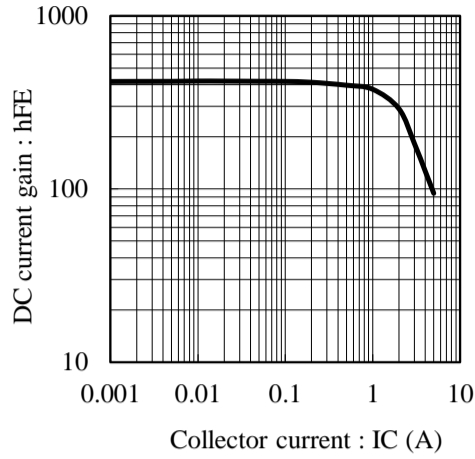


Fig.3 $V_{CE(sat)}$ - I_C
at $I_C/I_B = 10, T_a = 25C$

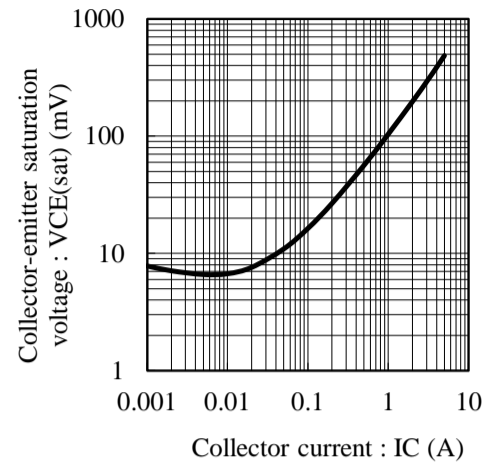


Fig.4 $V_{CE(sat)}$ - I_C
at $I_C/I_B = 20, T_a = 25C$

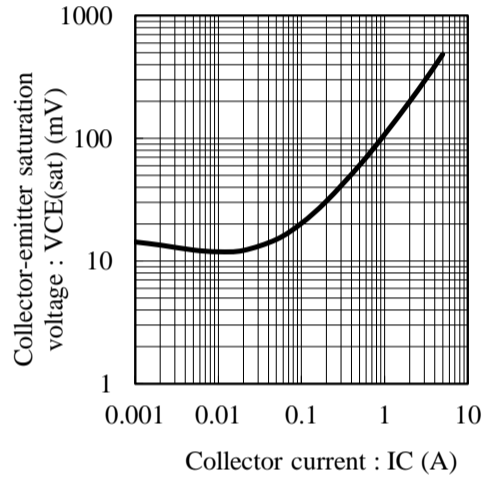


Fig.5 $V_{BE(sat)}$ - I_C
at $I_C/I_B = 10, T_a = 25C$

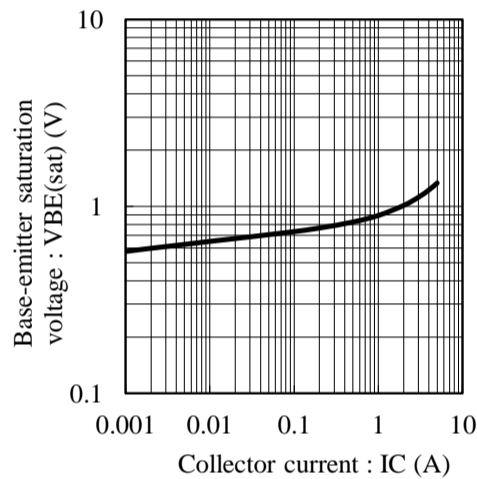


Fig.6 $V_{BE(sat)}$ - I_C
at $I_C/I_B = 20, T_a = 25C$

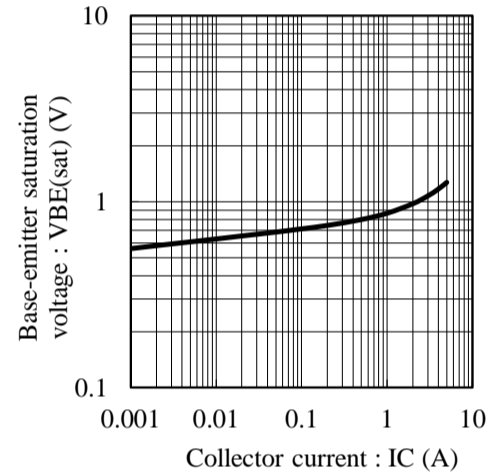


Fig.7 f_T - I_E
at $V_{CE} = 5V, T_a = 25C$

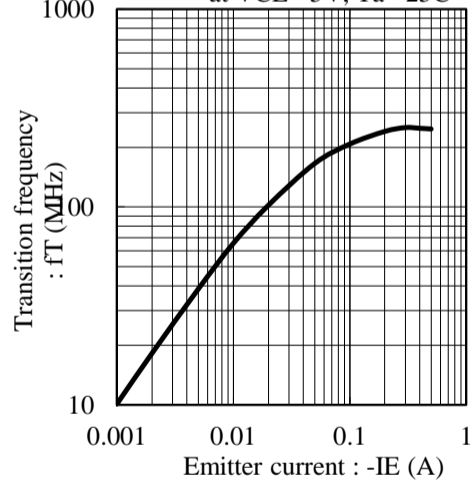


Fig.8 C_{ob} - V_{CB}
at $f = 1MHz, T_a = 25C$

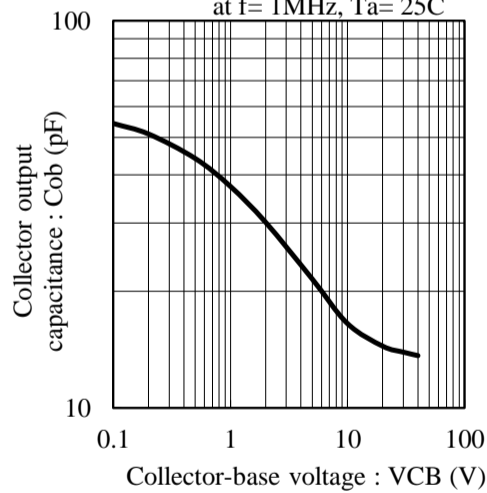


Fig.9 C_{ib} - V_{EB}
at $f = 1MHz, T_a = 25C$

