



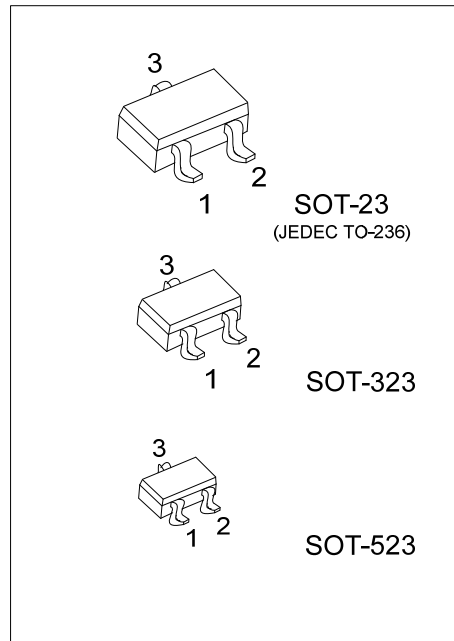
BC846-BC850

NPN SILICON TRANSISTOR

SWITCHING AND AMPLIFIER APPLICATION

■ FEATURES

- * Suitable for automatic insertion in thick and thin-film circuits.
- * Complement to BC856 ... BC860



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
BC846L-x-AE3-R	BC846G-x-AE3-R	SOT-23	B	E	C	Tape Reel
BC847L-x-AE3-R	BC847G-x-AE3-R	SOT-23	B	E	C	Tape Reel
BC848L-x-AE3-R	BC848G-x-AE3-R	SOT-23	B	E	C	Tape Reel
BC849L-x-AE3-R	BC849G-x-AE3-R	SOT-23	B	E	C	Tape Reel
BC850L-x-AE3-R	BC850G-x-AE3-R	SOT-23	B	E	C	Tape Reel
BC846L-x-AL3-R	BC846G-x-AL3-R	SOT-323	B	E	C	Tape Reel
BC847L-x-AL3-R	BC847G-x-AL3-R	SOT-323	B	E	C	Tape Reel
BC848L-x-AL3-R	BC848G-x-AL3-R	SOT-323	B	E	C	Tape Reel
BC849L-x-AL3-R	BC849G-x-AL3-R	SOT-323	B	E	C	Tape Reel
BC850L-x-AL3-R	BC850G-x-AL3-R	SOT-323	B	E	C	Tape Reel
BC846L-x-AN3-R	BC846G-x-AN3-R	SOT-523	B	E	C	Tape Reel
BC847L-x-AN3-R	BC847G-x-AN3-R	SOT-523	B	E	C	Tape Reel
BC848L-x-AN3-R	BC848G-x-AN3-R	SOT-523	B	E	C	Tape Reel
BC849L-x-AN3-R	BC849G-x-AN3-R	SOT-523	B	E	C	Tape Reel
BC850L-x-AN3-R	BC850G-x-AN3-R	SOT-523	B	E	C	Tape Reel

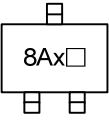
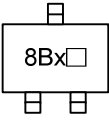
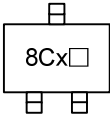
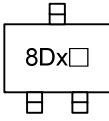
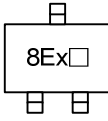
Note: Pin Assignment: B: Base E: Emitter C: Collector

<p>BC846G-x-AE3-R</p> <p>(1)Packing Type (2)Package Type (3)Rank (4)Green Package</p>	<p>(1) R: Tape Reel (2) AE3: SOT-23, AL3: SOT-323, AN3: SOT-523 (3) x: refer to Classification of h_{FE} (4) G: Halogen Free and Lead Free, L: Lead Free</p>
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BC846-BC850

NPN SILICON TRANSISTOR

MARKING

BC846	BC847	BC848	BC849	BC850
				

x: Rank Code, refer to Classification of h_{FE}

□: G: Halogen Free and Lead Free, L: Lead Free

BC846-BC850

NPN SILICON TRANSISTOR

■ ABSOLUTE MAXIMUM RATING ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	VALUE	UNIT	
Collector-Base Voltage	V_{CBO}	BC846	80	V
		BC847 / BC850	50	V
		BC848 / BC849	30	V
Collector-Emitter Voltage	V_{CEO}	BC846	65	V
		BC847 / BC850	45	V
		BC848 / BC849	30	V
Emitter-Base Voltage	V_{EBO}	BC846 / BC847	6	V
		BC848 / BC849 / BC850	5	V
Collector Current (DC)	I_C	Continuous	100	mA
		Peak (1)	300	mA
Collector Dissipation	P_D	SOT-23	310	mW
		SOT-323	200	mW
		SOT-523	150	mW
Junction Temperature	T_J	+150	$^{\circ}\text{C}$	
Storage Temperature	T_{STG}	-40 ~ +150	$^{\circ}\text{C}$	

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

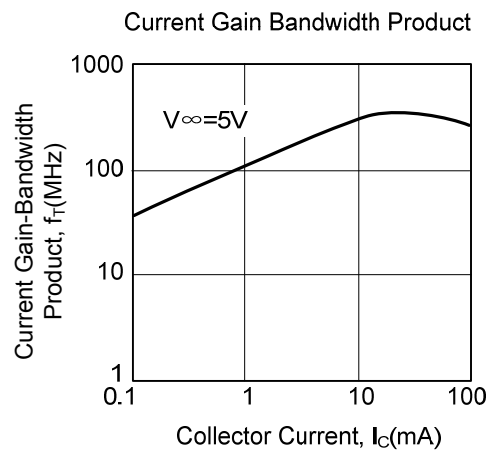
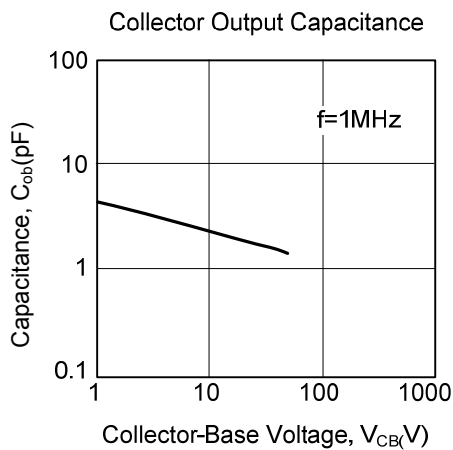
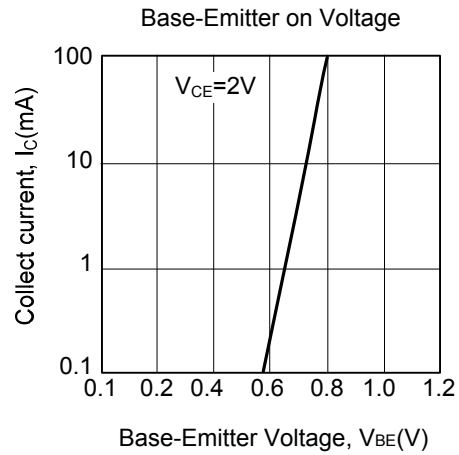
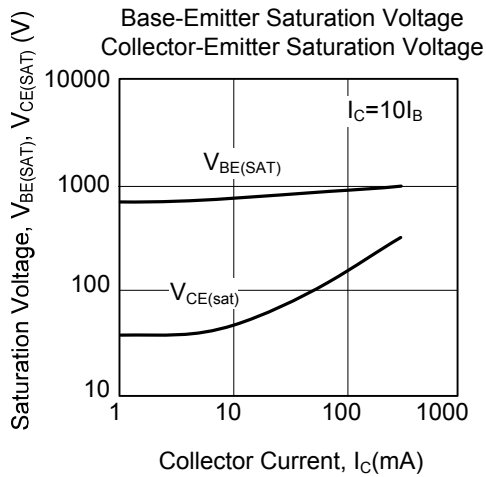
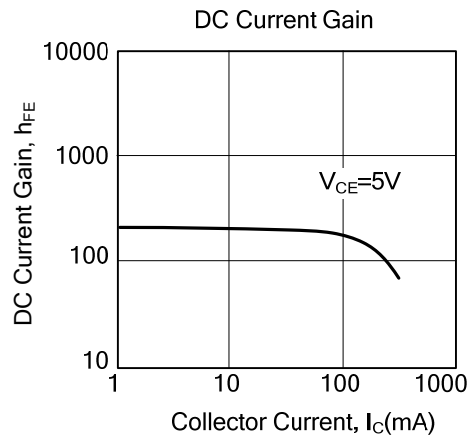
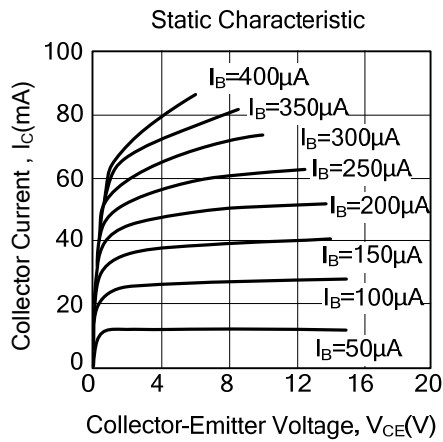
■ ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C=10\mu\text{A}, I_E=0$	50			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=2\text{mA}, I_B=0$	45			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=10\mu\text{A}, I_C=0$	6			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=30\text{V}, I_E=0$			15	nA
Collector Cutoff Current	I_{CEO}	$V_{CE}=40\text{V}$			100	nA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5\text{V}$			100	nA
DC Current Gain	h_{FE}	$V_{CE}=5.0\text{V}, I_C=2.0\text{mA}$	110		800	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=0.5\text{mA}$		90	250	mV
		$I_C=100\text{mA}, I_B=5.0\text{mA}$		200	600	mV
Collector-Base Saturation Voltage	$V_{BE(SAT)}$	$I_C=10\text{mA}, I_B=0.5\text{mA}$		700		mV
		$I_C=100\text{mA}, I_B=5.0\text{mA}$		900		mV
Base-Emitter On Voltage	$V_{BE(ON)}$	$V_{CE}=5.0\text{V}, I_C=2.0\text{mA}$	580	660	700	mV
		$V_{CE}=5.0\text{V}, I_C=10\text{mA}$			720	mV
Current Gain Bandwidth Product	f_T	$V_{CE}=5.0\text{V}, I_C=10\text{mA}, f=100\text{MHz}$		300		MHz
Output Capacitance	C_{OB}	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$		3.5	6	pF
Input Capacitance	C_{IB}	$V_{EB}=0.5\text{V}, I_C=0, f=1.0\text{MHz}$		9		pF
Noise Figure	NF	$V_{CE}=5\text{V}, I_C=200\mu\text{A}, f=1\text{KHz}, R_G=2\text{K}\Omega$	BC846/BC847/BC848	2	10	dB
			BC849/BC850	1.2	4	dB
			BC849	1.4	4	dB
			BC850	1.4	3	dB

■ CLASSIFICATION OF h_{FE}

RANK	A	B	C
RANGE	110-220	200-450	420-800

TYPICAL CHARACTERISTICS



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.