

Silicon NPN transistor epitaxial type D5930

[Applications]

Inverter, Strobo flash, DC-DC convertor
with high current, high DC current gain and small collector-emitter saturation voltage.
High power switching with high collector current.

[Feature]

Small collector-emitter saturation voltage $V_{CE(sat)} = 0.28V(\text{Typ.})$ at $I_C = 3A, I_B = 0.1A$
High collector current $I_C = 5A$
High emitter-base breakdown voltage $BVEBO = 9V$
High DC current gain $hFE = 355-800$

[Absolute maximum ratings (Ta=25C)]

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	VCBO	20	V
Collector-emitter voltage	VCEO	12	V
Emitter-base voltage	VEBO	9	V
Collector current	IC	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	20	-	-	V	$I_C = 10\mu A, I_E = 0A$
Collector-emitter breakdown voltage	BVCEO	12	-	-	V	$I_C = 1mA, I_B = 0A$
Emitter-base breakdown voltage	BVEBO	9	-	-	V	$I_E = 10\mu A, I_C = 0A$
Collector cut-off current	ICBO	-	-	100	nA	$V_{CB} = 10V, I_E = 0A$
Collector cut-off current	ICEO	-	-	1	uA	$V_{CE} = 10V, I_E = 0A$
Emitter cut-off current	IEBO	-	-	100	nA	$V_{EB} = 7V, I_E = 0A$
DC current gain 1	hFE 1	355	-	800	-	$V_{CE} = 2V, I_C = 0.5A$
DC current gain 2	hFE 2	150	-	-	-	$V_{CE} = 2V, I_C = 2A$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	0.28	0.8	V	$I_C = 3A, I_B = 0.1A$
Transition frequency	f T	-	150	-	MHz	$V_{CE} = 6V, I_E = -50mA$
Collector output capacitance	Cob	-	-	50	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.

No. D5930-20050224

Fig.1 hFE - IC
at VCE= 10V, Ta= 25C

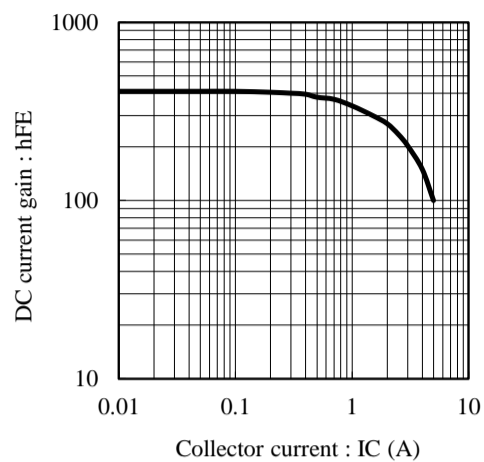


Fig.2 VCE(sat) - IC
at IC/IB= 30, Ta= 25C

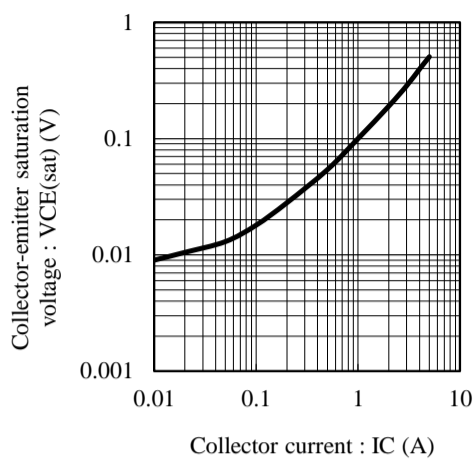


Fig3. VBE(sat) - IC
at IC/IB= 30, Ta= 25C

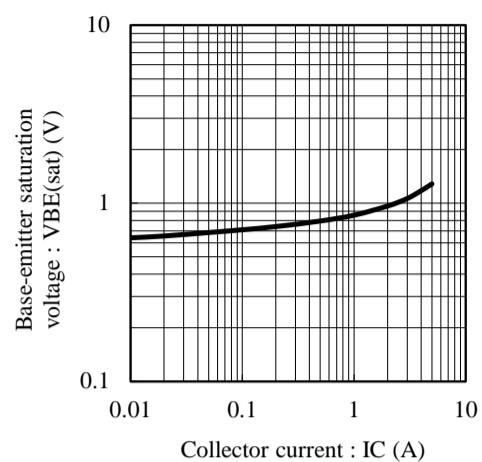


Fig.4 fT - IE
at VCE= 6V, Ta= 25C

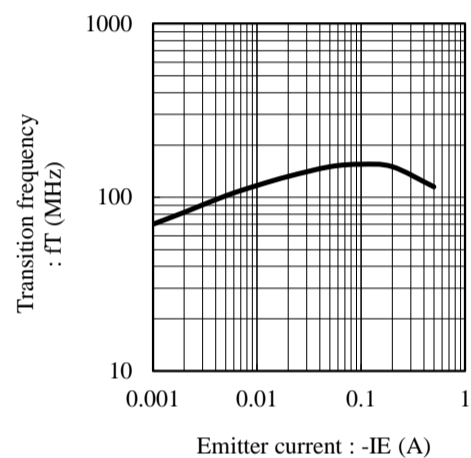


Fig.5 Cob - VCB
at f= 1MHz, Ta= 25C

