



DESCRIPTION

The BC846_BC847_BC848_BC849_BC850 are available in SOT-323 package.

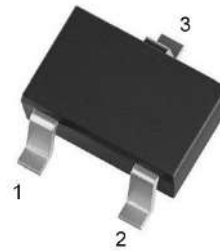
APPLICATION

For general purpose and switching applications.

ORDERING INFORMATION

Package Type	Part Number
SOT-323	BC846AW
	BC846BW
	BC846CW
	BC847AW
	BC847BW
	BC847CW
	BC848AW
	BC848BW
	BC848CW
	BC849AW
	BC849BW
	BC849CW
	BC850AW
	BC850BW
BC850CW	
SPQ	3,000pcs/Reel
AiT provides all RoHS Compliant Products	

PIN DESCRIPTION



SOT-323

PIN#	DESCRIPTION
1	Base
2	Emitter
3	Collector



ABSOLUTE MAXIMUM RATINGS

T_A = 25°C, unless otherwise specified.

Parameter		Value
V _{CBO} , Collector Base Voltage	BC846	80V
	BC847	50V
	BC848	30V
	BC849	30V
	BC850	50V
V _{CEO} , Collector Emitter Voltage	BC846	65V
	BC847	45V
	BC848	30V
	BC849	30V
	BC850	45V
V _{EBO} , Emitter Base Voltage	BC846	6V
	BC847	6V
	BC848	5V
	BC849	5V
	BC850	5V
I _C , Collector Current		100mA
I _{CM} , Peak Collector Current		200mA
P _{tot} , Total Power Dissipation		200mW
T _J , Junction Temperature		150°C
T _{stg} , Storage Temperature Range		-55°C ~ +150°C

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.



ELECTRICAL CHARACTERISTICS

T_A=25°C unless otherwise specified.

Parameter	Symbol	Conditions	Min.	Max.	Unit	
DC Current Gain	h _{FE}	V _{CE} = 5 V, I _C = 2 mA	BC846AW~BC850AW	110	220	-
			BC846BW~BC850BW	200	450	-
			BC846CW~BC850CW	420	800	-
Collector Base Voltage	V _{CBO}	I _C = 10 μA	BC846	80	-	V
			BC847	50	-	
			BC848	30	-	
			BC849	30	-	
			BC850	50	-	
Collector Emitter Voltage	V _{CEO}	I _C = 10 mA	BC846	65	-	V
			BC847	45	-	
			BC848	30	-	
			BC849	30	-	
			BC850	45	-	
Emitter Base Voltage	V _{EBO}	I _E = 1 μA	BC846	6	-	V
			BC847	6	-	
			BC848	5	-	
			BC849	5	-	
			BC850	5	-	
Collector Base Cutoff Current	I _{CBO}	V _{CB} = 30 V	-	15	nA	
Emitter Base Cutoff Current	I _{EBO}	V _{EB} = 5 V	-	100	nA	
Collector Emitter Saturation Voltage	V _{CE(sat)}	I _C = 10 mA, I _B = 0.5 mA	-	0.25	V	
		I _C = 100 mA, I _B = 5 mA	-	0.60		
Base Emitter Voltage	V _{BE}	V _{CE} = 5 V, I _C = 2 mA	0.58	0.70	V	
		V _{CE} = 5 V, I _C = 10 mA	-	0.77		
Transition Frequency	f _T	V _{CE} = 5 V, I _C = 10 mA, f = 100 MHz	100	-	MHz	
Collector Output Capacitance	C _{ob}	V _{CB} = 10 V, I _E = 0, f = 1 MHz	-	4.5	pF	



TYPICAL CHARACTERISTICS

Fig 1. Normalized DC Current Gain

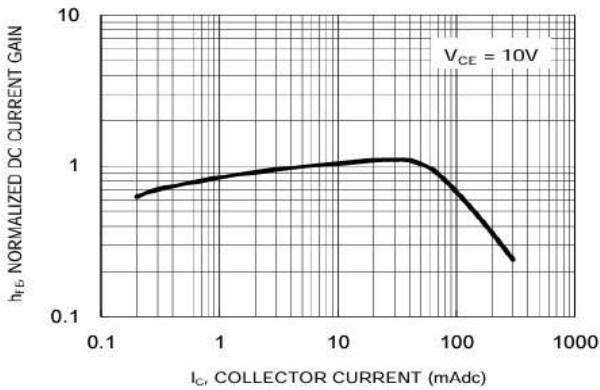


Fig 2. "Saturation" and "On" Voltages

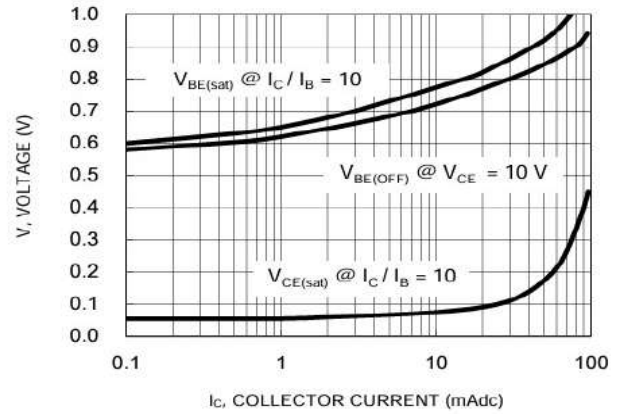


Fig 3. Collector Saturation Region

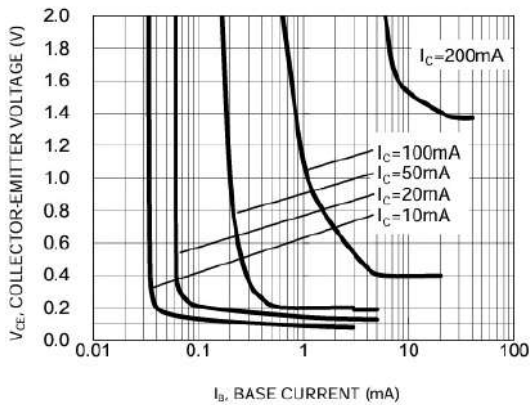


Fig 4. Base-Emitter Current (mA)

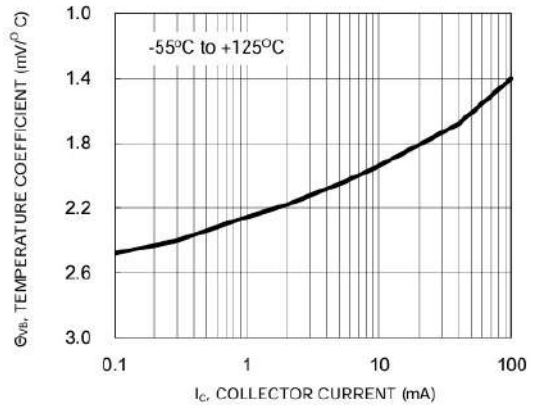


Fig 5. Capacitances

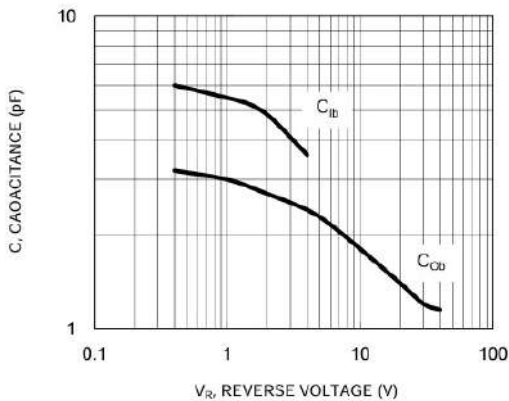


Fig 6. Current-Gain-Bandwidth Product

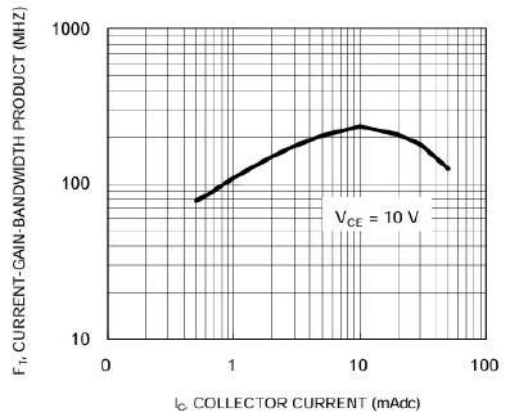




Fig 7. DC Collector Current (mA)

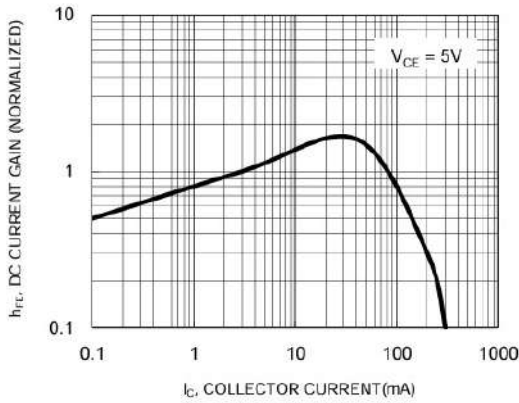


Fig 8. "On" Voltages

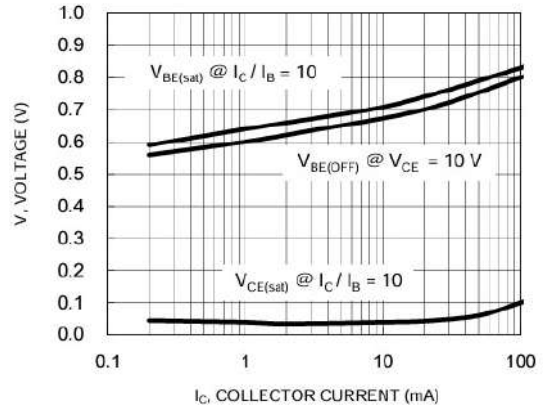


Fig 9. Collector Saturation Region

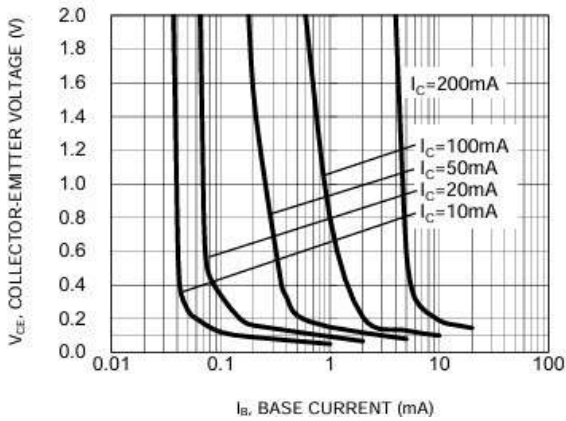


Fig 10. Base-Emitter Temperature Coefficient

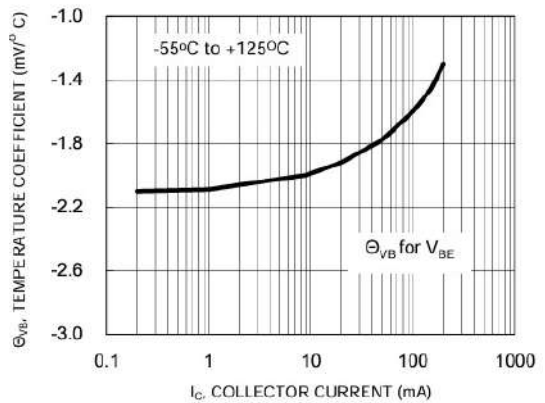


Fig 11. Capacitances

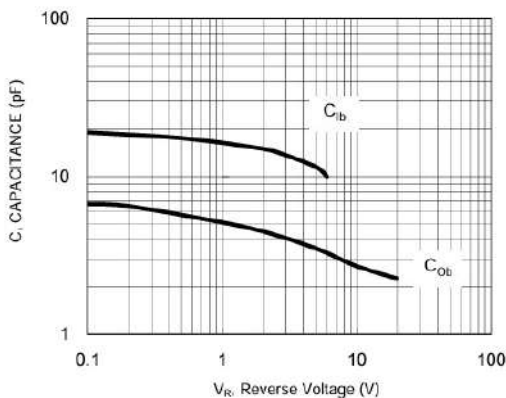
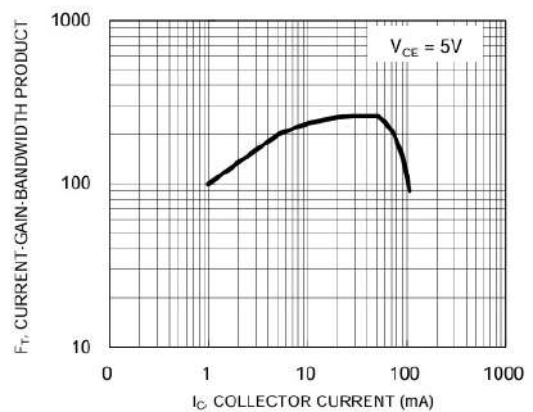


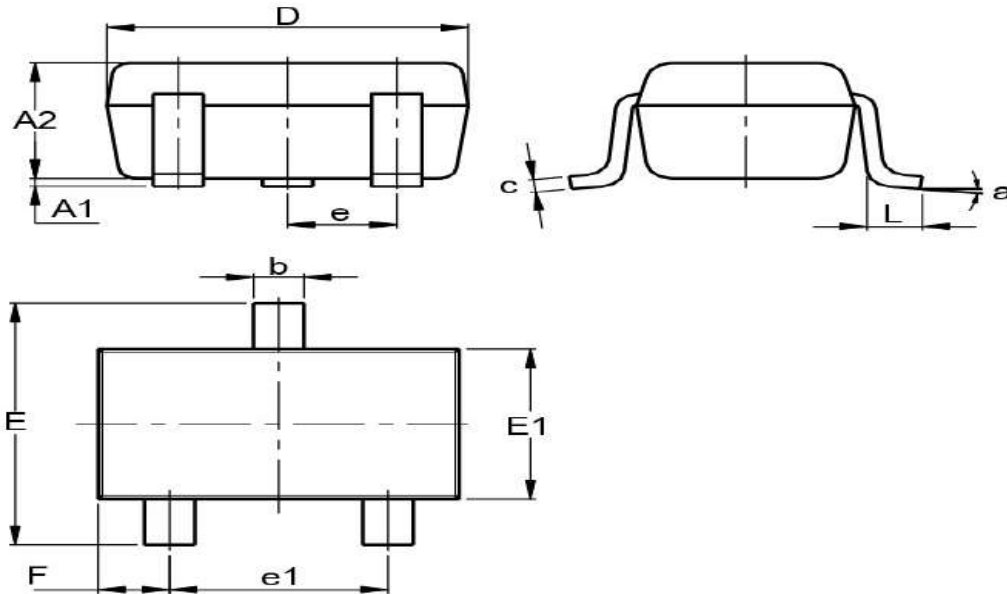
Fig 12. Current-Gain-Bandwidth Product





PACKAGE INFORMATION

Dimension in SOT-323 (Unit: mm)



Symbol	Millimeter	
	Min.	Max.
A1	0.000	0.100
A2	0.800	1.000
b	0.200	0.400
c	0.080	0.180
D	1.000	2.220
E	2.000	2.450
E1	1.150	1.350
e	0.650 TYP.	
e1	1.200	1.400
F	0.250	0.475
L	0.250	0.460
a	0°	8°



IMPORTANT NOTICE

AiT Semiconductor Inc. (AiT) reserves the right to make changes to any its product, specifications, to discontinue any integrated circuit product or service without notice, and advises its customers to obtain the latest version of relevant information to verify, before placing orders, that the information being relied on is current.

AiT Semiconductor Inc. integrated circuit products are not designed, intended, authorized, or warranted to be suitable for use in life support applications, devices or systems or other critical applications. Use of AiT products in such applications is understood to be fully at the risk of the customer. As used herein may involve potential risks of death, personal injury, or server property, or environmental damage. In order to minimize risks associated with the customer's applications, the customer should provide adequate design and operating safeguards.

AiT Semiconductor Inc. assumes to no liability to customer product design or application support. AiT warrants the performance of its products of the specifications applicable at the time of sale.