

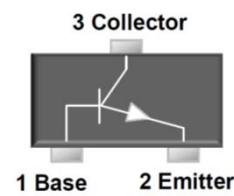
Small Signal Product

200mW, 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) under plate
- Pb free and RoHS compliant
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21


SOT-23
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: 8mg (approximately)



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 _{CB0}	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	V _{(BR)CBO}	80	-	V				
	BC847		I _C = 10μA			I _E = 0	50		
	BC848						30		
Collector-Emitter Breakdown Voltage	BC846	V _{(BR)CEO}	65	-	V				
	BC847		I _C = 10mA			I _B = 0	45		
	BC848						30		
Emitter-Base Breakdown Voltage	BC846	V _{(BR)EBO}	6	-	V				
	BC847		I _E = 1μA			I _C = 0	6		
	BC848						5		
Collector Cut-off Current			V _{CB} = 30V	I _E = 0	I _{CB0}	-	100	nA	
Emitter Cut-off Current			V _{EB} = 5 V	I _C =0	I _{EBO}	-	0.1	μA	
DC Current Gain	BC846A, BC847A, BC848A	h _{FE}			110	220			
	BC846B, BC847B, BC848B		V _{CE} = 5V	I _C = 2mA	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

($T_A=25^\circ\text{C}$ unless otherwise noted)

Fig.1 Static Characteristic

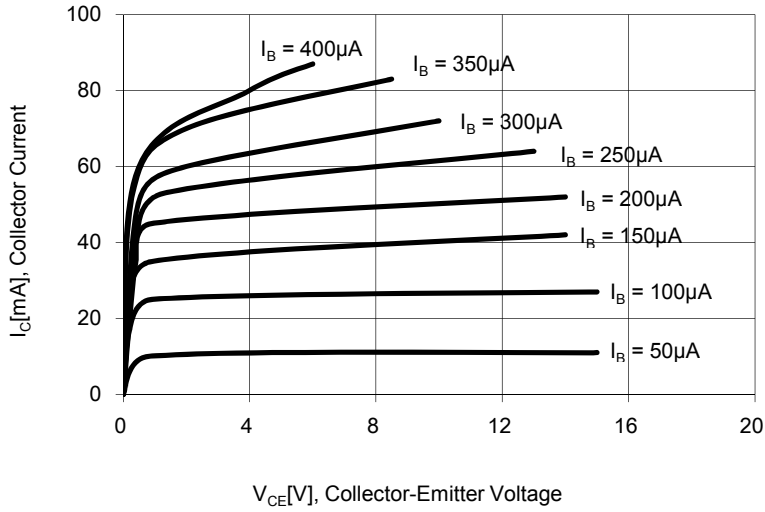


Fig.2 DC Current Gain

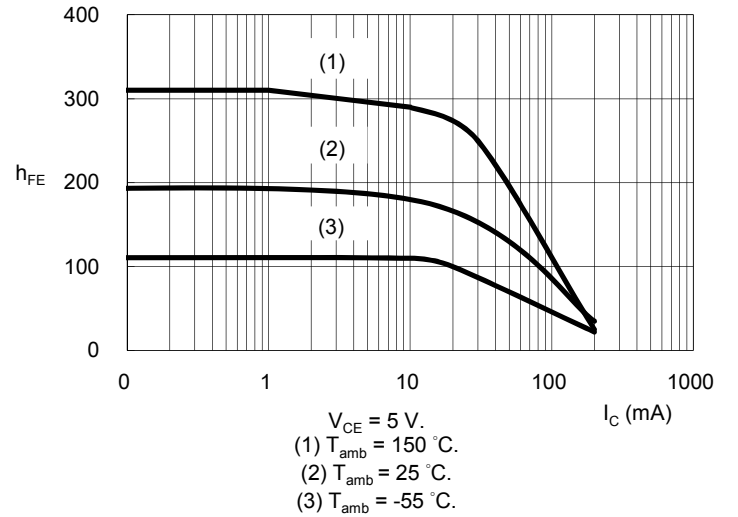


Fig.3 Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

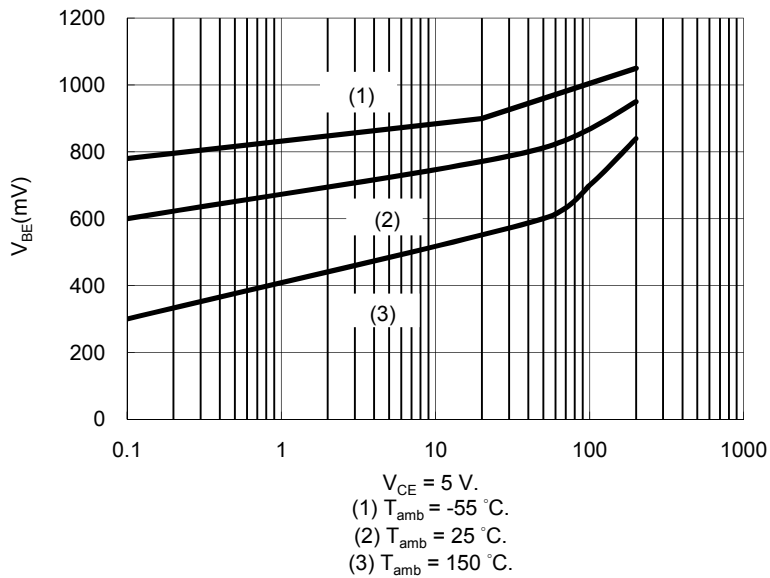


Fig. 4 Base-Emitter On Voltage

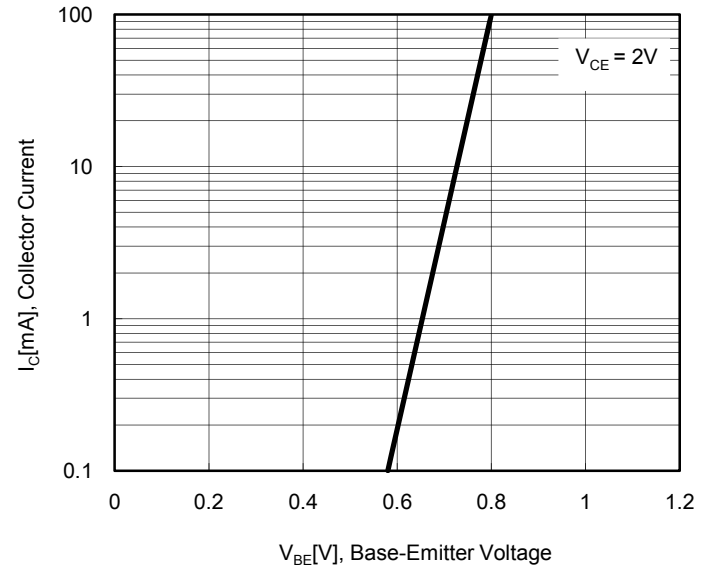


Fig.5 Collector Output Capacitance

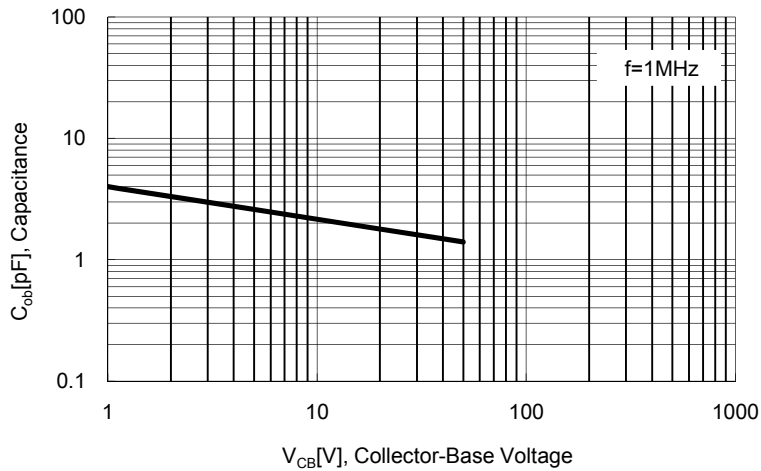
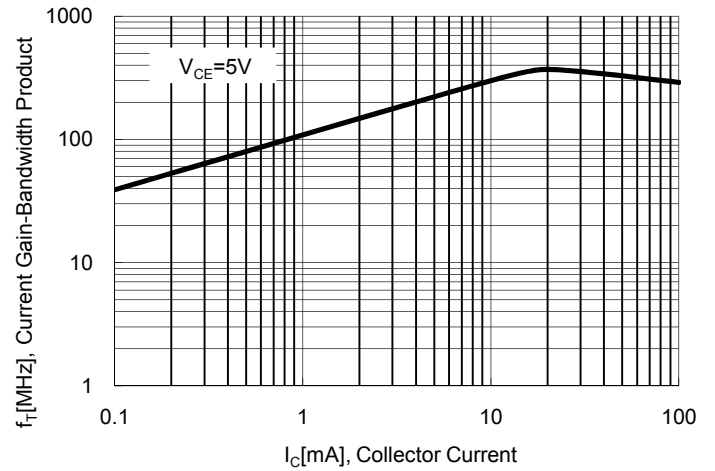


Fig. 6 Current Gain Bandwidth Product



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ORDERING INFORMATION

PART NO.	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
BC84xx (Note 1)	RF	G	SOT-23	3K / 7" Reel
	R5			10K / 13" Reel

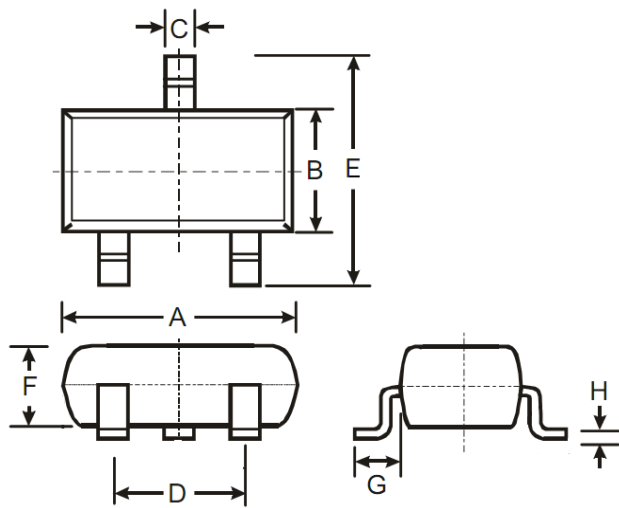
Note 1: "xx" is device code from "BC846A" ~ "BC848C", detail could follow the previous page

EXAMPLE

EXAMPLE P/N	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
BC846A RFG	BC846A	RF	G	Green compound

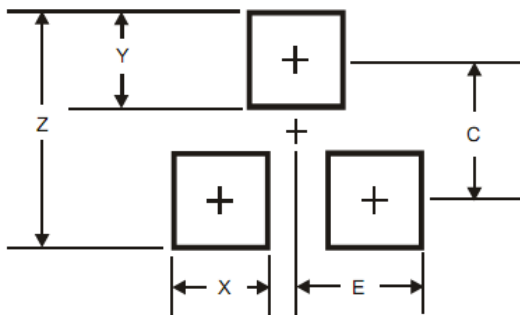
DIMENSIONS

SOT-23



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.
Z	2.90	0.114
X	0.80	0.031
Y	0.90	0.035
C	2.00	0.079
E	1.35	0.053

MARKING CODE

PART NO.	MARKING
BC846A	1A
BC846B	1B
BC847A	1E
BC847B	1F
BC847C	1G
BC848A	1J
BC848B	1K
BC848C	1L

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