

## Silicon NPN transistor epitaxial type C5833

### [ Applications ]

DC-DC converter, Strobo flash, Relay drive, Inverter drive  
with small VCE(sat) and high current

### [ Feature ]

High collector current

Low collector-emitter saturation voltage VCE(sat)= 500mV (Max.) at IC= 4A, IB= 200mA

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

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	VCBO	50	V
Collector-emitter voltage	VCEO	25	V
Emitter-base voltage	VEBO	7	V
Collector current	IC	5	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	50	-	-	V	IC= 10uA, IE= 0A
Collector-emitter breakdown voltage	BVCEO	25	-	-	V	IC= 10mA, IB= 0A
Emitter-base breakdown voltage	BVEBO	7	-	-	V	IE= 10uA, IC= 0A
Collector cut-off current	ICBO	-	-	1	uA	VCB= 50V, IE= 0A
Emitter cut-off current	IEBO	-	-	1	uA	VEB= 7V, IE= 0A
DC current gain 1	hFE 1	250	-	550	-	VCE= 2V, IC= 500mA
DC current gain 2	hFE 2	150	-	-	-	VCE= 2V, IC= 2A
DC current gain 3	hFE 3	50	-	-	-	VCE= 2V, IC= 5A
Collector-emitter saturation voltage 1	VCE(sat) 1	-	-	350	mV	IC= 3A, IB= 150mA
Collector-emitter saturation voltage 2	VCE(sat) 2	-	-	500	mV	IC= 4A, IB= 200mA
Base-emitter saturation voltage 1	VBE(sat) 1	-	-	1.1	V	IC= 3A, IB= 150mA
Base-emitter saturation voltage 2	VBE(sat) 2	-	-	1.4	V	IC= 4A, IB= 200mA
Transition frequency	f T	-	400	-	MHz	VCE= 10V, IE= -500mA
Collector output capacitance	Cob	-	15	-	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.

No. C5833-20200807

Fig.1 VBE(on) - IC  
at VCE= 2V, Ta= 25C

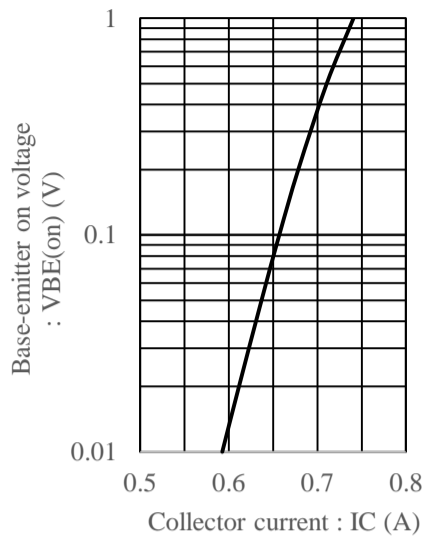


Fig.2 hFE - IC  
at VCE= 2V, Ta= 25C

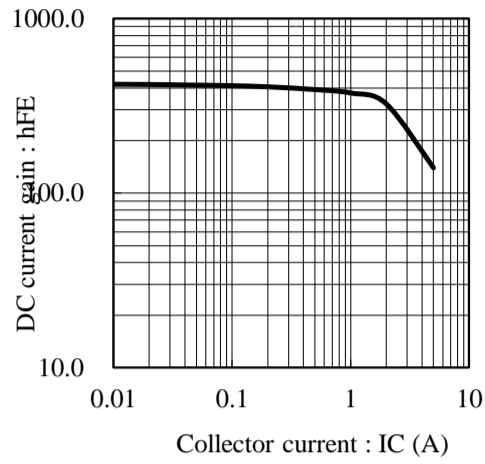


Fig.3 VCE(sat) - IC  
at IC/IB= 20, Ta= 25C

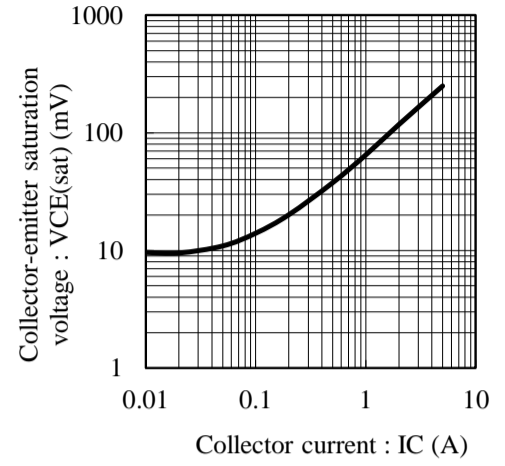


Fig.4 VBE(sat) - IC  
at IC/IB= 20, Ta= 25C

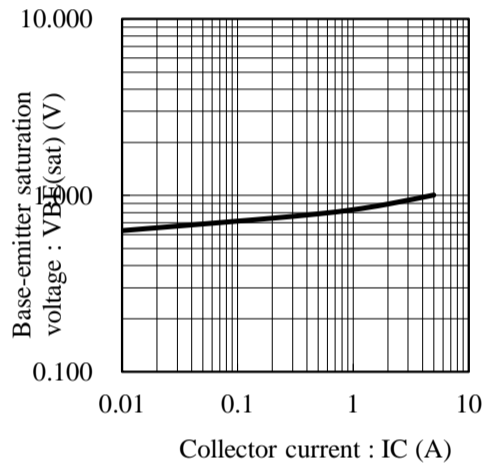


Fig.5 fT - IE  
at VCE= 10V, Ta= 25C

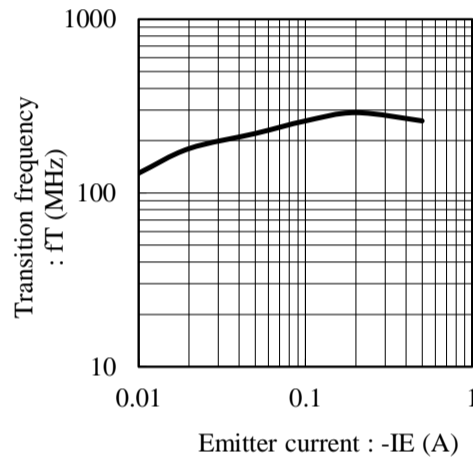


Fig.6 Cob - VCB  
at f= 1MHz, Ta= 25C

