

Silicon PNP transistor epitaxial type A5909

[Applications]

Battery powered circuit

[Feature]

High DC gain $hFE= 500-1500$ at $VCE= -2V, IC= -10mA$

Low collector saturation voltage $VCE(sat)= -0.5V$ (Max.) at $IC= -3A, IB= -50mA$

[Absolute maximum ratings (Ta=25C)]

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	VCBO	-15	V
Collector-emitter voltage	VCEO	-15	V
Emitter-base voltage	VEBO	-5	V
Collector current (DC)	IC	-3	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	-15	-	-	V	IC= -100uA, IE= 0A
Collector-emitter breakdown voltage	BVCEO	-15	-	-	V	IC= -10mA, IB= 0A
Emitter-base breakdown voltage	BVEBO	-5	-	-	V	IE= -100uA, IC= 0A
Collector cut-off current	ICBO	-	-	-100	nA	VCB= -10V, IE= 0A
Emitter cut-off current	IEBO	-	-	-100	nA	VEB= -4V, IC= 0A
DC current gain 1	hFE 1	500	-	1500	-	VCE= -2V, IC= -10mA
DC current gain 2	hFE 2	400	-	-	-	VCE= -2V, IC= -1A
DC current gain 3	hFE 3	300	-	-	-	VCE= -2V, IC= -2A
DC current gain 4	hFE 4	150	-	-	-	VCE= -2V, IC= -6A
Collector-emitter saturation voltage 1	VCE(sat) 1	-	-	-0.15	V	IC= -0.5A, IB= -2.5mA
Collector-emitter saturation voltage 2	VCE(sat) 2	-	-	-0.25	V	IC= -1A, IB= -5mA
Collector-emitter saturation voltage 3	VCE(sat) 3	-	-	-0.45	V	IC= -2A, IB= -10mA
Collector-emitter saturation voltage 4	VCE(sat) 4	-	-	-0.5	V	IC= -3A, IB= -50mA
Base-emitter saturation voltage	VBE(sat)	-	-	-0.9	V	IC= -1A, IB= -5mA
Base-emitter on voltage	VBE(on)	-	-0.78	-	V	VCE= -2V, IC= -1A
Transition frequency	fT	100	-	-	MHz	VCE= -5V, IE= 50mA
Collector output capacitance	Cob	-	50	-	pF	VCB= -10V, f= 1MHz, IE= 0A
Collector input capacitance	Cib	-	260	-	pF	VEB= -0.5V, f= 1MHz, IC= 0A
Turn on time	ton	-	35	-	ns	VCC= -10V, IC= -500mA
Turn off time	toff	-	400	-	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 $I_C - V_{BE(on)}$
at $V_{CE} = -2V, T_a = 25C$

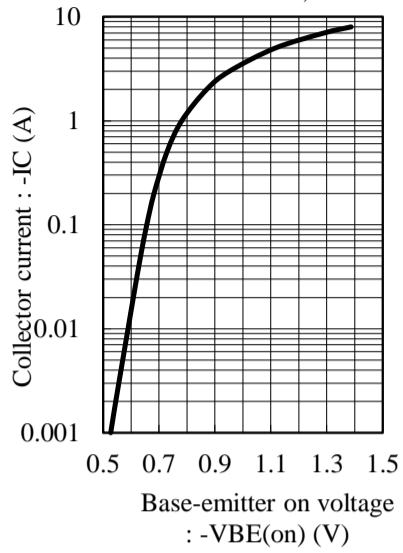


Fig.2 $h_{FE} - I_C$
at $V_{CE} = -2V, T_a = 25C$

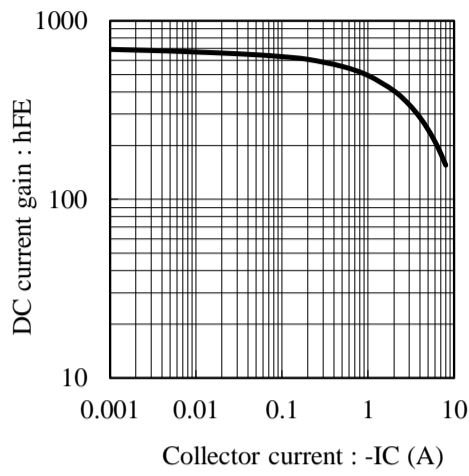


Fig.3 $V_{CE(sat)} - I_C$
at $I_C/I_B = 60, T_a = 25C$

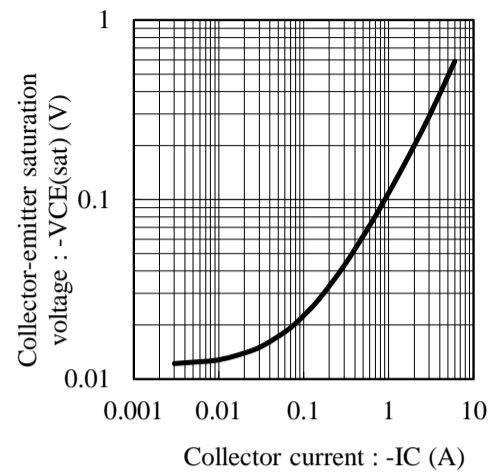


Fig.4 $V_{CE(sat)} - I_C$
at $I_C/I_B = 200, T_a = 25C$

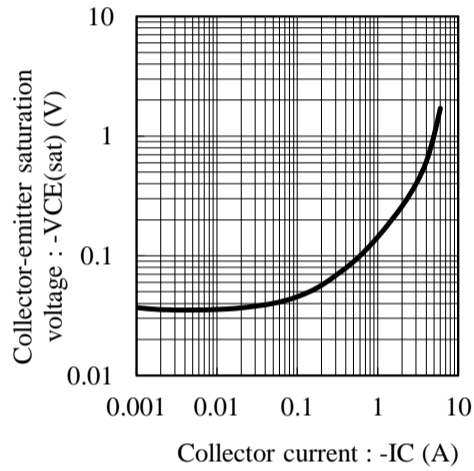


Fig.5 $V_{BE(sat)} - I_C$
at $I_C/I_B = 200, T_a = 25C$

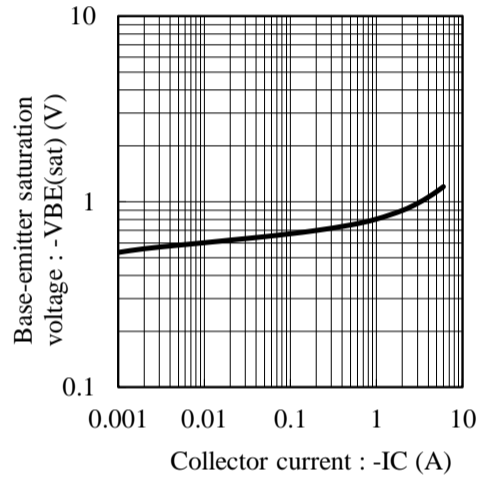


Fig.6 $f_T - I_E$
at $V_{CE} = -5V, T_a = 25C$

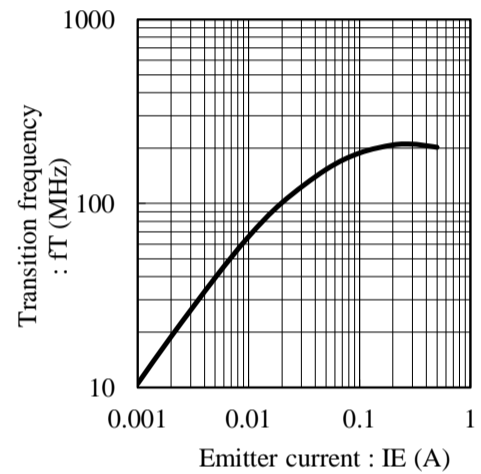


Fig.7 $C_{ob} - V_{CB}$
at $f = 1MHz, T_a = 25C$

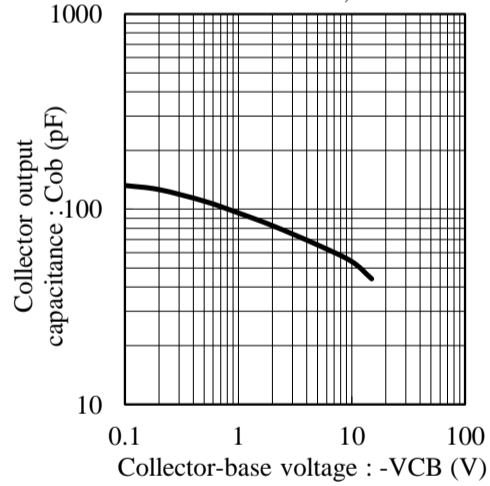


Fig.8 $C_{ib} - V_{EB}$
at $f = 1MHz, T_a = 25C$

