

Silicon NPN transistor triple diffused type CP880

[Applications]

High voltage switching

[Feature]

High voltage $V_{CEO}=800V$, $V_{CBO}=1600V$

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

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	V_{CBO}	1600	V
Collector-emitter voltage	V_{CEO}	800	V
Emitter-base voltage	V_{EBO}	6	V
Collector current	I_C	0.3	A
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}	1600	-	-	V	$I_C=1mA, I_E=0A$
Collector-emitter breakdown voltage	BV_{CEO}	800	-	-	V	$I_C=5mA, I_B=0A$
Emitter-base breakdown voltage	BV_{EBO}	6	-	-	V	$I_E=1mA, I_C=0A$
Collector cut-off current	I_{CBO}	-	-	10	μA	$V_{CB}=1600V, I_E=0A$
Collector cut-off current	I_{CEO}	-	-	1	mA	$V_{CE}=800V, I_B=0A$
Emitter cut-off current	I_{EBO}	-	-	10	μA	$V_{EB}=6V, I_C=0A$
DC current gain 1	h_{FE1}	20	-	40	-	$V_{CE}=5V, I_C=0.01A$
DC current gain 2	h_{FE2}	4	-	-	-	$V_{CE}=5V, I_C=0.1A$
DC current gain 3	h_{FE3}	1.5	-	-	-	$V_{CE}=5V, I_C=0.25A$
Collector-emitter saturation voltage 1	$V_{CE(sat)1}$	-	-	0.3	V	$I_C=0.05A, I_B=0.01A$
Collector-emitter saturation voltage 2	$V_{CE(sat)2}$	-	-	1.5	V	$I_C=0.1A, I_B=0.02A$
Base-emitter saturation voltage	$V_{BE(sat)}$	-	-	1.5	V	$I_C=0.25A, I_B=0.05A$
Rise time	t_r	-	-	0.8	μs	$V_{CC}=400V, I_C=0.25A$
Storage time	t_{stg}	-	-	3	μs	$I_{B1}=0.05A, I_{B2}=-0.1A$
Fall time	t_f	-	-	0.4	μs	

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 $V_{CE} = 5V$, $T_a = 25C$

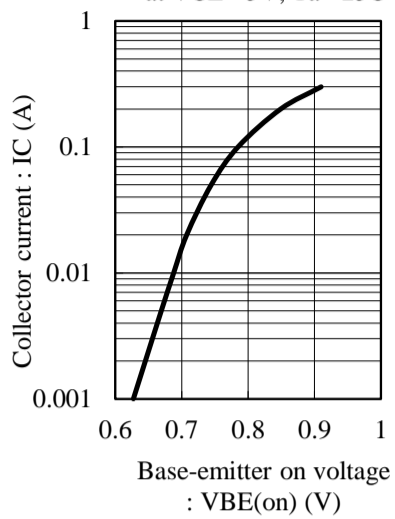


Fig.2 h_{FE} - I_C
at $V_{CE} = 5V$, $T_a = 25C$

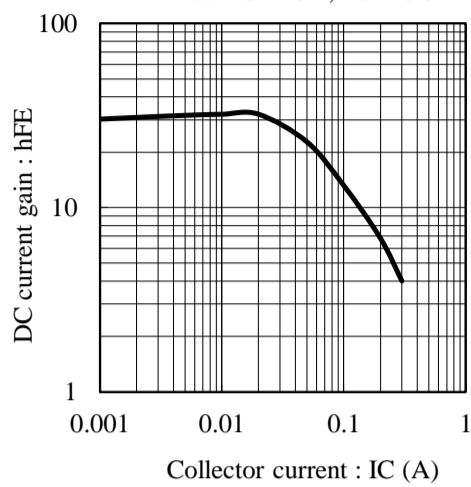


Fig.3 $V_{CE(sat)}$ - I_C
at $I_C/I_B = 5$, $T_a = 25C$

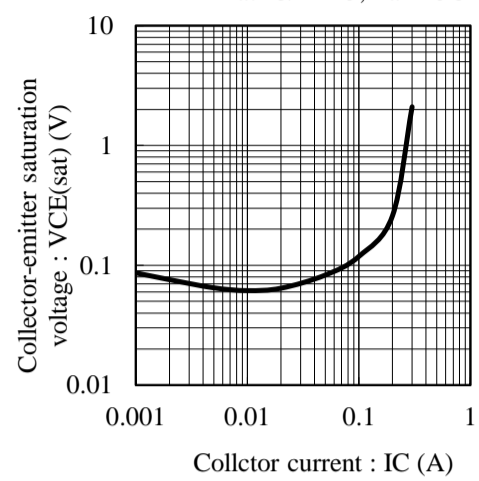


Fig.4 $V_{BE(sat)}$ - I_C
at $I_C/I_B = 5$, $T_a = 25C$

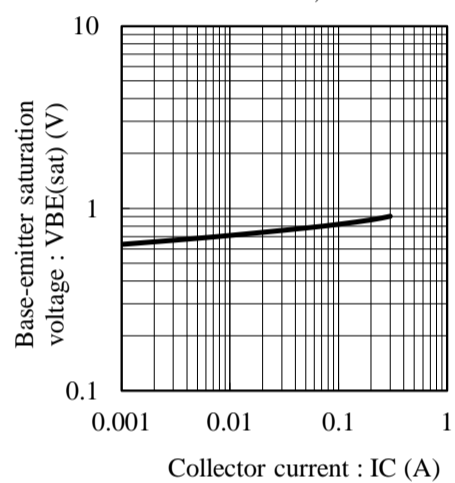


Fig.5 C_{ob} - V_{CB}
at $f = 1MHz$, $T_a = 25C$

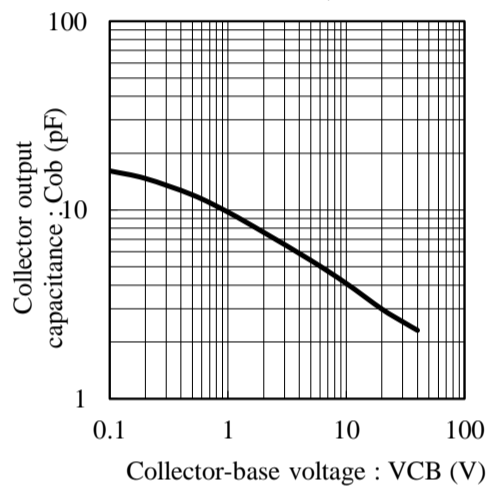


Fig.6 C_{ib} - V_{EB}
at $f = 1MHz$, $T_a = 25C$

