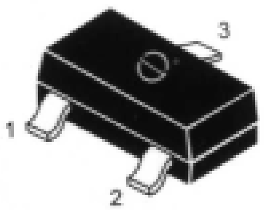
BC846A-BC848C

NPN EPITAXIAL SILICON TRANSISTOR

SURFACE MOUNT SMALL SIGNAL TRANSISTORS

* Epitaxial Die Construction
* Ideally Suited Automatic Insertion
* 310mW Power Dissipation
* Complementary PNP types Available(BC856-BC858)
* For Switching and AF Amplifier Applications

Package:SOT-23



PIN: / STYLE	1	2	3
NO.1	B	E	C

ABSOLUTE MAXIMUM RATINGS at Ta=25℃

Characteristic		Symbol	Rating	Unit
Collector-Base Voltage	BC846	Vcbo	80	V
	BC847		50	
	BC848		30	
Collector-Emitter Voltage	BC846	Vceo	65	V
	BC847		45	
	BC848		30	
Emitter-Base Voltage	BC846	Vebo	6.0	V
	BC847		6.0	
	BC848		5.0	
Collector Current		Ic	100	mA
Collector Dissipation Ta=25℃*		P_D	310	mW
Junction Temperature		Tj	150	℃
Storage Temperature		Tstg	-65-150	℃

ELECTRICAL CHARACTERISTICS at Ta=25℃

Characteristic		Symbol	Min	Typ	Max	Unit	Test Conditions
Collector-Base Breakdown Voltage	BC846	BVcbo	80			V	Ic=10uA Ie=0
	BC847		50				
	BC848		-30				
Collector-Emitter Breakdown Voltage	BC846	BVceo	65			V	Ic= 10mA Ib=0
	BC847		45				
	BC848		30				
Collector-Emitter Saturation Voltage		Vce(sat)		90	250	mV	Ic=10mA Ib=0.5mA
				200	600		Ic=100mA Ib=5.0mA
Base-Emitter Saturation Voltage		Vbe(sat)		700		mV	Ic=10mA Ib=0.5mA
				900			Ic=100mA Ib=5.0mA
Base-Emitter Voltage		Vbe	580	660	770	mV	Vce=5.0V Ic=2.0mA
					720		Vce=5.0V Ic=10mA

SURFACE MOUNT SMALL SIGNAL TRANSISTORS

ELECTRICAL CHARACTERISTICS at Ta=25℃(CONTINUED)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Conditions
DC Current Gain Current Gain GroupA			90			
B			150			Vce=5.0V Ic=10uA
C	H_{FE}		270			Vce=5.0V Ic=2.0mA
Current Gain GroupA		110	180	220		
B		200	290	450		
C		420	520	800		
Collector-Emitter Cutoff Current BC846	I_{CES}		0.2	15	nA	Vce=80V
BC847	I_{CES}		0.2	15	nA	Vce=50V
BC848	I_{CES}		0.2	15	nA	Vce=30V
BC846	I_{CES}			4.0	uA	Vce=80V ,Tj=125℃
BC847	I_{CES}			4.0	uA	Vce=50V ,Tj=125℃
BC848	I_{CES}			4.0	uA	Vce=30V ,Tj=125℃
	I_{CBO}			15	nA	Vcb=30V
	I_{CBO}			5.0	uA	Vcb=30V ,Tj=125℃
Collector-Base Capacitance	Ccbo		3.5	6.0	PF	Vcb=10V f=1MHz
Emitter-Base Capacitance	Cebo		9.0		PF	Veb=0.5V f=1MHz
Gain Bandwidth Product	fT		300		MHz	Vce=5V Ic=10mA f=100MHz
Noise Figure	NF		2.0	10	dB	Vce=5V Ic=200uA R_G=2KΩ f=1MHz △f=200Hz

* Total Device Dissipation : FR=1X0.75X0.062in Board,Derate 25℃.

\# Pulse Test : Pulse Width ≤300uS,Duty cycle ≤2%

DEVICE MARKING:

BC846ALT1=1A

BC846BLT1=1B

BC847ALT1=1E

BC847BLT1=1F

BC847CLT1=1G

BC848ALT1=1J

BC848BLT1=1K

BC848CLT1=1L

BC847BLT1

Fig.1 Grounded emitter propagation characteristics

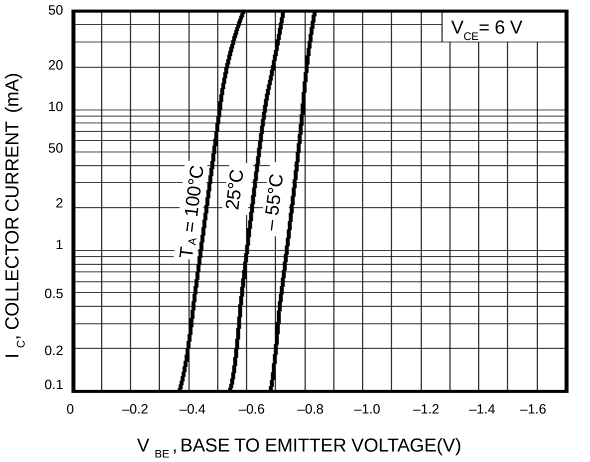


Fig.2 Grounded emitter output characteristics(Ⅰ)

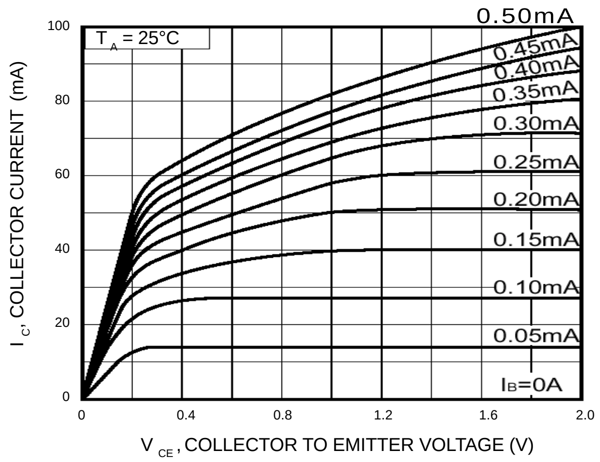


Fig.3 Grounded emitter output characteristics(Ⅱ)

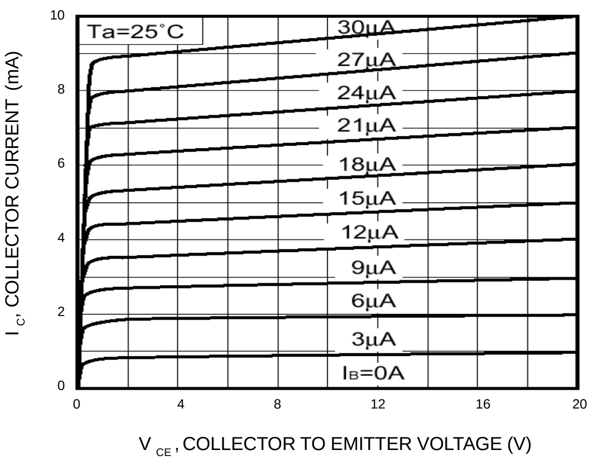


Fig.4 DC current gain vs. collector current (Ⅰ)

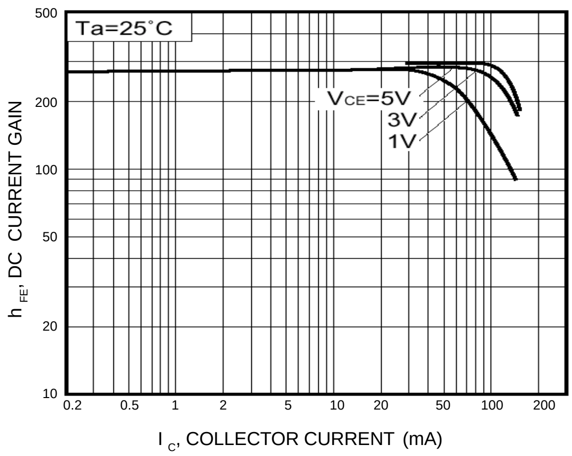


Fig.5 DC current gain vs. collector current (Ⅱ)

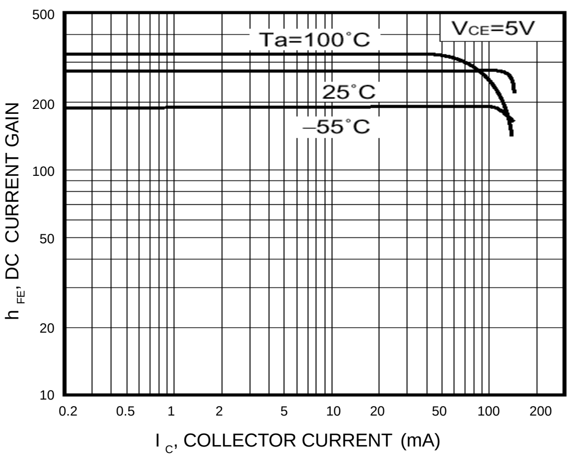


Fig.6 Collector-emitter saturation voltage vs. collector current

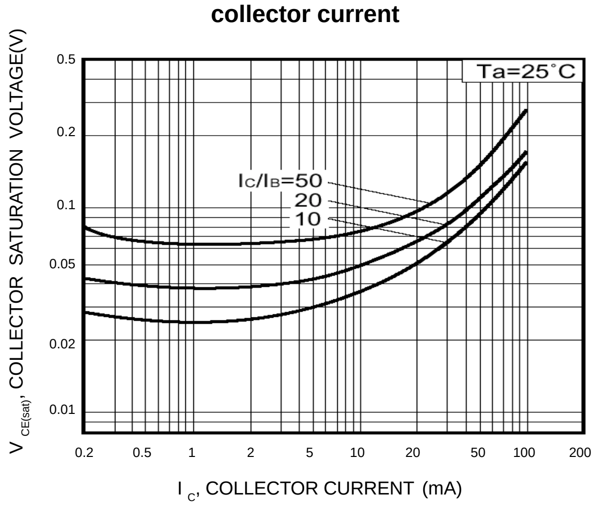


Fig.7 Collector-emitter saturation voltage vs. collector current (Ⅰ)

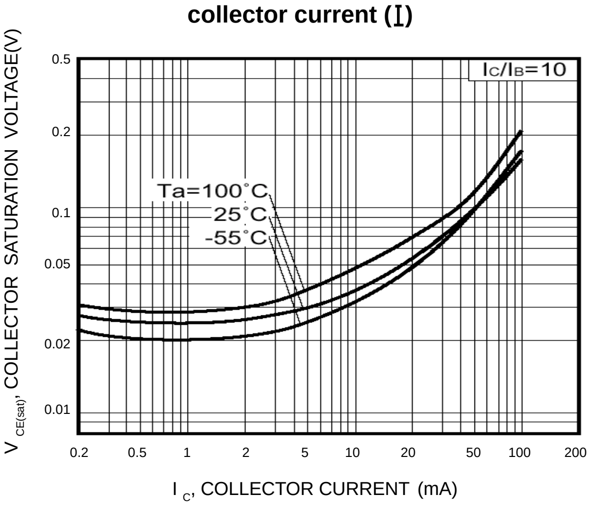


Fig.8 Collector-emitter saturation voltage vs. collector current (Ⅱ)

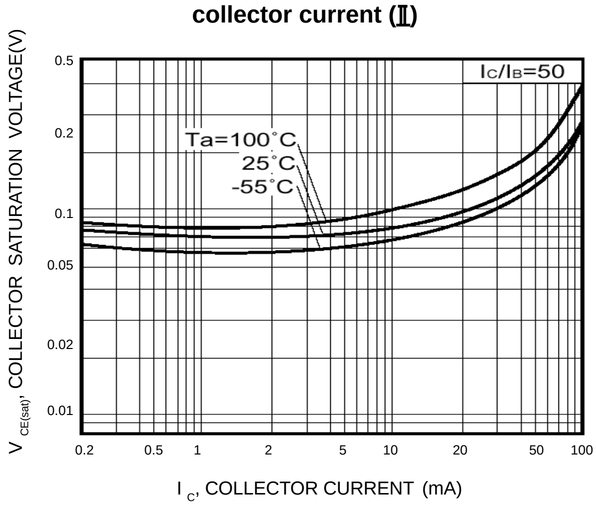


Fig.9 Gain bandwidth product vs. emitter current

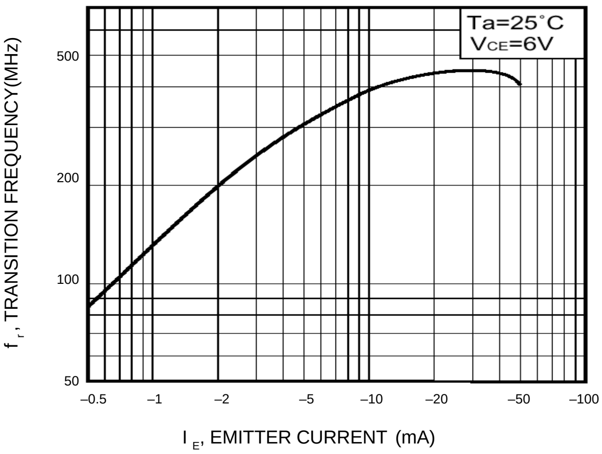


Fig.10 Collector output capacitance vs.collector-base voltage Emitter inputcapacitance vs. emitter-base voltage

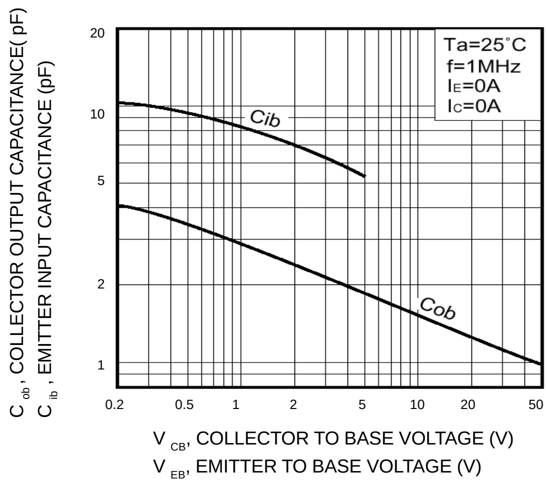


Fig.11 Base-collector time constant vs.emitter current