

## Silicon PNP transistor epitaxial type BP865

### [ Applications ]

Battery charger  
Low voltage switching

### [ Feature ]

Low collector saturation voltage  $V_{CE(sat)} = -0.6V$  (Max.) at  $I_C = -10A$ ,  $I_B = -0.33A$   
High speed switching

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

Characteristic	Symbol	Maximum ratings	Unit
Collector-base voltage	VCBO	-50	V
Collector-emitter voltage	VCEO	-40	V
Emitter-base voltage	VEBO	-5	V
Collector current (DC)	IC	-10	A
Collector current (Pulse)	ICP	-20	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-emitter breakdown voltage	BVCEO	-40	-	-	V	$I_C = -10mA$ , $I_B = 0A$
Collector cut-off current	ICBO	-	-	-50	uA	$V_{CB} = -50V$ , $I_E = 0A$
Emitter cut-off current	IEBO	-	-	-50	uA	$V_{EB} = -5V$ , $I_C = 0A$
DC current gain 1	hFE 1	45	-	-	-	$V_{CE} = -2V$ , $I_C = -0.1A$
DC current gain 2	hFE 2	90	-	260	-	$V_{CE} = -2V$ , $I_C = -3A$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-	-0.6	V	$I_C = -10A$ , $I_B = -0.33A$
Base-emitter saturation voltage	$V_{BE(sat)}$	-	-	-1.5	V	$I_C = -10A$ , $I_B = -0.33A$
Transition frequency	fT	-	40	-	MHz	$V_{CE} = -10V$ , $I_E = 0.5A$
Collector output capacitance	Cob	-	300	-	pF	$V_{CB} = -10V$ , $f = 1MHz$ , $I_E = 0A$
Turn on time	ton	-	0.1	-	us	$V_{CC} = -20V$
Storage time	tstg	-	0.5	-	us	$I_C = -3A$
Fall time	tf	-	0.1	-	us	$I_{B1} = -I_{B2} = -0.1A$

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

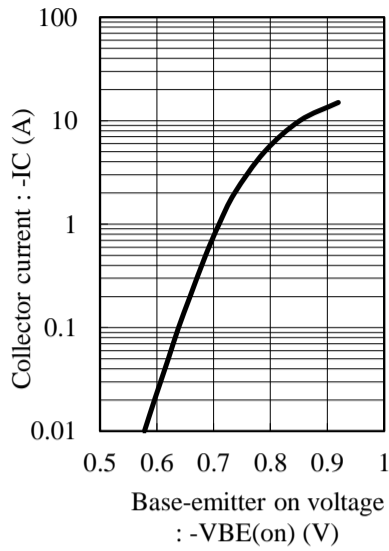


Fig.2 hFE - IC  
at VCE= -2V, Ta= 25C

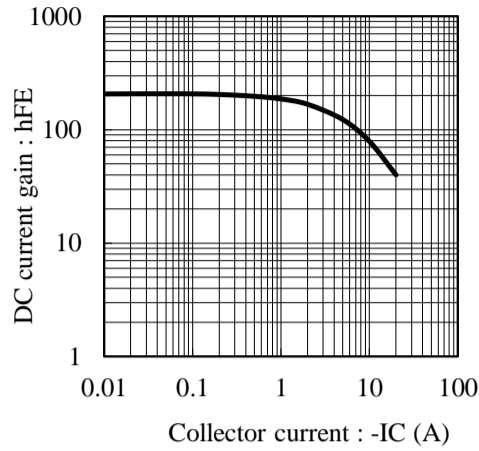


Fig.3 VCE(sat) - IC  
at IC/IB= 30, Ta= 25C

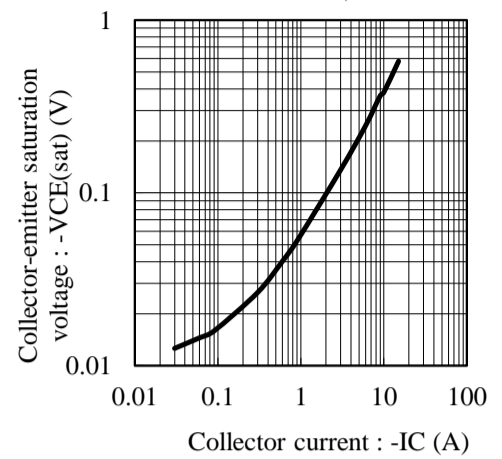


Fig.4 VBE(sat) - IC  
at IC/IB= 30, Ta= 25C

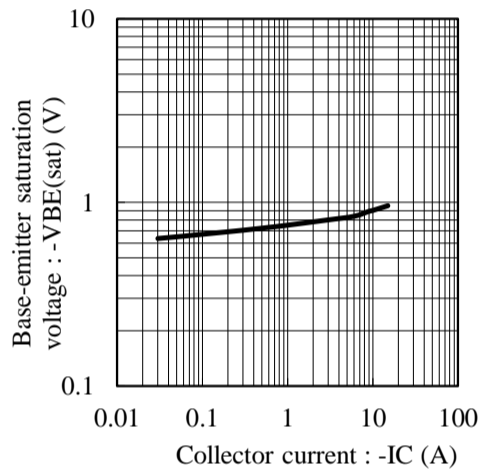


Fig.5 fT - IE  
at VCE= -10V, Ta= 25C

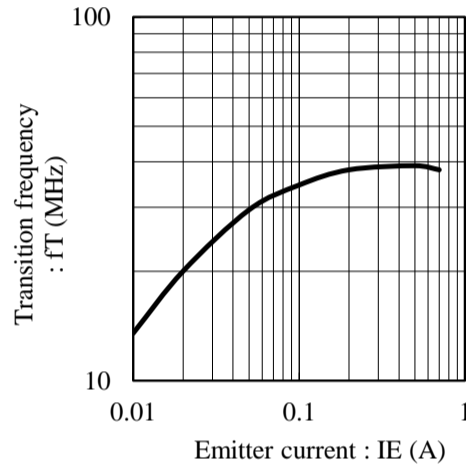


Fig.6 Cob - VCB  
at f= 1MHz, Ta= 25C

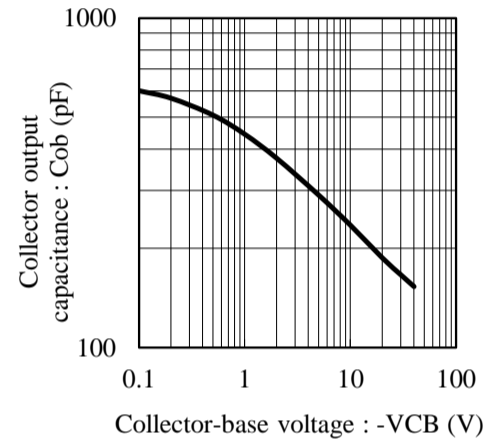


Fig.7 Cib - VEB  
at f= 1MHz, Ta= 25C

