

**Silicon NPN transistor epitaxial type
C5953**
[Applications]

General purpose amplifier
High voltage switching (such as telephone)

[Feature]

High voltage $V_{CEO} = 160V$
Collector current $I_C = 0.6A$
Low collector saturation voltage $V_{CE(sat)} = 0.2V$ (Max.) at $I_C = 50mA$, $I_B = 5mA$

[Absolute maximum ratings ($T_a = 25C$)]

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	VCBO	180	V
Collector-emitter voltage	VCEO	160	V
Emitter-base voltage	VEBO	6	V
Collector current	I_C	600	mA
Junction temperature	T_j	150	C
Storage temperature	T_{stg}	-55 to 150	C

[Electrical characteristics ($T_a = 25C$)]

Characteristic	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BVCBO	180	-	-	V	$I_C = 100\mu A$, $I_E = 0A$
Collector-emitter breakdown voltage	BVCEO	160	-	-	V	$I_C = 1mA$, $I_B = 0A$
Emitter-base breakdown voltage	BVEBO	6	-	-	V	$I_E = 10\mu A$, $I_C = 0A$
Collector cut-off current	I_{CBO}	-	-	50	nA	$V_{CB} = 120V$, $I_E = 0A$
Emitter cut-off current	I_{EBO}	-	-	50	nA	$V_{EB} = 4V$, $I_C = 0A$
DC current gain 1	h_{FE1}	72	-	-	-	$V_{CE} = 5V$, $I_C = 1mA$
DC current gain 2	h_{FE2}	72	-	330	-	$V_{CE} = 5V$, $I_C = 10mA$
DC current gain 3	h_{FE3}	27	-	-	-	$V_{CE} = 5V$, $I_C = 50mA$
Collector-emitter saturation voltage 1	$V_{CE(sat)1}$	-	-	0.15	V	$I_C = 10mA$, $I_B = 1mA$
Collector-emitter saturation voltage 2	$V_{CE(sat)2}$	-	-	0.2	V	$I_C = 50mA$, $I_B = 5mA$
Base-emitter saturation voltage 1	$V_{BE(sat)1}$	-	-	1.0	V	$I_C = 10mA$, $I_B = 1mA$
Base-emitter saturation voltage 2	$V_{BE(sat)2}$	-	-	1.0	V	$I_C = 50mA$, $I_B = 5mA$
Transition frequency	f_T	100	-	300	MHz	$V_{CE} = 10V$, $I_E = -10mA$
Collector output capacitance	C_{ob}	-	-	6	pF	$V_{CB} = 10V$, $f = 1MHz$, $I_E = 0A$
Collector input capacitance	C_{ib}	-	-	20	pF	$V_{EB} = 0.5V$, $f = 1MHz$, $I_C = 0A$

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. C5953-20070213

Fig.1 IC - VBE(on)
at VCE= 5V, Ta= 25C

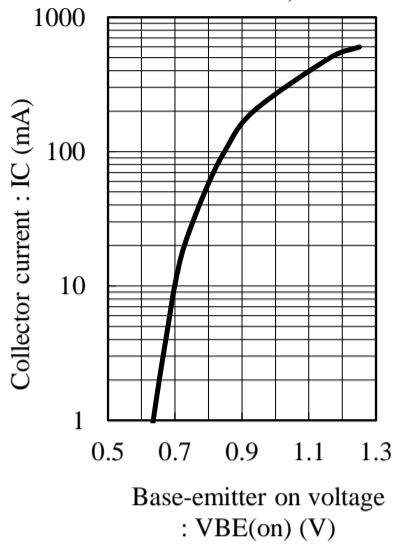


Fig.2 hFE - IC
at VCE= 5V, Ta= 25C

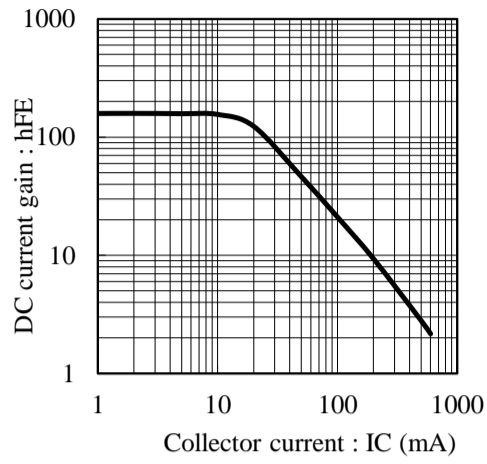


Fig.3 VCE(sat) - IC
at IC/IB= 10, Ta= 25C

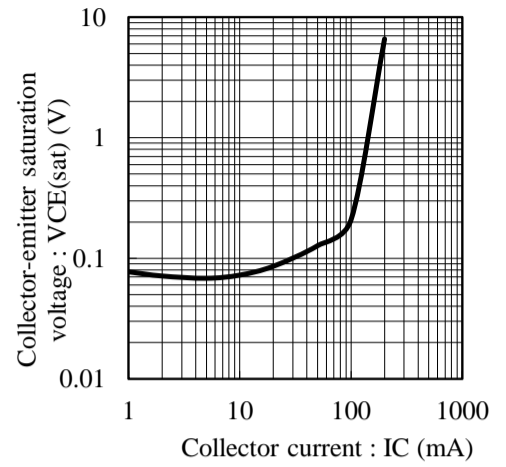


Fig.4 VBE(sat) - IC
at IC/IB= 10, Ta= 25C

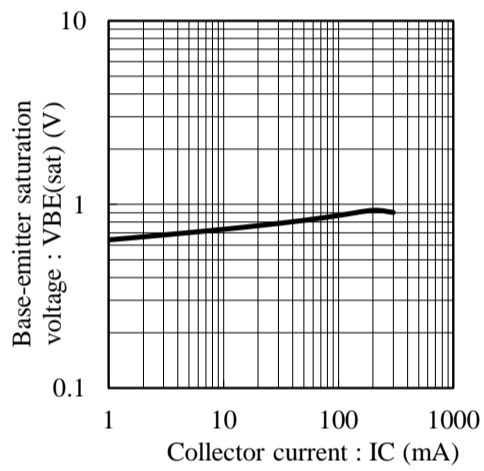


Fig.5 fT - IE
at VCE= 10V, Ta= 25C

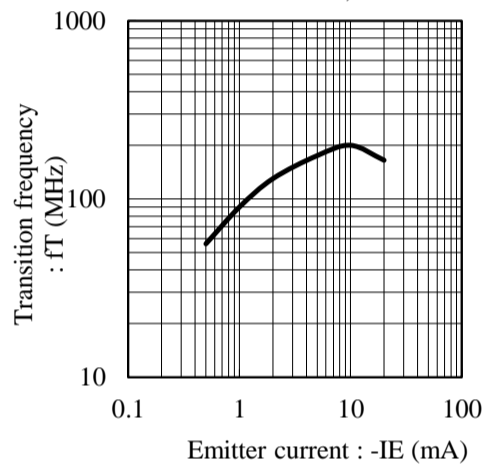


Fig.6 Cob - VCB
at f= 1MHz, Ta= 25C

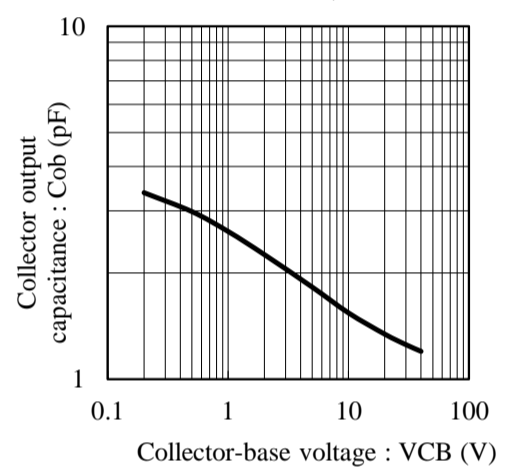


Fig.7 Cib - VEB
at f= 1MHz, Ta= 25C

