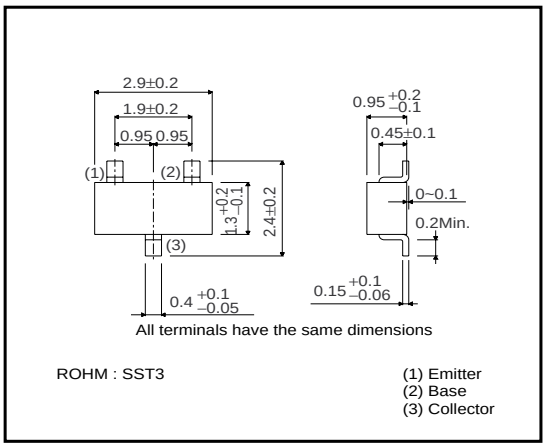
NPN General Purpose Transistor

BC847B

●**Features**

1) BV_{CEO} < 45V (I_C=1mA)
2) Complements the BC857B.

●**External dimensions** (Unit : mm)



●**Package, marking, and Packaging specifications**

Part No.	BC847B
Packaging type	SST3
Marking	G1F
Code	T116
Basic ordering unit (pieces)	3000

●**Absolute maximum ratings** (Ta=25°C)

Parameter	Symbol	Limits	Unit	
Collector-base voltage	V_{CBO}	50	V	
Collector-emitter voltage	V_{CEO}	45	V	
Emitter-base voltage	V_{EBO}	6	V	
Collector current	I_C	0.1	A	
Collector power dissipation	P_C	0.2	W	*
		0.35		
Junction temperature	Tj	150	°C	
Storage temperature	Tstg	−65 to +150	°C	

* When mounted on a 7×5×0.6mm ceramic board.

●**Electrical characteristics** (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	50	–	–	V	I_C=50μA
Collector-emitter breakdown voltage	BV_{CEO}	45	–	–	V	I_C=1mA
Emitter-base breakdown voltage	BV_{EBO}	6	–	–	V	I_E=50μA
Collector cutoff current	I_{CBO}	–	–	15	nA	V_{CB}=30V
		–	–	5	μA	V_{CB}=30V, Ta=150°C
Collector-emitter saturation voltage	$V_{CE(sat)}$	–	–	0.25	V	I_C/I_B=10mA/0.5mA
		–	–	0.6		I_C/I_B=100mA/5mA
Base-emitter saturation voltage	$V_{BE(on)}$	0.58	–	0.77	V	V_{CE}/I_C=5V/10mA
DC current transfer ratio	h_{FE}	200	–	450	–	
Transition frequency	f_T	–	200	–	MHz	V_{CE}=5V, I_E=−20mA, f=100MHz
Collector output capacitance	Cob	–	3	–	pF	V_{CB}=10V, I_E=0, f=1MHz
Emitter input capacitance	Cib	–	8	–	pF	V_{EB}=0.5V, I_C=0, f=1MHz

●Electrical characteristic curves

The electrical characteristic curves for these products are the same as those of UMT222A, SST222A, MMST2222A and PN2222A.

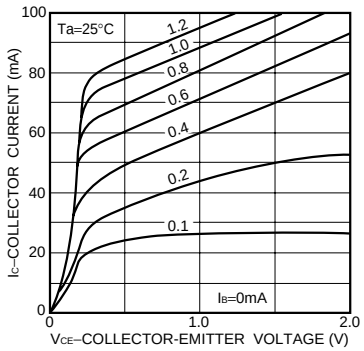


Fig.1 Grounded emitter output characteristics (Ⅰ)

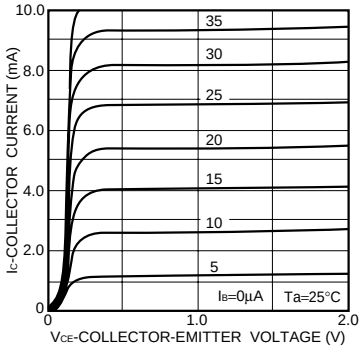


Fig.2 Grounded emitter output characteristics (Ⅱ)

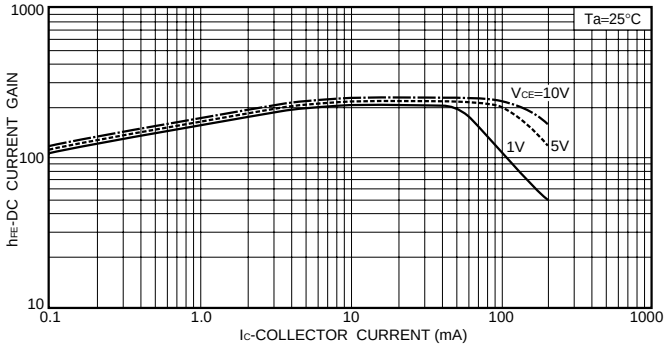


Fig.3 DC current gain vs. collector current (Ⅰ)

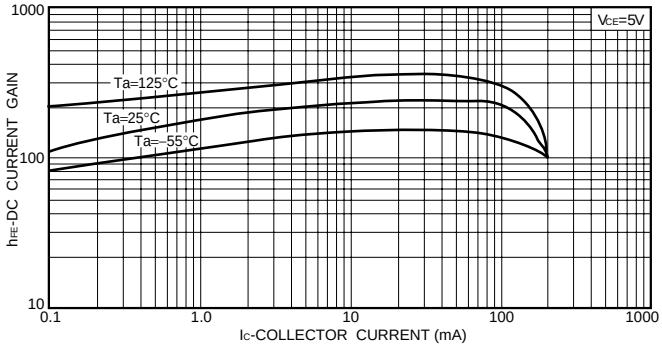


Fig.4 DC current gain vs. collector current (Ⅱ)

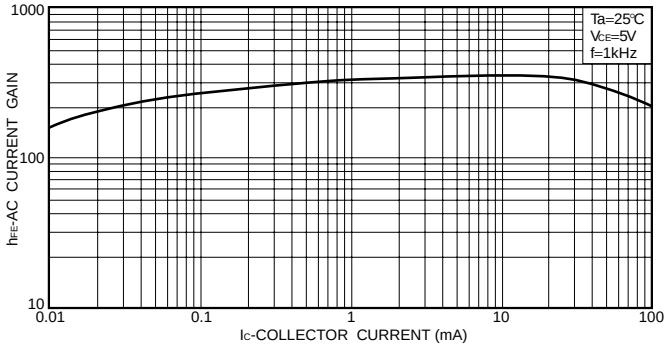


Fig.5 AC current gain vs. collector current

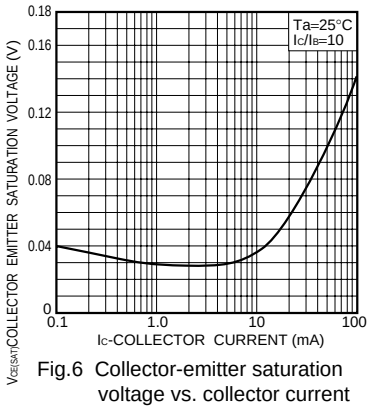


Fig.6 Collector-emitter saturation voltage vs. collector current

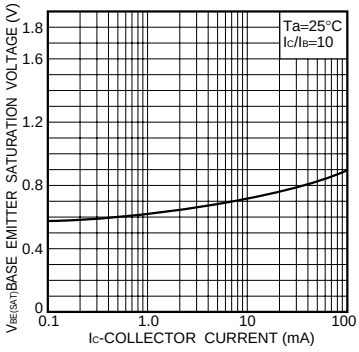


Fig.7 Base-emitter saturation voltage vs. collector current

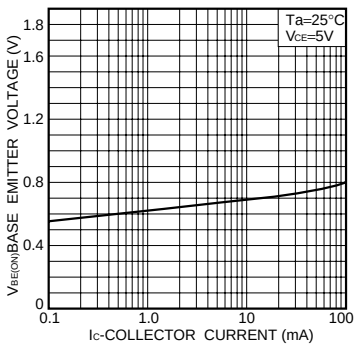


Fig.8 Grounded emitter propagation characteristics

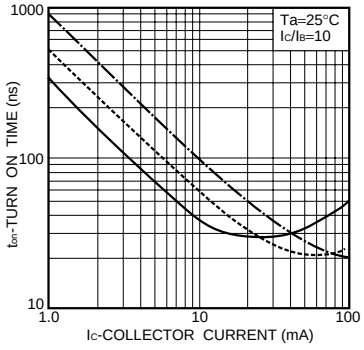


Fig.9 Turn-on time vs. collector current

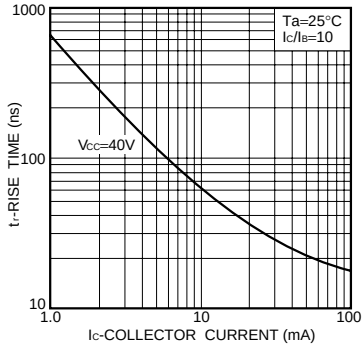


Fig.10 Rise time vs. collector current

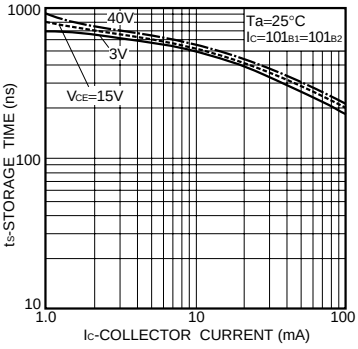


Fig.11 Storage time vs. collector current

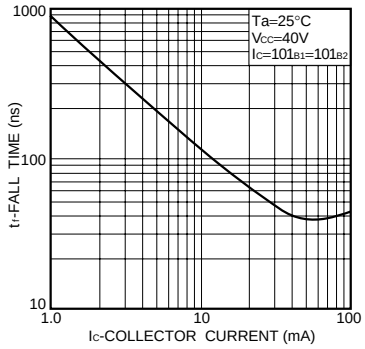


Fig.12 Fall time vs. collector current

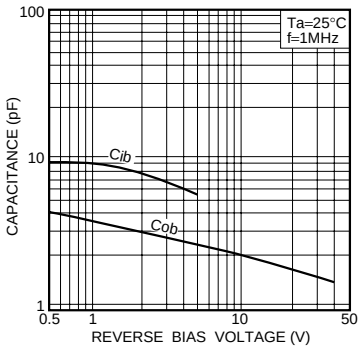


Fig.13 Input/output capacitance vs. voltage

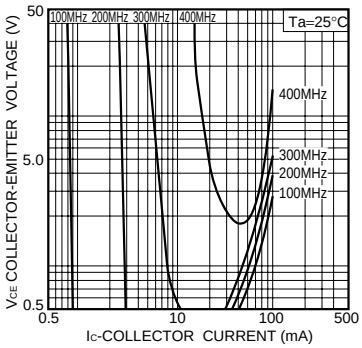


Fig.14 Gain bandwidth product

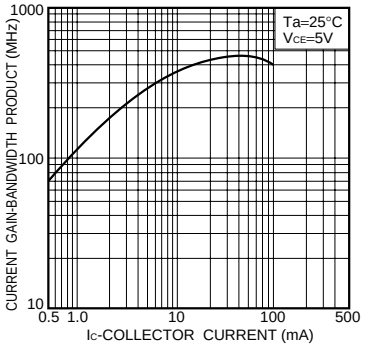


Fig.15 Gain bandwidth product vs. collector current

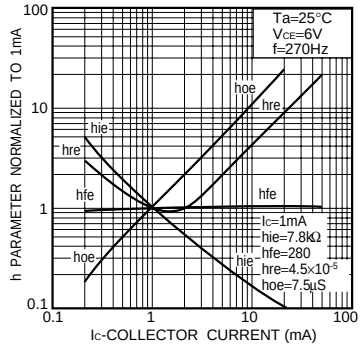


Fig.16 h parameter vs. collector current

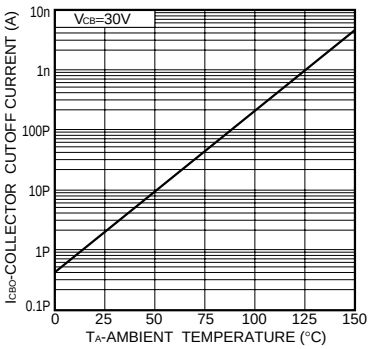


Fig.17 Collector cutoff current

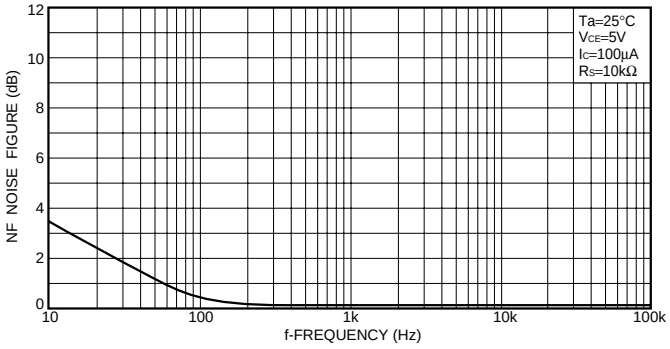


Fig.18 Noise vs. collector current

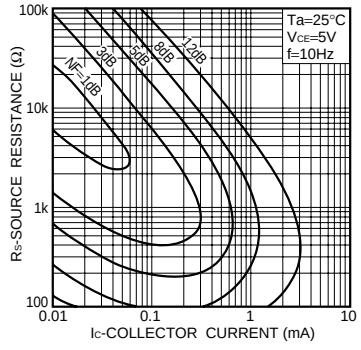


Fig.19 Noise characteristics (Ⅰ)

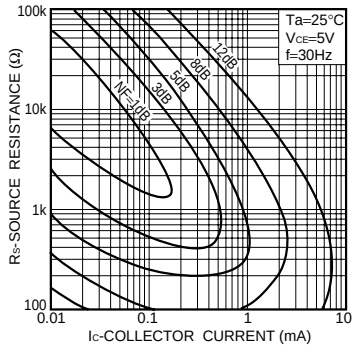


Fig.20 Noise characteristics (Ⅱ)

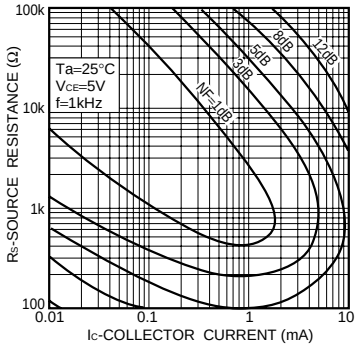


Fig.21 Noise characteristics (Ⅲ)

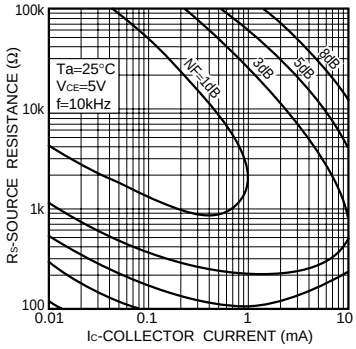


Fig.22 Noise characteristics (Ⅳ)

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