

Small Signal Product

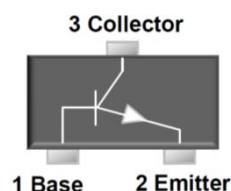
NPN Small Signal Transistor

FEATURES

- Epitaxial planar die construction
- Surface mount device type
- Moisture sensitivity level 1
- Matte Tin(Sn) lead finish with Nickel(Ni) underplate
- Pb free and RoHS compliant
- Green compound (Halogen free) with suffix "G" on packing code and prefix "G" on date code

MECHANICAL DATA

- Case: SOT- 23 small outline plastic package
- Terminal: Matte tin plated, lead free, solderable per MIL-STD-202, Method 208 guaranteed
- High temperature soldering guaranteed: 260°C/10s
- Weight: 0.008gram (approximately)



SOT-23

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

PARAMETER		SYMBOL	VALUE	UNIT
Power dissipation		P _D	200	mW
Collector-Base Voltage	BC846	V _{CBO}	80	V
	BC847		50	
	BC848		30	
Collector-Emitter Voltage	BC846	V _{CEO}	65	V
	BC847		45	
	BC848		30	
Emitter-Base Voltage	BC846	V _{EBO}	6	V
	BC847		6	
	BC848		5	
Collector Current		I _C	0.1	A
Junction and Storage Temperature Range		T _J , T _{STG}	-55 to + 150	°C

Notes: 1. Valid provided that electrodes are kept at ambient temperature

PARAMETER				SYMBOL	MIN	MAX	UNIT	
Collector-Base Breakdown Voltage	BC846	I _C = 10μA	I _E = 0	V _{(BR)CBO}	80	-	V	
	BC847				50			
	BC848				30			
Collector-Emitter Breakdown Voltage	BC846	I _C = 10mA	I _B = 0	V _{(BR)CEO}	65	-	V	
	BC847				45			
	BC848				30			
Emitter-Base Breakdown Voltage	BC846	I _E = 1μA	I _C = 0	V _{(BR)EBO}	6	-	V	
	BC847				6			
	BC848				5			
Collector Cut-off Current		V _{CB} = 30V	I _E = 0	I _{CBO}	-	100	nA	
Emitter Cut-off Current		V _{EB} = 5 V	I _C =0	I _{EBO}	-	0.1	μA	
DC Current Gain	BC846A, BC847A, BC848A		V _{CE} = 5V	I _C = 2mA	h _{FE}	110	220	
	BC846B, BC847B, BC848B					200	450	
	BC847C, BC848C					420	800	
Collector-Emitter Saturation Voltage		I _C = 100mA	I _B = 5mA	V _{CE(sat)}	-	0.5	V	
Base-Emitter Saturation Voltage		I _C = 100mA	I _B = 5mA	V _{BE(sat)}	-	1.1	V	
Transition frequency		V _{CE} = 5V	I _C = 10 mA	f= 100MHz	f _T	100	-	MHz

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RATINGS AND CHARACTERISTICS CURVES (BC846A/B, BC847A/B/C, BC848A/B/C)

(TA=25°C unless otherwise noted)

Fig.1 Static Characteristic

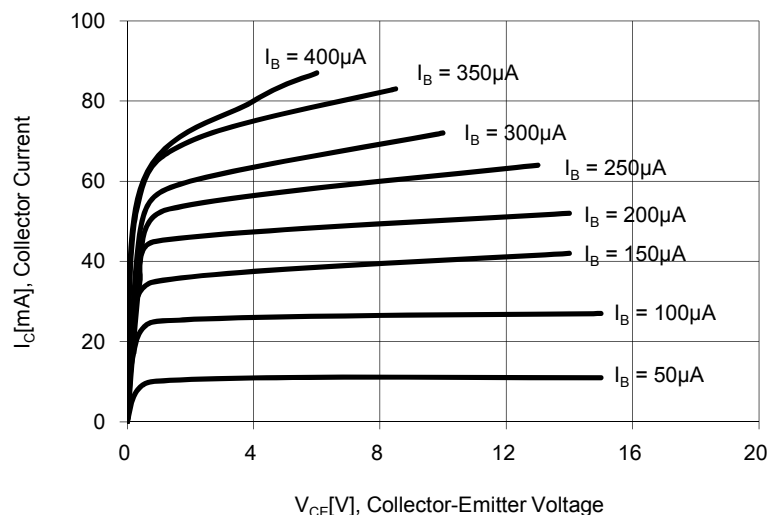


Fig.2 DC Current Gain

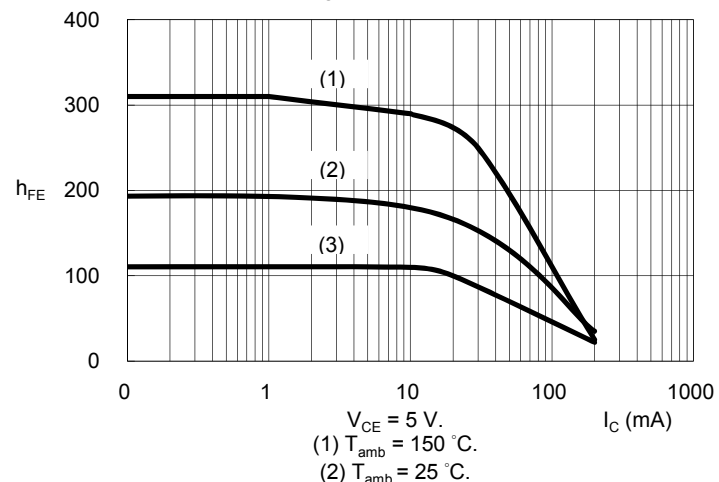


Fig.3 Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

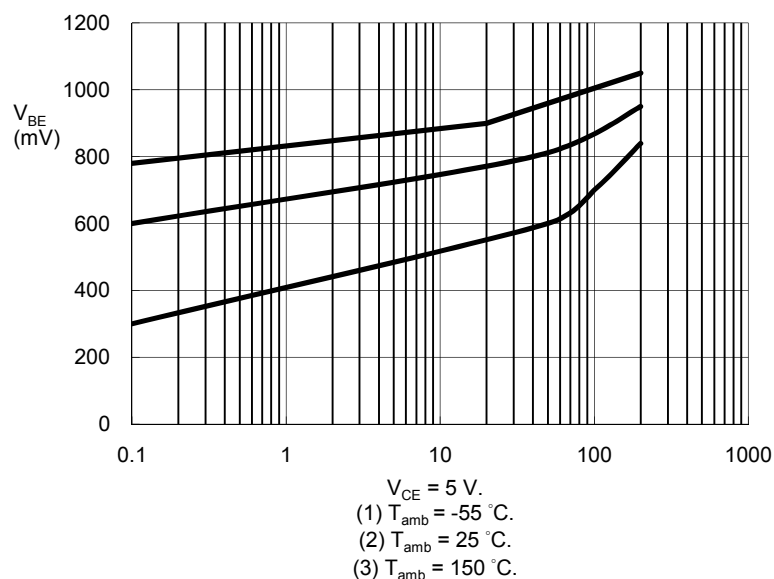


Fig. 4 Base-Emitter On Voltage

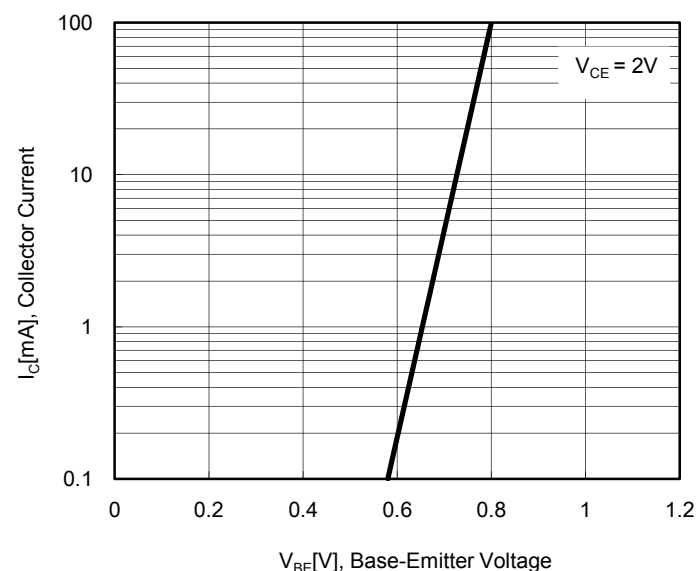


Fig.5 Collector Output Capacitance

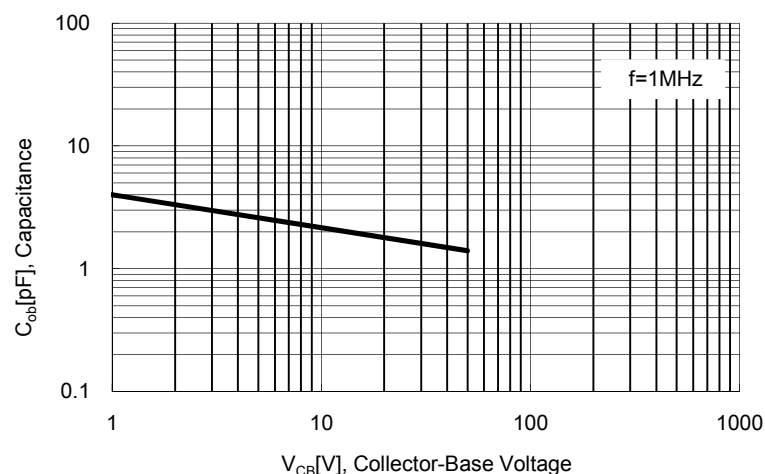
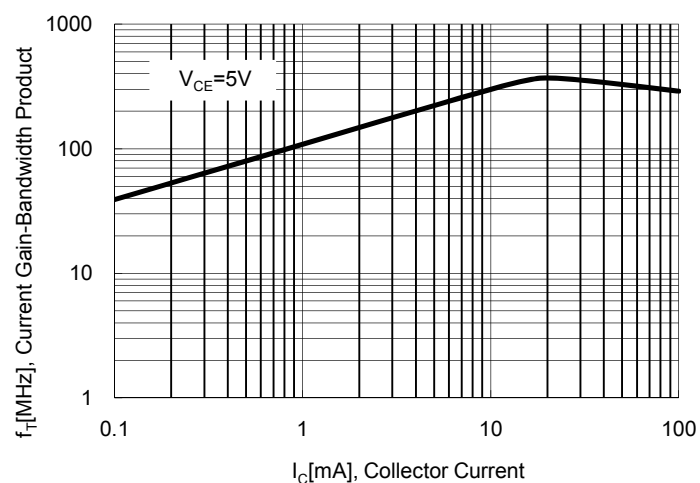


Fig. 6 Current Gain Bandwidth Product



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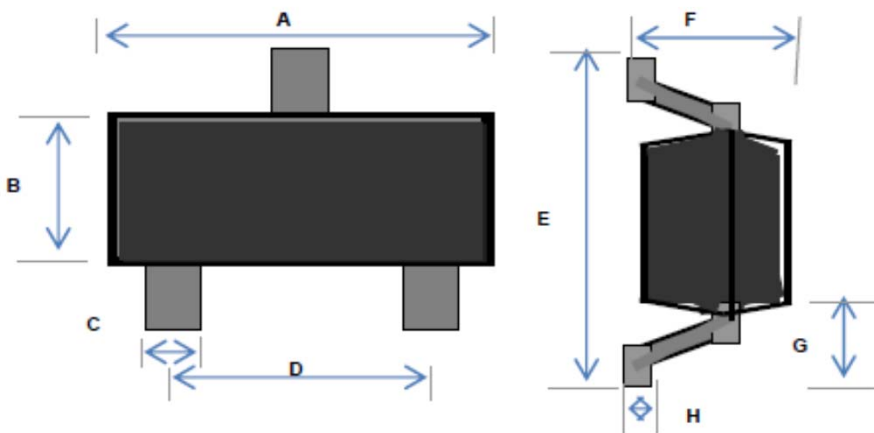
ORDERING INFORMATION						
PART NO.	MANUFACTURE CODE	PACKING CODE	GREEN COMPOUND CODE	PACKAGE	PACKING	MARKING
BC846A	(Note)	RF	G	SOT-23	3K / 7" Reel	1A
BC846B		RF	G	SOT-23	3K / 7" Reel	1B
BC847A		RF	G	SOT-23	3K / 7" Reel	1E
BC847B		RF	G	SOT-23	3K / 7" Reel	1F
BC847C		RF	G	SOT-23	3K / 7" Reel	1G
BC848A		RF	G	SOT-23	3K / 7" Reel	1J
BC848B		RF	G	SOT-23	3K / 7" Reel	1K
BC848C		RF	G	SOT-23	3K / 7" Reel	1L

Note: Manufacture special control, if empty means no special control requirement.

EXAMPLE					
PREFERRED P/N	PART NO.	MANUFACTURE CODE	PACKING CODE	GREEN COMPOUND CODE	DESCRIPTION
BC846A RFG	BC846A		RF	G	Green compound
BC846A-D0 RFG	BC846A	D0	RF	G	Green compound

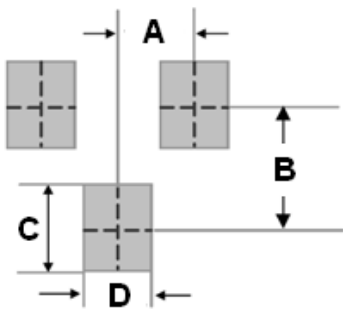
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DIMENSIONS



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	2.70	3.10	0.106	0.122
B	1.10	1.50	0.043	0.059
C	0.30	0.51	0.012	0.020
D	1.78	2.04	0.070	0.080
E	2.10	2.64	0.083	0.104
F	0.89	1.30	0.035	0.051
G	0.55 REF		0.022 REF	
H	0.1 REF		0.004 REF	

SUGGEST PAD LAYOUT



DIM.	Unit(mm)	Unit(inch)
	Typ.	Typ.
A	0.95	0.037
B	2.0	0.079
C	0.9	0.035
D	0.8	0.031

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