

## Silicon NPN transistor triple diffused type CP872

### [ Applications ]

High voltage switching and amplifier

### [ Feature ]

High voltage  $V_{CEO} = 300V$

Low collector saturation voltage  $V_{CE(sat)} = 0.5V$  (Max.) at  $I_C = 10mA$ ,  $I_B = 1mA$

Small collector output capacitance  $C_{ob} = 1pF$  (Typ.) at  $V_{CB} = 20V$

PNP complementary pair with AP872

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

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	VCBO	350	V
Collector-emitter voltage	VCEO	300	V
Emitter-base voltage	VEBO	7	V
Collector current	IC	50	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	350	-	-	V	$I_C = 100\mu A$ , $I_E = 0A$
Collector-emitter breakdown voltage	BVCEO	300	-	-	V	$I_C = 1mA$ , $I_B = 0A$
Emitter-base breakdown voltage	BVEBO	7	-	-	V	$I_E = 100\mu A$ , $I_C = 0A$
Collector cut-off current	ICBO	-	-	0.5	$\mu A$	$V_{CB} = 350V$ , $I_E = 0A$
Emitter cut-off current	IEBO	-	-	0.5	$\mu A$	$V_{EB} = 7V$ , $I_C = 0A$
Collector cut-off current	ICEO	-	-	2	$\mu A$	$V_{CE} = 300V$ , $I_B = 0A$
DC current gain	hFE	64	-	310	-	$V_{CE} = 10V$ , $I_C = 10mA$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-	0.5	V	$I_C = 10mA$ , $I_B = 1mA$
Base-emitter saturation voltage	$V_{BE(sat)}$	-	-	1	V	$I_C = 10mA$ , $I_B = 1mA$
Transition frequency	fT	-	56	-	MHz	$V_{CE} = 10V$ , $I_E = -10mA$
Collector output capacitance	Cob	-	1.3	-	pF	$V_{CB} = 20V$ , $f = 1MHz$ , $I_E = 0A$

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 IC - VBE(on)  
at VCE= 10V, Ta= 25C

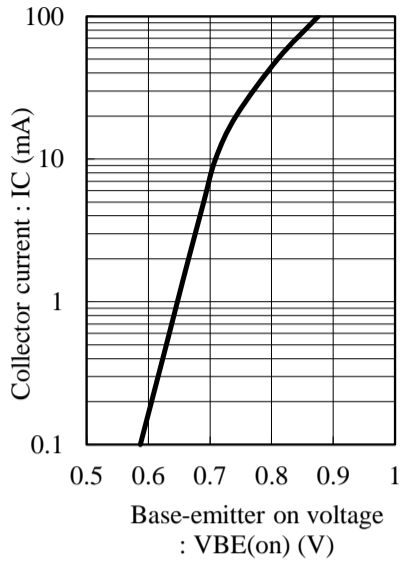


Fig.2 hFE - IC  
at VCE= 10V, Ta= 25C

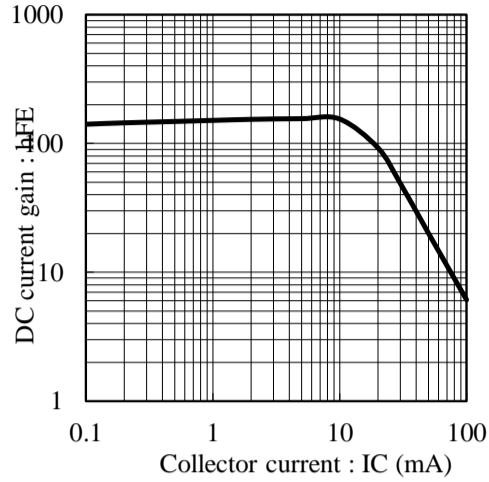


Fig.3 VCE(sat) - IC  
at IC/IB= 10, Ta= 25C

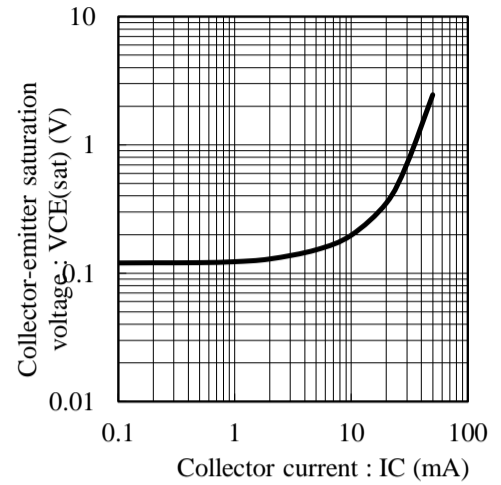


Fig.4 VBE(sat) - IC  
at IC/IB= 10, Ta= 25C

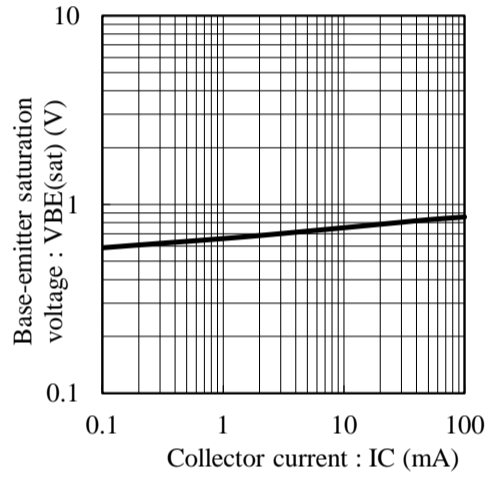


Fig.5 fT - IE  
at VCE= 10V, Ta= 25C

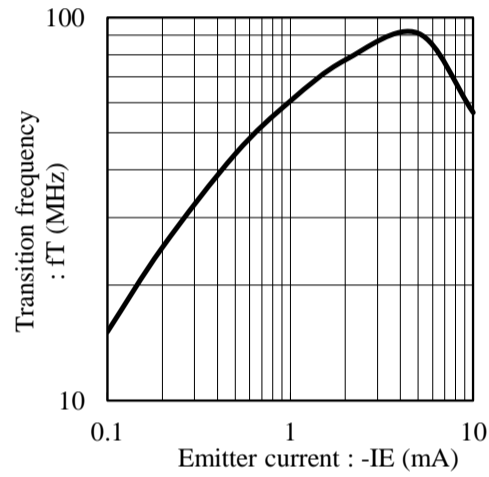


Fig.6 Cob - VCB  
at f= 1MHz, Ta= 25C

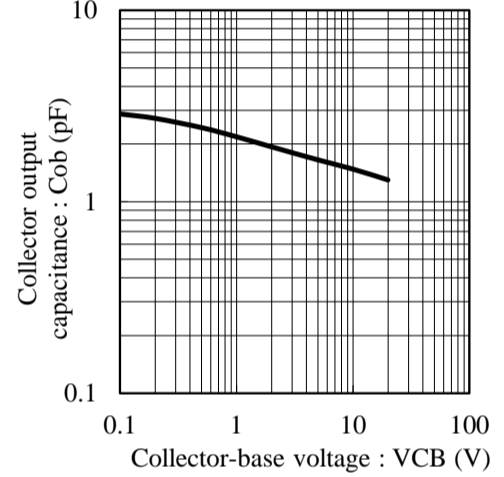


Fig.7 Cib - VEB  
at f= 1MHz, Ta= 25C

