

## Silicon NPN transistor epitaxial type CP370

### [ Applications ]

High-speed switching applications.

### [ Feature ]

Similar specifications with MMBT2369 and MMBT2369A  
and suitable for portable equipment.

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

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	VCBO	40	V
Collector-emitter voltage	VCES	40	V
Collector-emitter voltage	VCEO	15	V
Emitter-base voltage	VEBO	4.5	V
Collector current	IC	200	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	40	-	-	V	IC= 10uA
Collector-emitter breakdown voltage	BVCES	40	-	-	V	IC= 10uA
Collector-emitter breakdown voltage	BVCEO	15	-	-	V	IC= 10mA
Emitter-base breakdown voltage	BVEBO	4.5	-	-	V	IE= 10uA
Collector cut-off current	ICBO	-	-	400	nA	VCB= 20V
Collector cut-off current	ICES	-	-	400	nA	VCES= 20V
DC current gain 1	hFE 1	-	-	120	-	VCE= 1V, IC= 10mA
DC current gain 2	hFE 2	40	-	-	-	VCE= 0.35V, IC= 10mA
DC current gain 3	hFE 3	30	-	-	-	VCE= 0.4V, IC= 30mA
DC current gain 4	hFE 4	20	-	-	-	VCE= 1V, IC= 100mA
Collector-emitter saturation voltage 1	VCE(sat) 1	-	-	0.2	V	IC= 10mA, IB= 1mA
Collector-emitter saturation voltage 2	VCE(sat) 2	-	-	0.25	V	IC= 30mA, IB= 3mA
Collector-emitter saturation voltage 3	VCE(sat) 3	-	-	0.5	V	IC= 100mA, IB= 10mA
Base-emitter saturation voltage 1	VBE(sat) 1	0.75	-	0.85	V	IC= 10mA, IB= 1mA
Base-emitter saturation voltage 2	VBE(sat) 2	-	-	1.15	V	IC= 30mA, IB= 3mA
Base-emitter saturation voltage 3	VBE(sat) 3	-	-	1.6	V	IC= 100mA, IB= 10mA
Output capacitance	Cob	-	-	4	pF	VCB= 5V, f= 1MHz, IE= 0A
Storage time *	tstg	-	5	13	ns	IB1= -IB2= 10mA
Turn-on time *	ton	-	8	12	ns	IB1= -IB2= 3mA
Turn-off time *	toff	-	10	18	ns	IB1= 3mA, IB2= -1.5mA

\* VCC= 3V, IC= 10mA, Data for reference only : Equivalent level with ON Semiconductor MMBT2369A.

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 hFE - IC  
at VCE= 1V, Ta=25 C

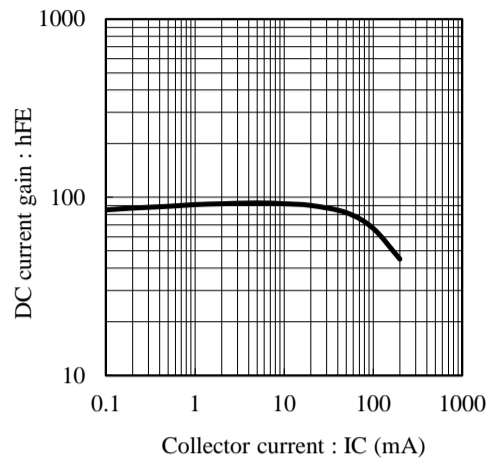


Fig.2 hFE - IC  
at VCE= 2V, Ta= 25C

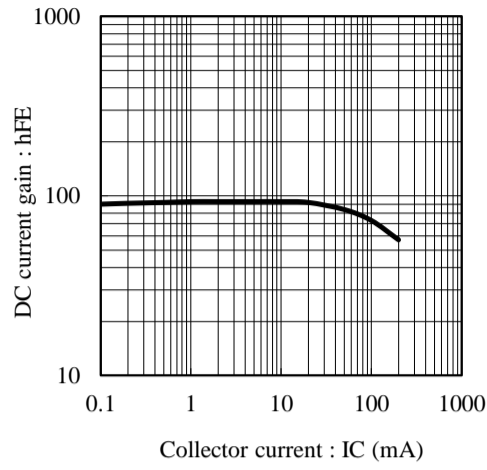


Fig.3 hFE - IC  
at VCE= 0.4V, Ta= 25C

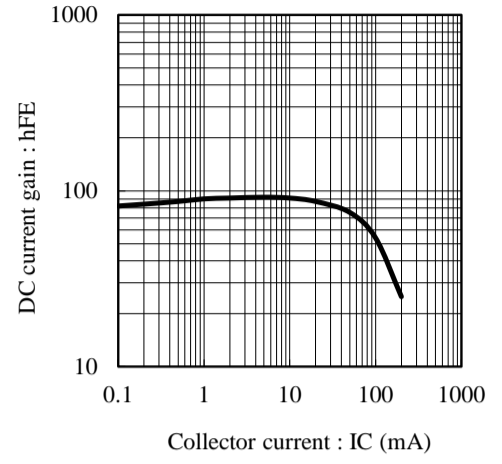


Fig.4 VCE(sat) - IC  
at IC/IB= 10, Ta= 25C

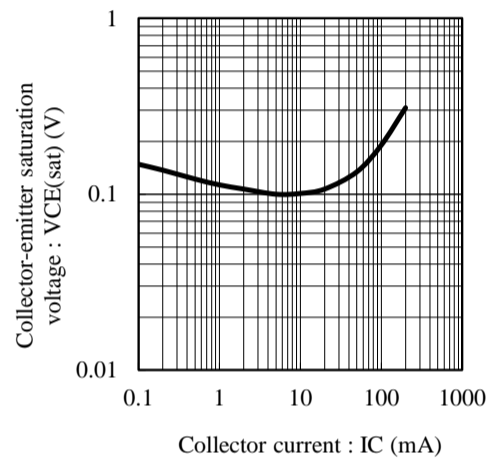


Fig.5 VBE(sat) - IC  
at IC/IB= 10, Ta= 25C

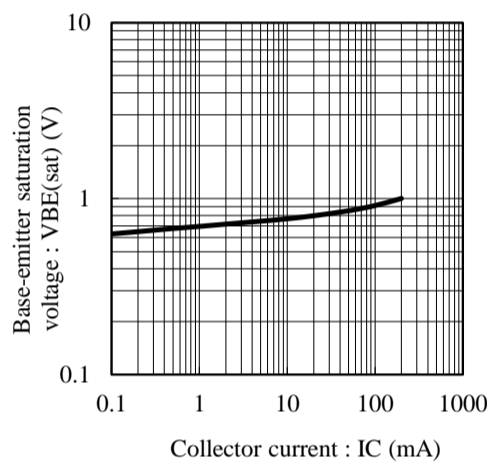


Fig.6 Cob - VCB  
at f= 1MHz, Ta= 25C

