

**Silicon NPN transistor epitaxial type
D5978**

[Applications]

Audio muting circuit
DC-DC converter
Low voltage output amplifier

[Feature]

High DC current gain $h_{FE}= 400\sim 2700$
High emitter-base breakdown voltage $B_{VEBO}= 12V$
Low collector saturation voltage $V_{CE(sat)}= 0.15V(Typ.)$ at $I_C/I_B= 500mA/ 20mA$

[Absolute maximum ratings (Ta=25C)]

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	VCBO	25	V
Collector-emitter voltage	VCEO	20	V
Emitter-base voltage	VEBO	12	V
Collector current	IC	500	mA
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	25	-	-	V	$I_C= 10\mu A, I_E= 0A$
Collector-emitter breakdown voltage	BVCEO	20	-	-	V	$I_C= 1mA, I_B= 0A$
Emitter-base breakdown voltage	BVEBO	12	-	-	V	$I_E= 10\mu A, I_C= 0A$
Collector cut-off current	ICBO	-	-	0.5	μA	$V_{CB}= 25V, I_E= 0A$
Emitter cut-off current	IEBO	-	-	0.5	μA	$V_{EB}= 10V, I_E= 0A$
DC current gain	h_{FE}	400	-	2700	-	$V_{CE}= 3V, I_C= 100mA$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	0.15	0.4	V	$I_C= 500mA, I_B= 20mA$
Transition frequency	fT	-	250	-	MHz	$V_{CE}= 10V, I_E= -50mA$
Collector output capacitance	Cob	-	7.5	-	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.

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

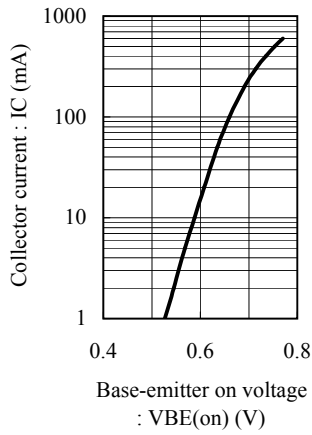


Fig.2 hFE - IC
at VCE= 3V, Ta= 25C

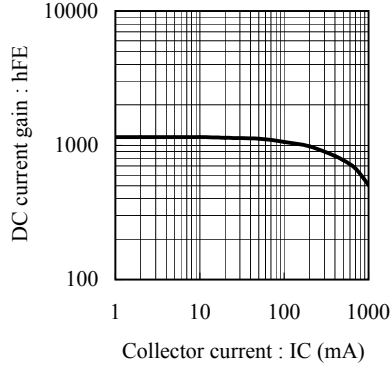


Fig.3 VCE(sat) - IC
at IC/IB= 25, Ta= 25C

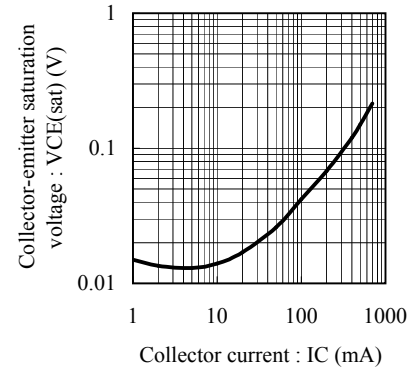


Fig.4 VBE(sat) - IC
at IC/IB=10, Ta= 25C

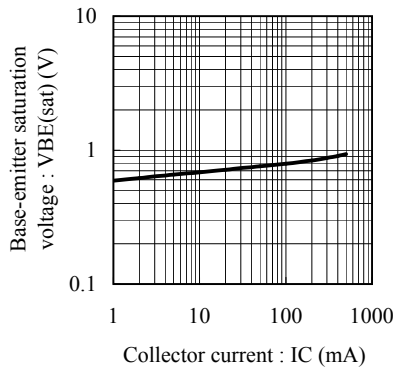


Fig.5 fT - IE
at VCE= 10V, Ta= 25C

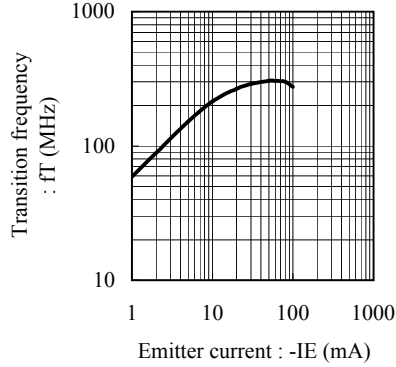


Fig.6 Cob - VCB
at f= 1MHz, Ta= 25C

