

**Silicon PNP transistor epitaxial type  
A5983**
**[ Applications ]**

General purpose amplifier  
High voltage switching (such as telephone)

**[ Feature ]**

High voltage  $V_{CEO} = -150V$   
 Collector current  $I_C = -0.6A$   
 Low collector saturation voltage  $V_{CE(sat)} = -0.5V$  (Max.) at  $I_C = -50mA$ ,  $I_B = -5mA$   
 NPN complementary pair with C5983

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

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	VCBO	-160	V
Collector-emitter voltage	VCEO	-150	V
Emitter-base voltage	VEBO	-5	V
Collector current	IC	-600	mA
Junction temperature	Tj	150	C
Storage temperature	Tstg	-55 to 150	C

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

Characteristic	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BVCBO	-160	-	-	V	$I_C = -100\mu A$ , $I_E = 0A$
Collector-emitter breakdown voltage	BVCEO	-150	-	-	V	$I_C = -1mA$ , $I_B = 0A$
Emitter-base breakdown voltage	BVEBO	-5	-	-	V	$I_E = -10\mu A$ , $I_C = 0A$
Collector cut-off current	ICBO	-	-	-50	nA	$V_{CB} = -120V$ , $I_E = 0A$
Emitter cut-off current	IEBO	-	-	-50	nA	$V_{EB} = -3V$ , $I_C = 0A$
DC current gain 1	hFE 1	45	-	-	-	$V_{CE} = -5V$ , $I_C = -1mA$
DC current gain 2	hFE 2	90	-	270	-	$V_{CE} = -5V$ , $I_C = -10mA$
DC current gain 3	hFE 3	45	-	-	-	$V_{CE} = -5V$ , $I_C = -50mA$
Collector-emitter saturation voltage 1	$V_{CE(sat)} 1$	-	-	-0.2	V	$I_C = -10mA$ , $I_B = -1mA$
Collector-emitter saturation voltage 2	$V_{CE(sat)} 2$	-	-	-0.5	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	$I_C = -50mA$ , $I_B = -5mA$
Base-emitter on voltage (only A5983)	$V_{BE(on)}$	-	-	-0.77	V	$V_{CE} = -5V$ , $I_C = -10mA$
Transition frequency	fT	100	-	300	MHz	$V_{CE} = -10V$ , $I_E = 10mA$
Collector output capacitance	Cob	-	-	6	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. A5983-20070213

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

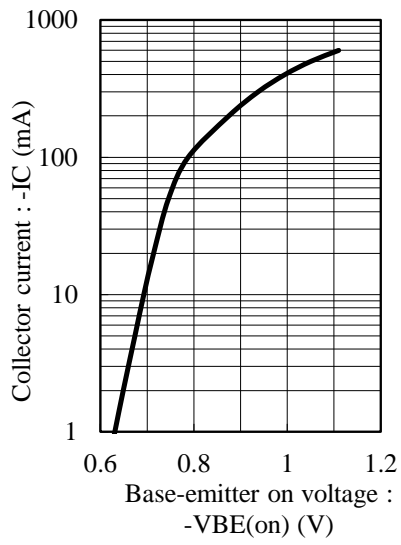


Fig.2 hFE - IC  
at VCE= -5V, Ta= 25C

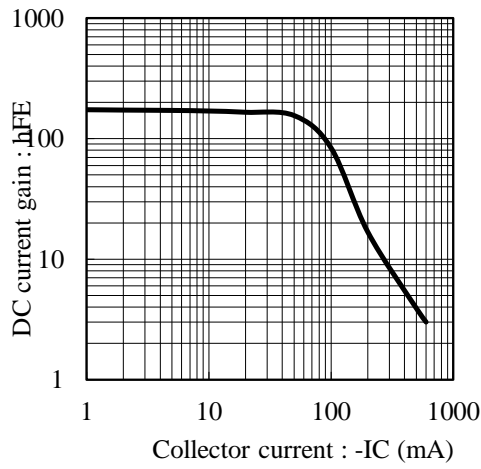


Fig.3 VCE(sat) - IC  
at IC/IB= 10, Ta= 25C

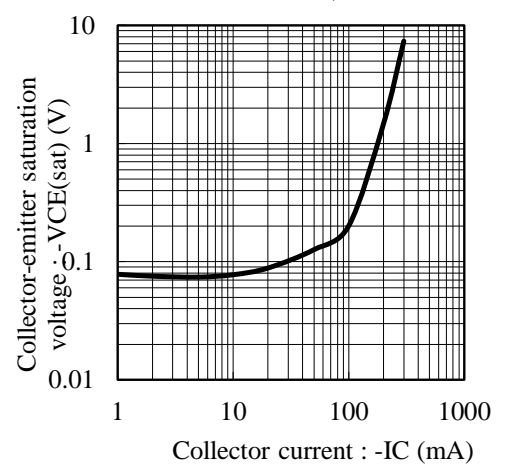


Fig.4 VBE(sat) - IC  
at IC/IB= 10, Ta= 25C

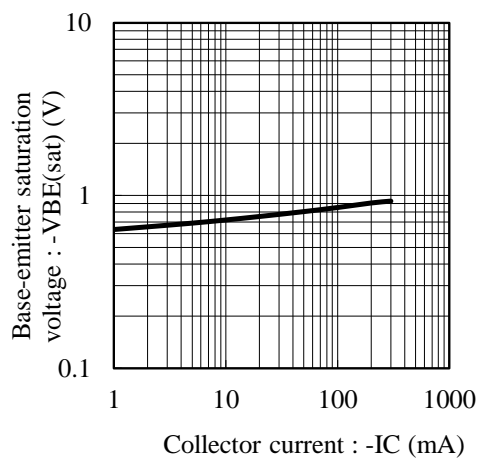


Fig.5 fT - IE  
at VCE= -10V, Ta= 25C

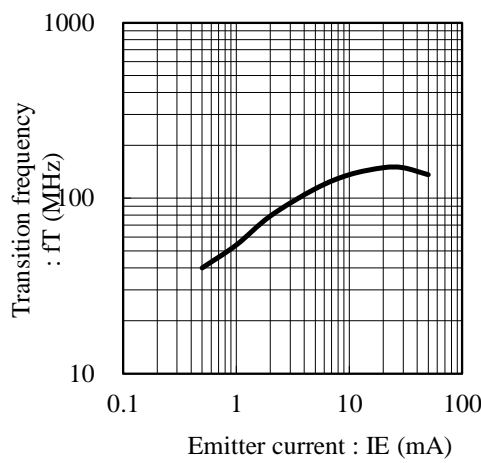


Fig.6 Cob - VCB  
at f= 1MHz, Ta= 25C

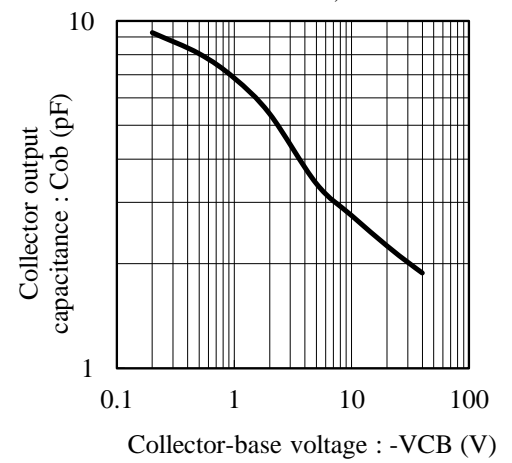


Fig.7 Cib - VEB  
at f= 1MHz, Ta= 25C

