

**Silicon NPN transistor epitaxial type (darlington)  
D5918**

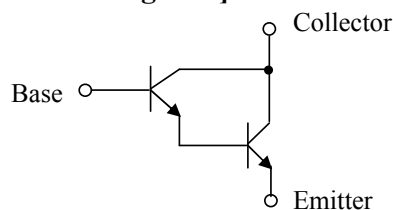
**[ Applications ]**

Motor driver

**[ Feature ]**

Darlington connection for a high hFE hFE=3k(min.) at VCE= 5V, IC= 160mA  
High input impedance

**[ Circuit diagram ]**



**[ Absolute maximum ratings (Ta=25C) ]**

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	VCBO	200	V
Collector-emitter voltage	VCES	200	V
Emitter-base voltage	VEBO	10	V
Collector current	IC	600	mA
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	200	-	-	V	IC= 100uA
Collector-emitter breakdown voltage	BVCES	200	-	-	V	IC= 1mA
Emitter-base breakdown voltage	BVEBO	10	-	-	V	IE= 100uA
Collector cut-off current	ICBO	-	-	500	nA	VCB= 180V
Emitter cut-off current	IEBO	-	-	100	nA	VEB= 10V
DC current gain 1	hFE 1	3k	-	-	-	VCE= 5V, IC= 100uA
DC current gain 2	hFE 2	3k	-	-	-	VCE= 5V, IC= 10mA
DC current gain 3	hFE 3	3k	-	-	-	VCE= 5V, IC= 160mA
Collector-emitter saturation voltage 1	VCE(sat) 1	-	-	0.9	V	IC= 20mA, IB= 25uA
Collector-emitter saturation voltage 2	VCE(sat) 2	-	-	1.1	V	IC= 80mA, IB= 40uA
Collector-emitter saturation voltage 3	VCE(sat) 3	-	-	1.2	V	IC= 160mA, IB= 100uA
Base-emitter on voltage	VBE(on)	-	-	2	V	VCE= 5V, IC= 160mA
Transition frequency	fT	-	60	-	MHz	VCE= 5V, IE= -10mA
Collector output capacitance	Cob	-	5	-	pF	VCB= 10V, 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 VBE(on) - IC  
at VCE= 5V, Ta= 25C

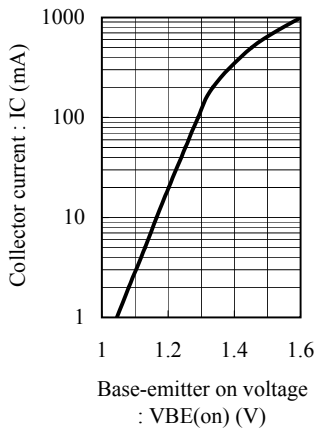


Fig.2 hFE - IC  
at VCE= 5V, Ta= 25C

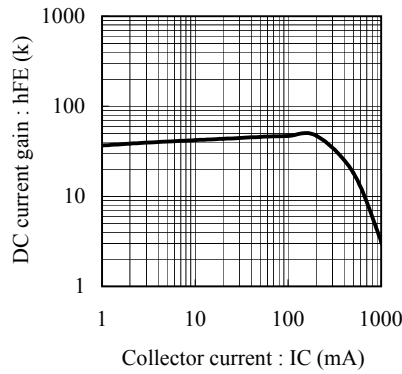


Fig.3 VCE(sat) - IC  
at IC/IB= 800, Ta= 25C

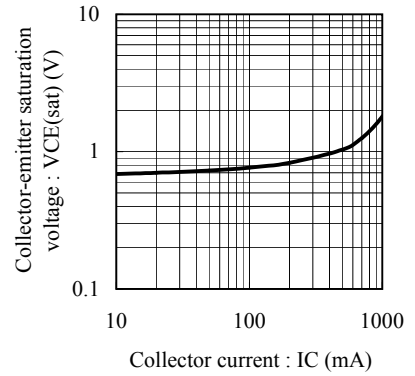


Fig.4 VCE(sat) - IC  
at IC/IB= 1000, Ta= 25C

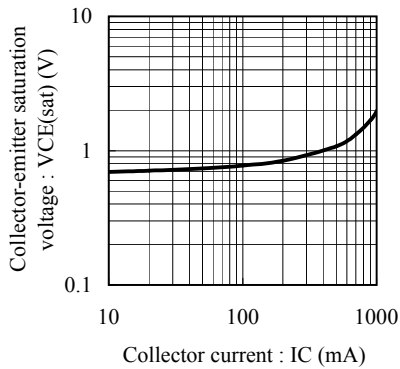


Fig.5 VCE(sat) - IC  
at IC/IB= 1600, Ta= 25C

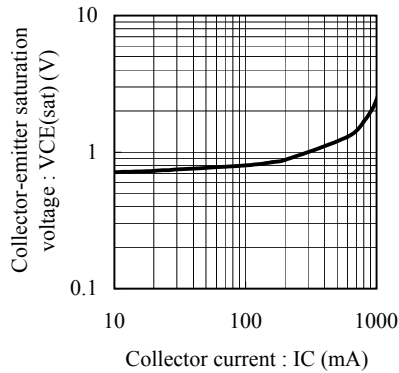


Fig.6 VCE(sat) - IC  
at IC/IB= 2000, Ta= 25C

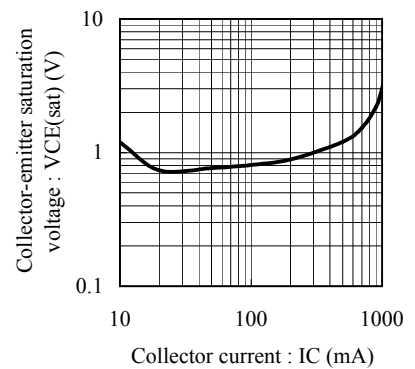


Fig.7 VBE(sat) - IC  
at IC/IB= 1000, Ta= 25C

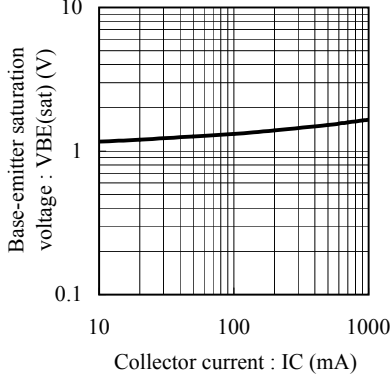


Fig.8 fT - IE  
at VCE= 5V, Ta= 25C

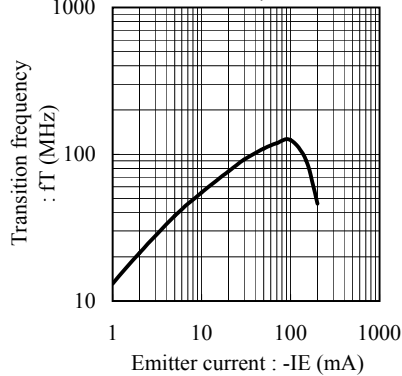


Fig.9 Cob - VCB  
at f= 1MHz, Ta= 25C

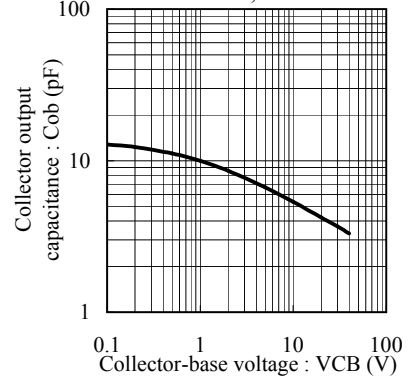


Fig.10 Cib - VEB  
at f= 1MHz, Ta= 25C

