

Silicon PNP transistor epitaxial type A5987

[Applications]

High current amplifier

[Feature]

Collector current $I_C = -5A$

Very low collector saturation voltage $V_{CE(sat)} = -420mV$ (Max.) at $I_C = -4A$, $I_B = -400mA$

Excellent gain characteristics specified up to -10 amperes

NPN complementary pair with C5987

[Absolute maximum ratings (Ta=25°C)]

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	VCBO	-140	V
Collector-emitter voltage	VCEO	-100	V
Emitter-base voltage	VEBO	-6	V
Collector current (DC)	I_C	-5	A
Collector current (Pulse)	I_C	-10	A
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to 150	°C

[Electrical characteristics (Ta=25°C)]

Characteristic	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BVCBO	-140	-170	-	V	$I_C = -100\mu A$
Collector-emitter breakdown voltage	BVCEO	-100	-120	-	V	$I_C = -10mA$
Emitter-base breakdown voltage	BVEBO	-6	-9	-	V	$I_E = -100\mu A$
Collector cut-off current	I_{CBO}	-	-	-50	nA	$V_{CB} = -100V$
Emitter cut-off current	I_{EBO}	-	-	-10	nA	$V_{EB} = -6V$
DC current gain 1	h_{FE1}	100	-	-	-	$V_{CE} = -1V$, $I_C = -10mA$
DC current gain 2	h_{FE2}	120	200	300	-	$V_{CE} = -1V$, $I_C = -1A$
DC current gain 3	h_{FE3}	50	70	-	-	$V_{CE} = -1V$, $I_C = -3A$
DC current gain 4	h_{FE4}	30	45	-	-	$V_{CE} = -1V$, $I_C = -4A$
DC current gain 5	h_{FE5}	-	15	-	-	$V_{CE} = -1V$, $I_C = -10A$
Collector-emitter saturation voltage 1	$V_{CE(sat)1}$	-	-20	-50	mV	$I_C = -100mA$, $I_B = -10mA$
Collector-emitter saturation voltage 2	$V_{CE(sat)2}$	-	-90	-120	mV	$I_C = -1A$, $I_B = -100mA$
Collector-emitter saturation voltage 3	$V_{CE(sat)3}$	-	-170	-220	mV	$I_C = -2A$, $I_B = -200mA$
Collector-emitter saturation voltage 4	$V_{CE(sat)4}$	-	-320	-420	mV	$I_C = -4A$, $I_B = -400mA$
Base-emitter saturation voltage	$V_{BE(sat)}$	-	-1.06	-1.2	V	$I_C = -4A$, $I_B = -400mA$
Base-emitter on voltage	$V_{BE(on)}$	-	-0.97	-1.16	V	$V_{CE} = -1V$, $I_C = -4A$
Transition frequency	f_T	-	150	-	MHz	$V_{CE} = -10V$, $I_E = 100mA$
Collector output capacitance	C_{ob}	-	45	-	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. A5987-20090224

Fig.1 IC - VBE(on)
at VCE= -1V, Ta= 25C

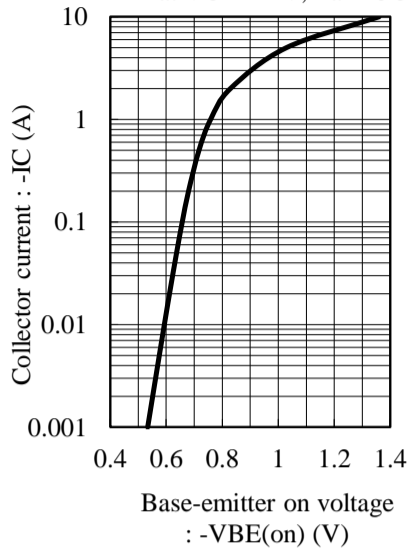


Fig.2 hFE - IC
at VCE= -1V, Ta= 25C

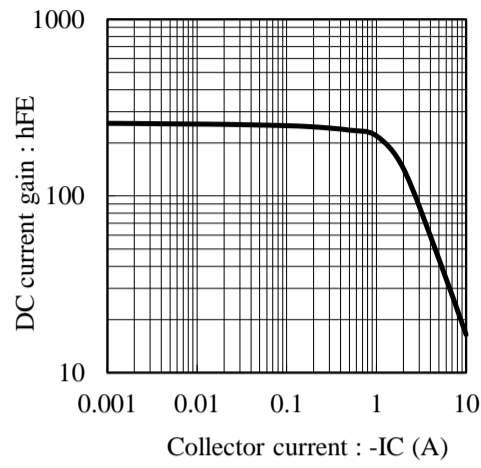


Fig.3 VCE(sat) - IC
at IC/IB= 10, Ta= 25C

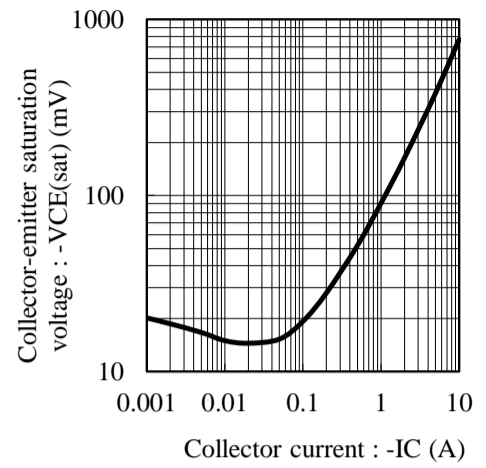


Fig.4 VBE(sat) - IC
at IC/IB= 10, Ta= 25C

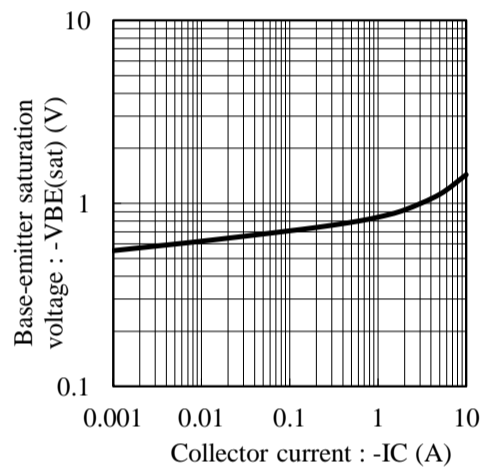


Fig.5 fT - IE
at VCE= -10V, Ta= 25C

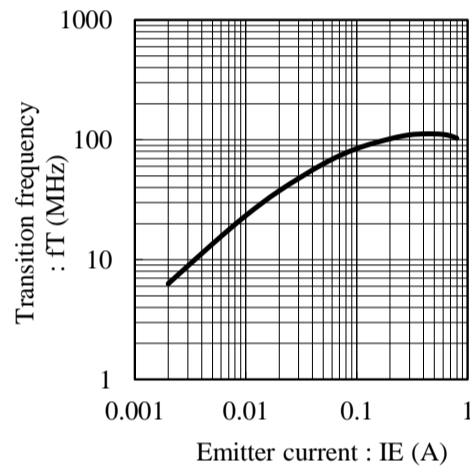


Fig.6 Cob - VCB
at f= 1MHz, Ta= 25C

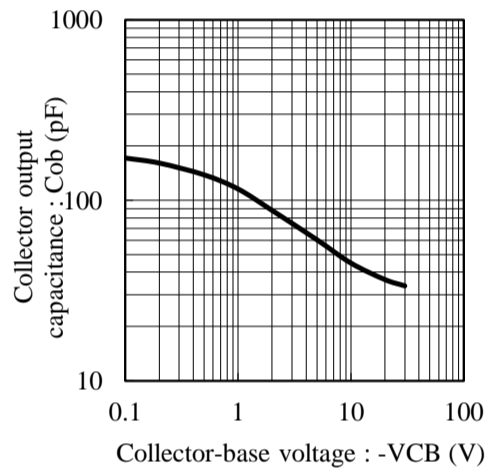


Fig.7 Cib - VEB
at f= 1MHz, Ta= 25C

