

Silicon NPN transistor epitaxial type C5949

[Applications]

Inverter circuit of LCD monitor

[Feature]

Very low collector-emitter saturation voltage $V_{CE(sat)} = 350\text{mV}$ (Max.) at $I_C = 2\text{A}$, $I_B = 50\text{mA}$

[Absolute maximum ratings (Ta=25C)]

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	VCBO	170	V
Collector-emitter voltage	VCEO	60	V
Emitter-base voltage	VEBO	6	V
Collector current	IC	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-base breakdown voltage	BVCBO	170	200	-	V	$I_C = 100\mu\text{A}$
Collector-emitter breakdown voltage	BVCEO	60	90	-	V	$I_C = 1\text{mA}$
Emitter-base breakdown voltage	BVEBO	6	-	-	V	$I_E = 10\mu\text{A}$
Collector cut-off current	ICBO	-	-	0.5	μA	$V_{CB} = 170\text{V}$
Collector cut-off current	ICEO	-	-	1	μA	$V_{CE} = 60\text{V}$
Emitter cut-off current	IEBO	-	-	0.5	μA	$V_{EB} = 6\text{V}$
DC current gain	hFE	160	-	440	-	$V_{CE} = 2\text{V}$, $I_C = 100\text{mA}$
Collector-emitter saturation voltage 1	$V_{CE(sat)1}$	-	160	200	mV	$I_C = 1\text{A}$, $I_B = 25\text{mA}$
Collector-emitter saturation voltage 2	$V_{CE(sat)2}$	-	270	350	mV	$I_C = 2\text{A}$, $I_B = 50\text{mA}$
Base-emitter saturation voltage	$V_{BE(sat)}$	-	-	1.2	V	$I_C = 1\text{A}$, $I_B = 100\text{mA}$
Transition frequency	fT	-	200	-	MHz	$V_{CE} = 10\text{V}$, $I_E = -50\text{mA}$
Collector output capacitance	Cob	-	20	-	pF	$V_{CB} = 10\text{V}$, $f = 1\text{MHz}$, $I_E = 0\text{A}$

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 VBE(on) - IC
at VCE= 2V, Ta= 25C

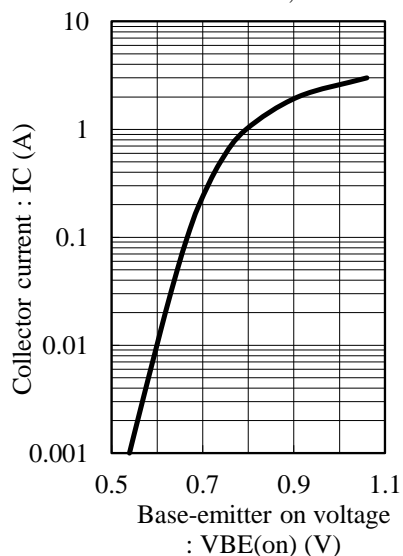


Fig.2 hFE - IC
at VCE= 2V, Ta= 25C

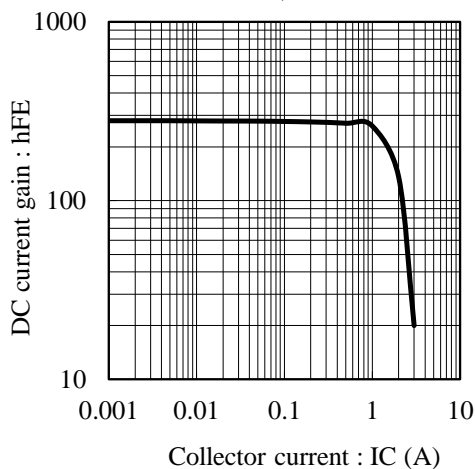


Fig.3 VCE(sat) - IC
at IC/IB= 40, Ta= 25C

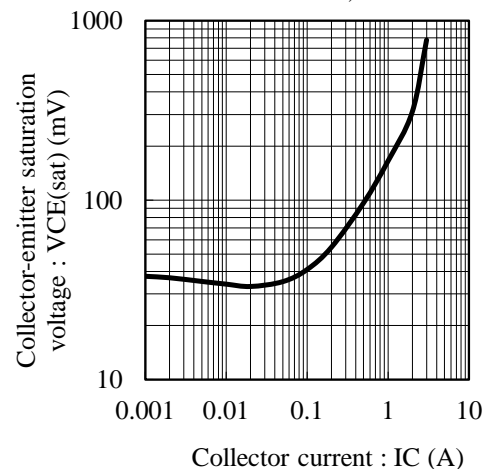


Fig.4 VBE(sat) - IC
at IC/IB= 10, Ta= 25C

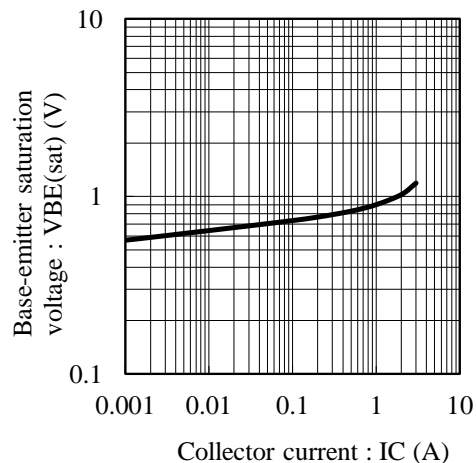


Fig.5 fT - IE
at VCE= 10V, Ta= 25C

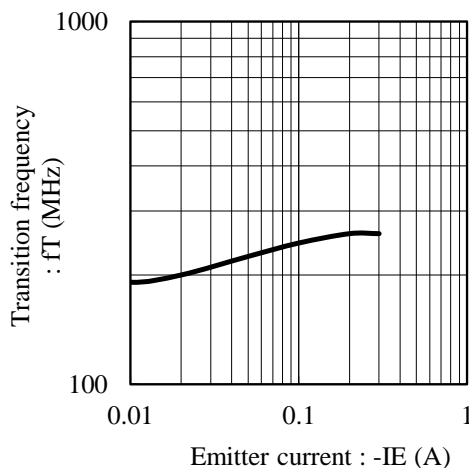


Fig.6 Cob - VCB
at f= 1MHz, Ta= 25C

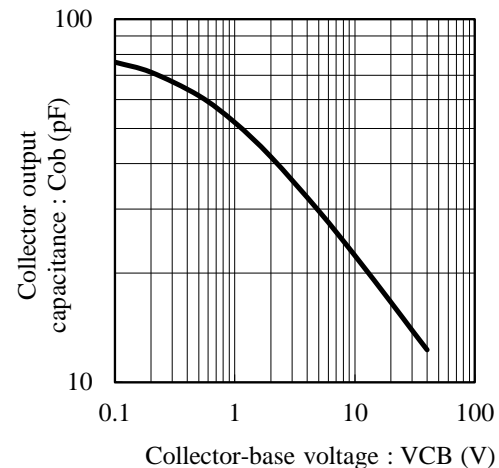


Fig.7 Cib - VEB
at f= 1MHz, Ta= 25C

