

**Silicon NPN transistor epitaxial type  
CP869**

**[ Applications ]**

High voltage switching and amplifier  
LED lighting control

**[ Feature ]**

High voltage  $V_{CEO}= 400V$ ,  $V_{CBO}= 600V$   
Small collector output capacitance  $C_{ob}= 7pF$  (max.) at  $V_{CB}= 20V$

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

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	$V_{CBO}$	600	V
Collector-emitter voltage	$V_{CEO}$	400	V
Emitter-base voltage	$V_{EBO}$	7	V
Collector current	$I_C$	300	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	$BV_{CBO}$	600	-	-	V	$I_C= 50\mu A$ , $I_E= 0A$
Collector-emitter breakdown voltage	$BV_{CEO}$	400	-	-	V	$I_C= 1mA$ , $I_B= 0A$
Emitter-base breakdown voltage	$BV_{EBO}$	7	-	-	V	$I_E= 50\mu A$ , $I_C= 0A$
Collector cut-off current	$I_{CBO}$	-	-	0.5	$\mu A$	$V_{CB}= 600V$ , $I_E= 0A$
DC current gain 1	$h_{FE1}$	100	-	-	-	$V_{CE}= 10V$ , $I_C= 4mA$
DC current gain 2	$h_{FE2}$	100	-	300	-	$V_{CE}= 10V$ , $I_C= 10mA$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-	0.5	V	$I_C= 50mA$ , $I_B= 5mA$
Base-emitter saturation voltage	$V_{BE(sat)}$	-	-	1.0	V	$I_C= 50mA$ , $I_B= 5mA$
Transition frequency	$f_T$	50	-	-	MHz	$V_{CE}= 10V$ , $I_E= -20mA$
Collector output capacitance	$C_{ob}$	-	-	7	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

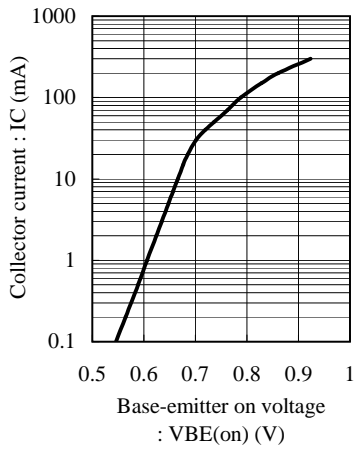


Fig.2 hFE - IC  
at VCE= 10V, Ta= 25C

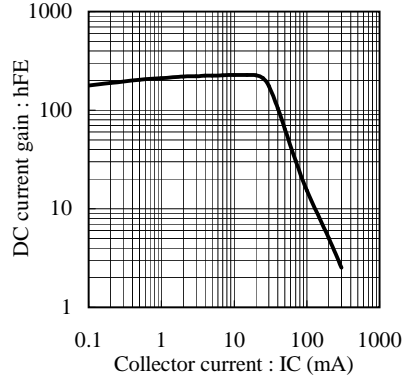


Fig.3 VCE(sat) - IC  
at IC/IB= 10, Ta= 25C

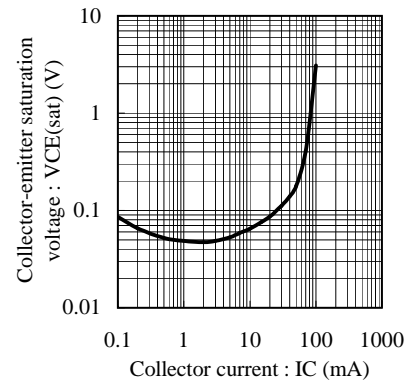


Fig.4 VBE(sat) - IC  
at IC/IB= 10, Ta= 25C

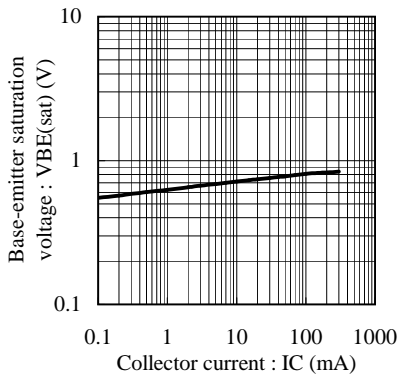


Fig.5 fT - IE  
at VCE= 10V, Ta= 25C

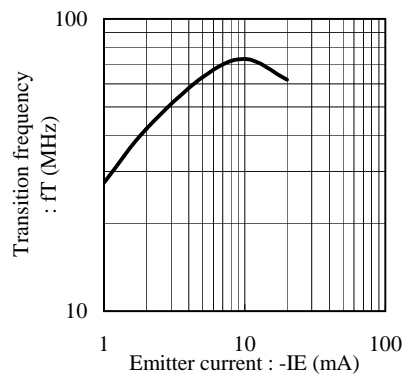


Fig.6 Cob - VCB  
at f= 1MHz, Ta= 25C

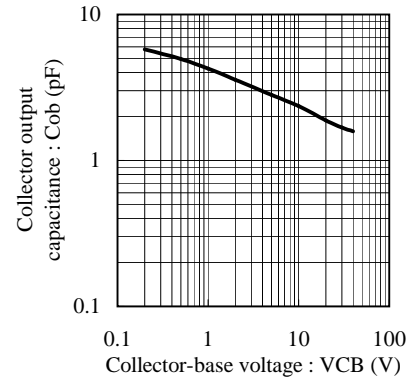


Fig.7 Cib - VEB  
at f= 1MHz, Ta= 25C

