

**Silicon NPN transistor epitaxial type  
DP005**

**[ Applications ]**

General purpose

**[ Feature ]**

Low collector saturation voltage  $V_{CE(sat)} = 0.33V(\text{Max.})$  at  $I_C = 100\text{mA}$ ,  $I_B = 10\text{mA}$

**[ Absolute maximum ratings (Ta=25C) ]**

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	VCBO	80	V
Collector-emitter voltage	VCEO	80	V
Emitter-base voltage	VEBO	4	V
Collector current	IC	500	mA
Junction temperature	Tj	125	C
Storage temperature	Tstg	-55 to 125	C

**[ Electrical characteristics (Ta=25C) ]**

Characteristic	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BVCBO	80	-	-	V	$I_C = 100\mu\text{A}$ , $I_E = 0\text{A}$
Collector-emitter breakdown voltage	BVCEO	80	-	-	V	$I_C = 1\text{mA}$ , $I_B = 0\text{A}$
Emitter-base breakdown voltage	BVEBO	4	-	-	V	$I_E = 100\mu\text{A}$ , $I_C = 0\text{A}$
Collector cutoff current	ICBO	-	-	100	nA	$V_{CB} = 80\text{V}$
Collector cutoff current	ICEO	-	-	100	nA	$V_{CE} = 60\text{V}$
Emitter cutoff current	IEBO	-	-	100	nA	$V_{EB} = 5\text{V}$
DC current gain 1	hFE 1	90	-	-	-	$V_{CE} = 1\text{V}$ , $I_C = 10\text{mA}$
DC current gain 2	hFE 2	90	-	-	-	$V_{CE} = 1\text{V}$ , $I_C = 100\text{mA}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-	0.33	V	$I_C = 100\text{mA}$ , $I_B = 10\text{mA}$
Transition frequency	fT	-	115	-	MHz	$V_{CE} = 2\text{V}$ , $I_E = -10\text{mA}$
Collector output capacitance	Cob	-	4.5	-	pF	$V_{CB} = 10\text{V}$ , $f = 1\text{MHz}$ , $I_E = 0\text{A}$

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

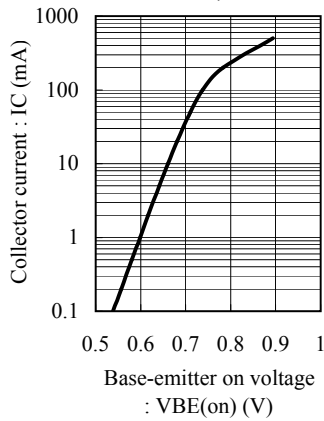


Fig.2 hFE - IC  
at VCE= 1V, Ta= 25C

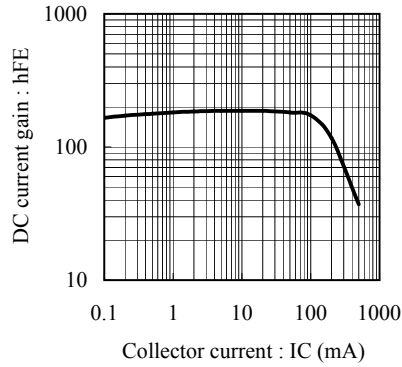


Fig.3 VCE(sat) - IC  
at IC/IB= 10, Ta= 25C

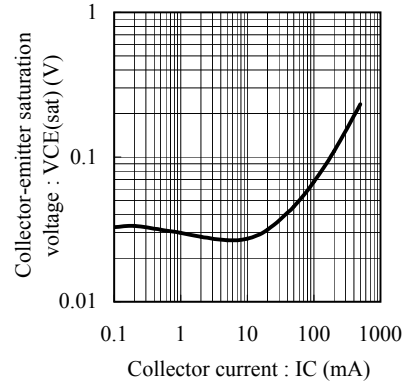


Fig.4 VBE(sat) - IC  
at IC/IB= 10, Ta= 25C

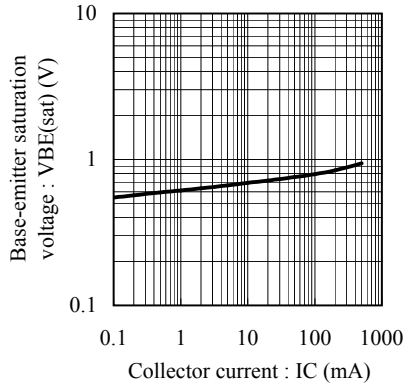


Fig.5 fT - IE  
at VCE= 2V, Ta= 25C

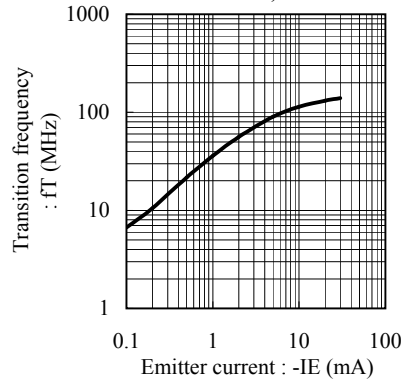


Fig.6 Cob - VCB  
at f= 1MHz, Ta= 25C

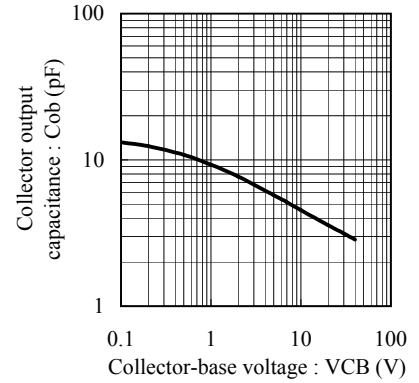


Fig.7 Cib - VEB  
at f= 1MHz, Ta= 25C

