

**Silicon NPN transistor epitaxial type (darlington)
DP053**

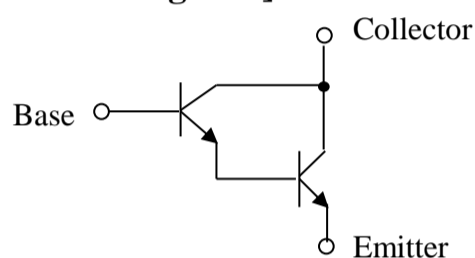
[Applications]

Motor driver

[Feature]

Darlington connection for a high hFE hFE= 10k(min.) at VCE= 5V, IC= 100mA
High input impedance

[Circuit diagram]



[Absolute maximum ratings (Ta=25C)]

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	VCBO	80	V
Collector-emitter voltage	VCEO	80	V
Emitter-base voltage	VEBO	12	V
Collector current	IC	500	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	80	-	-	V	IC= 100uA
Collector-emitter breakdown voltage	BVCEO	80	-	-	V	IC= 1mA
Emitter-base breakdown voltage	BVEBO	12	-	-	V	IE= 10uA
Collector cut-off current	ICBO	-	-	100	nA	VCB= 60V
Collector cut-off current	ICES	-	-	500	nA	VCE= 60V
Emitter cut-off current	IEBO	-	-	100	nA	VEB= 10V
DC current gain 1	hFE 1	10k	-	-	-	VCE= 5V, IC= 10mA
DC current gain 2	hFE 2	10k	-	-	-	VCE= 5V, IC= 100mA
Collector-emitter saturation voltage 1	VCE(sat) 1	-	-	1.2	V	IC= 10mA, IB= 10uA
Collector-emitter saturation voltage 2	VCE(sat) 2	-	-	1.5	V	IC= 100mA, IB= 100uA
Base-emitter on voltage	VBE(on)	-	-	2	V	VCE= 5V, IC= 100mA

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

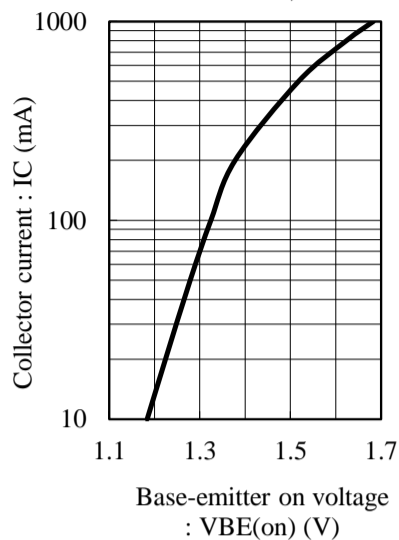


Fig.2 hFE - IC
at VCE= 5V, Ta= 25C

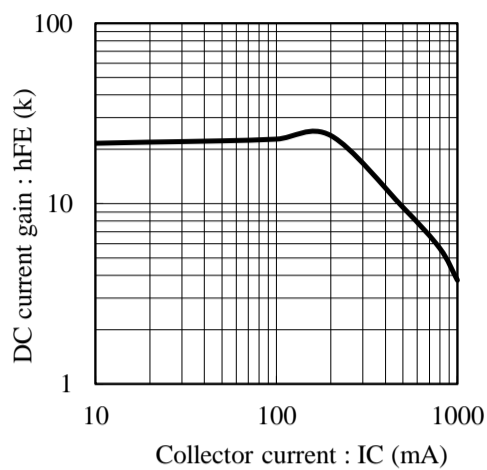


Fig.3 VCE(sat) - IC
at IC/IB= 1000, Ta= 25C

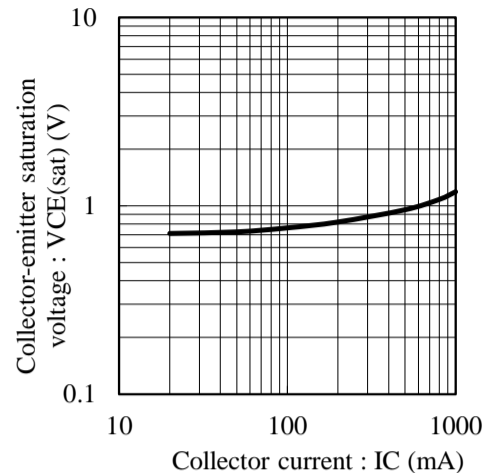


Fig.4 VBE(sat) - IC
at IC/IB= 10, Ta= 25C

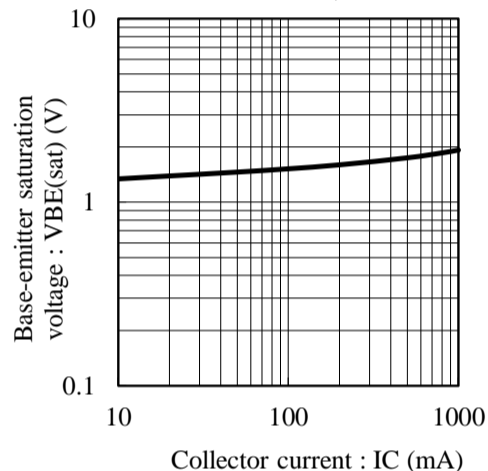


Fig.5 fT - IE
at VCE= 5V, Ta= 25C

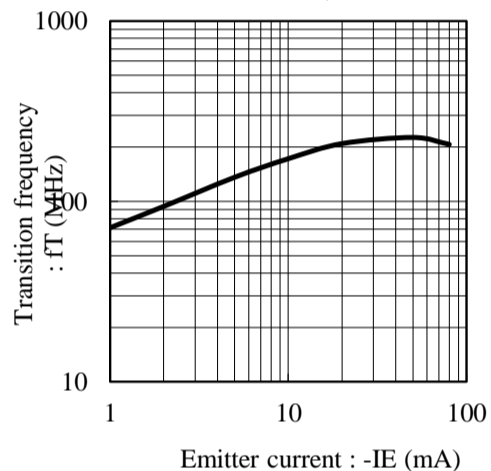


Fig.6 Cob - VCB
at f= 1MHz, Ta= 25C

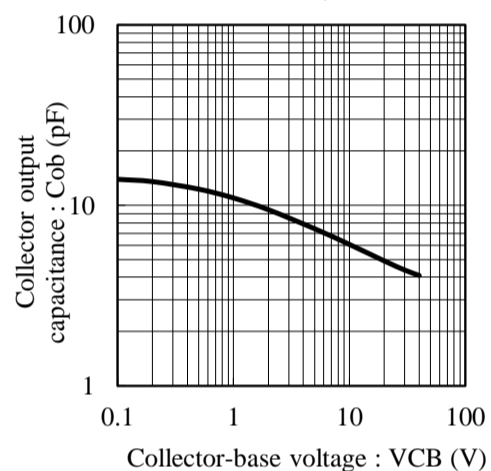


Fig.7 Cib - VEB
at f= 1MHz, Ta= 25C

