

**Silicon NPN transistor epitaxial type
C5913**

[Applications]

High speed switching, DC-DC convertor, DC-AC convertor

[Feature]

High DC gain $h_{FE} = 400-1000$ at $V_{CE} = 2V$, $I_C = 0.3A$

Low collector saturation voltage $V_{CE(sat)} = 0.14V$ (Max.) at $I_C = 1A$, $I_B = 20mA$

High speed switching time $t_f = 120ns$ (Typ.) at $V_{CC} = 30V$, $I_C = 1A$, $I_B = 33.3mA$

[Absolute maximum ratings (Ta=25C)]

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	VCBO	100	V
Collector-emitter voltage	VCEO	50	V
Emitter-base voltage	VEBO	7	V
Collector current (DC)	IC	3	A
Collector current (Pulse)	ICP	5	A
Base current	IB	0.3	A
Junction temperature	Tj	150	C
Storage temperature	Tstg	-55 to 150	C

[Electrical characteristics (Ta=25C)]

Characteristic	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-emitter breakdown voltage	BVCEO	50	-	-	V	$I_C = 10mA$, $I_B = 0A$
Collector cut-off current	ICBO	-	-	100	nA	$V_{CB} = 100V$, $I_E = 0A$
Emitter cut-off current	IEBO	-	-	100	nA	$V_{EB} = 7V$, $I_C = 0A$
DC current gain 1	h_{FE1}	400	-	1000	-	$V_{CE} = 2V$, $I_C = 0.3A$
DC current gain 2	h_{FE2}	200	-	-	-	$V_{CE} = 2V$, $I_C = 1A$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-	0.14	V	$I_C = 1A$, $I_B = 20mA$
Base-emitter saturation voltage	$V_{BE(sat)}$	-	-	1.1	V	$I_C = 1A$, $I_B = 20mA$
Transition frequency	fT	-	250	-	MHz	$V_{CE} = 2V$, $I_E = -0.3A$
Collector output capacitance	Cob	-	13	-	pF	$V_{CB} = 10V$, $f = 1MHz$, $I_E = 0A$
Turn on time	ton	-	40	-	ns	$V_{CC} = 30V$, $I_C = 1A$
Storage time	tstg	-	500	-	ns	$I_{B1} = -I_{B2} = 33.3mA$
Fall time	tf	-	120	-	ns	

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.

