

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 ($T_a = 25C$)]

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	V_{CBO}	350	V
Collector-emitter voltage	V_{CEO}	300	V
Emitter-base voltage	V_{EBO}	7	V
Collector current	I_C	50	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}	350	-	-	V	$I_C = 100\mu A$, $I_E = 0A$
Collector-emitter breakdown voltage	BV_{CEO}	300	-	-	V	$I_C = 1mA$, $I_B = 0A$
Emitter-base breakdown voltage	BV_{EBO}	7	-	-	V	$I_E = 100\mu A$, $I_C = 0A$
Collector cut-off current	I_{CBO}	-	-	0.5	μA	$V_{CB} = 350V$, $I_E = 0A$
Emitter cut-off current	I_{EBO}	-	-	0.5	μA	$V_{EB} = 7V$, $I_C = 0A$
Collector cut-off current	I_{CEO}	-	-	2	μA	$V_{CE} = 300V$, $I_B = 0A$
DC current gain	h_{FE}	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	f_T	-	56	-	MHz	$V_{CE} = 10V$, $I_E = -10mA$
Collector output capacitance	C_{ob}	-	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 I_C - $V_{BE(on)}$
at $V_{CE} = 10V$, $T_a = 25C$

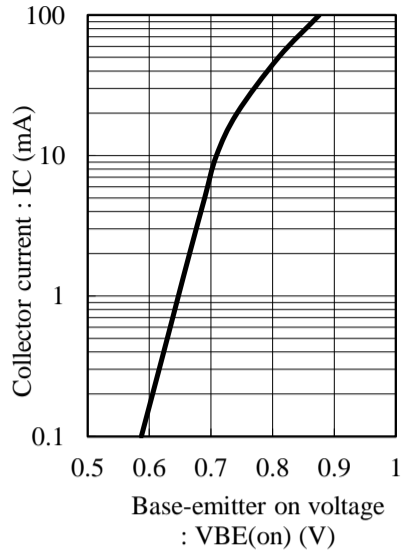


Fig.2 h_{FE} - I_C
at $V_{CE} = 10V$, $T_a = 25C$

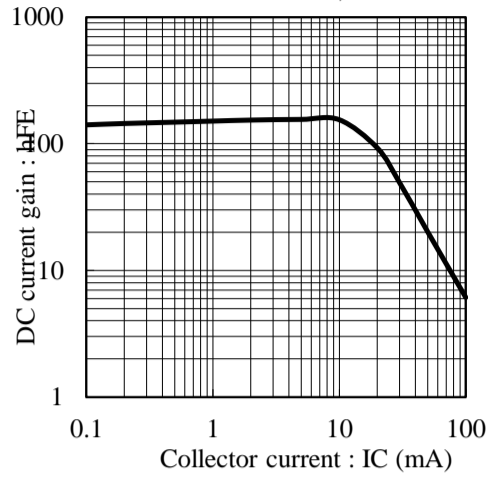


Fig.3 $V_{CE(sat)}$ - I_C
at $I_C/I_B = 10$, $T_a = 25C$

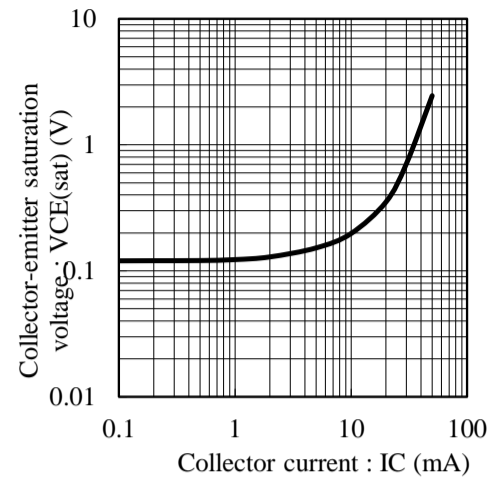


Fig.4 $V_{BE(sat)}$ - I_C
at $I_C/I_B = 10$, $T_a = 25C$

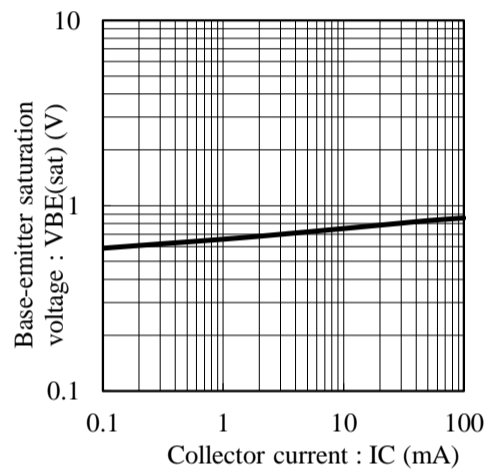


Fig.5 f_T - I_E
at $V_{CE} = 10V$, $T_a = 25C$

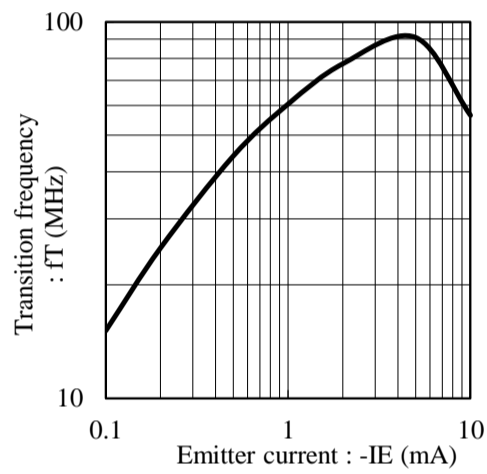


Fig.6 C_{ob} - V_{CB}
at $f = 1MHz$, $T_a = 25C$

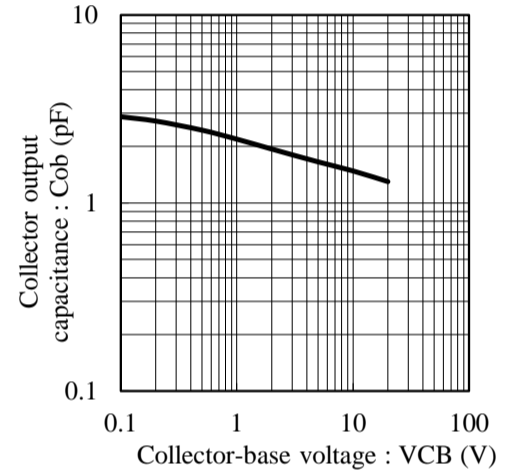


Fig.7 C_{ib} - V_{EB}
at $f = 1MHz$, $T_a = 25C$

