

**Silicon NPN transistor triple diffused type  
CP964**

**[ Applications ]**

High voltage switching and amplifier

**[ Feature ]**

High voltage  $V_{CEO} = 400V$

Small collector output capacitance  $C_{ob} = 2pF$  (Typ.) at  $V_{CB} = 20V$

PNP complementary pair with A9964

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

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	VCBO	500	V
Collector-emitter voltage	VCEO	400	V
Emitter-base voltage	VEBO	7	V
Collector current	IC	300	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	500	-	-	V	IC= 50uA, IE= 0A
Collector-emitter breakdown voltage	BVCEO	400	-	-	V	IC= 1mA, IB= 0A
Emitter-base breakdown voltage	BVEBO	7	-	-	V	IE= 50uA, IC= 0A
Collector cut-off current	ICBO	-	-	0.5	uA	VCB= 500V, IE= 0A
DC current gain 1	hFE 1	50	-	-	-	VCE= 10V, IC= 4mA
DC current gain 2	hFE 2	60	-	200	-	VCE= 10V, IC= 20mA
Collector-emitter saturation voltage	VCE(sat)	-	-	0.5	V	IC= 50mA, IB= 5mA
Base-emitter saturation voltage	VBE(sat)	-	-	1.1	V	IC= 50mA, IB= 5mA
Transition frequency	fT	50	-	-	MHz	VCE= 10V, IE= -20mA
Collector output capacitance	Cob	-	-	7	pF	VCB= 20V, f= 1MHz, IE= 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

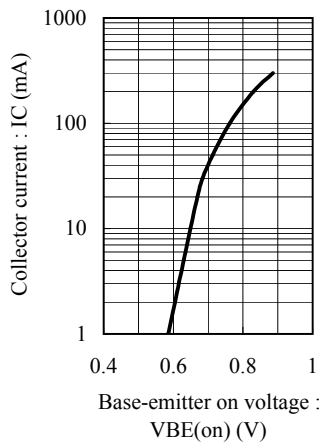


Fig.2 hFE - IC  
at VCE= 10V, Ta= 25C

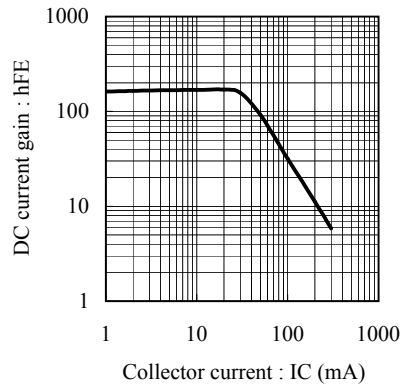


Fig.3 VCE(sat) - IC  
at IC/IB= 10, Ta= 25C

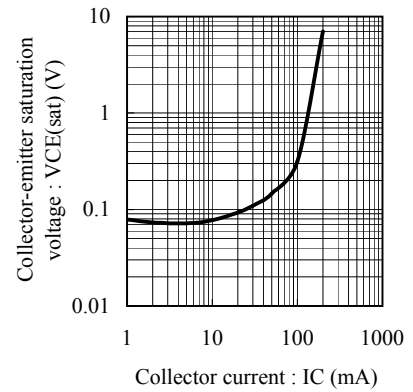


Fig.4 VBE(sat) - IC  
at IC/IB= 10, Ta= 25C

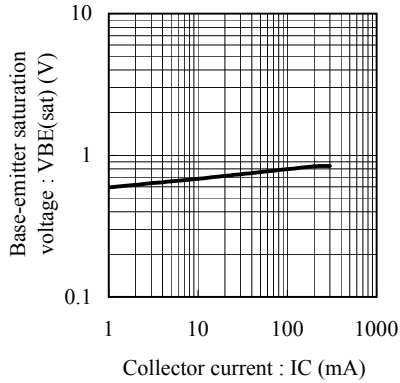


Fig.5 fT - IE  
at VCE= 10V, Ta= 25C

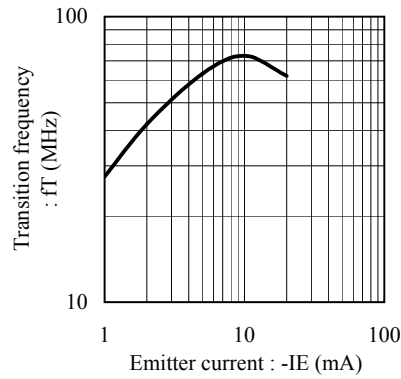


Fig.6 Cob - VCB  
at f= 1MHz, Ta= 25C

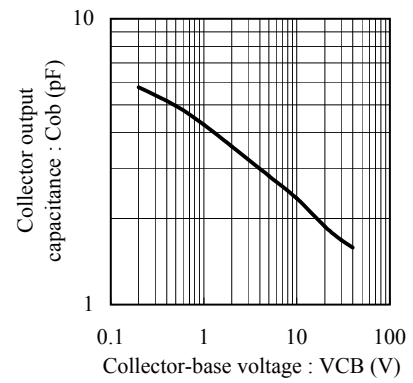


Fig.7 Cib - VEB  
at f= 1MHz, Ta= 25C

