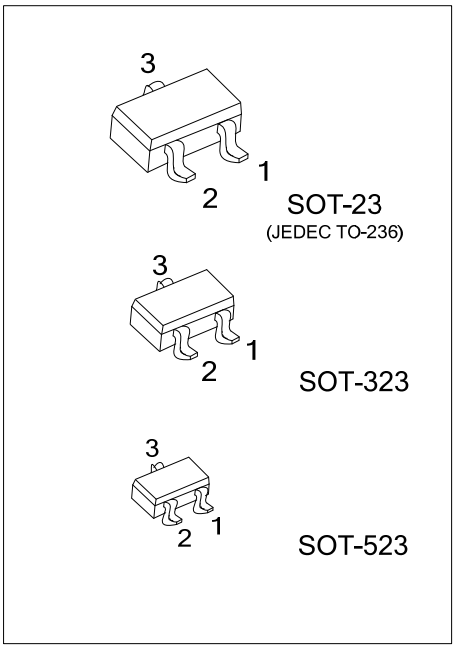
BC846-BC850

NPN SILICON TRANSISTOR

SWITCHING AND AMPLIFIER APPLICATION



■ FEATURES

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

■ ORDERING INFORMATION

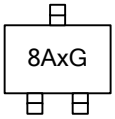
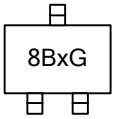
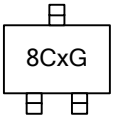
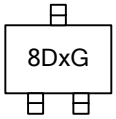
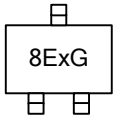
Ordering Number	Package	Pin Assignment			Packing
		1	2	3	
BC846G-x-AE3-R	SOT-23	E	B	C	Tape Reel
BC847G-x-AE3-R	SOT-23	E	B	C	Tape Reel
BC848G-x-AE3-R	SOT-23	E	B	C	Tape Reel
BC849G-x-AE3-R	SOT-23	E	B	C	Tape Reel
BC850G-x-AE3-R	SOT-23	E	B	C	Tape Reel
BC846G-x-AL3-R	SOT-323	E	B	C	Tape Reel
BC847G-x-AL3-R	SOT-323	E	B	C	Tape Reel
BC848G-x-AL3-R	SOT-323	E	B	C	Tape Reel
BC849G-x-AL3-R	SOT-323	E	B	C	Tape Reel
BC850G-x-AL3-R	SOT-323	E	B	C	Tape Reel
BC846G-x-AN3-R	SOT-523	E	B	C	Tape Reel
BC847G-x-AN3-R	SOT-523	E	B	C	Tape Reel
BC848G-x-AN3-R	SOT-523	E	B	C	Tape Reel
BC849G-x-AN3-R	SOT-523	E	B	C	Tape Reel
BC850G-x-AN3-R	SOT-523	E	B	C	Tape Reel

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

BC846G-x-AE3-R

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

■ MARKING

BC846	BC847	BC848	BC849	BC850
				

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

■ ABSOLUTE MAXIMUM RATING (T_A=25°C, unless otherwise specified)

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

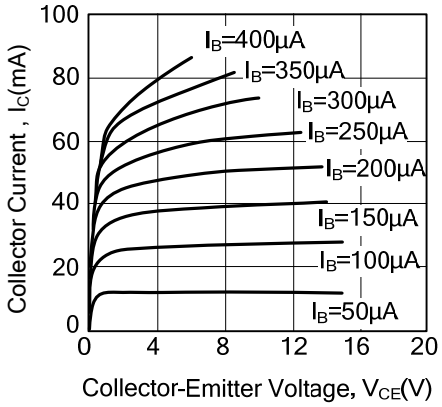
PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage		BV_{CBO}	I_C=10μA, I_E=0	50			V
Collector-Emitter Breakdown Voltage		BV_{CEO}	I_C=2mA, I_B=0	45			V
Emitter-Base Breakdown Voltage		BV_{EBO}	I_E=10μA, I_C=0	6			V
Collector Cut-Off Current		I_{CBO}	V_{CB}=30V, I_E=0			15	nA
Collector Cutoff Current		I_{CEO}	V_{CE}=40V			100	nA
Emitter Cutoff Current		I_{EBO}	V_{EB}=5V			100	nA
DC Current Gain		h_{FE}	V_{CE}=5.0V, I_C=2.0mA	110		800	
Collector-Emitter Saturation Voltage		$V_{CE(SAT)}$	I_C=10mA, I_B=0.5mA		90	250	mV
			I_C=100mA,I_B=5.0mA		200	600	mV
Collector-Base Saturation Voltage		$V_{BE(SAT)}$	I_C=10mA, I_B=0.5mA		700		mV
			I_C=100mA,I_B=5.0mA		900		mV
Base-Emitter On Voltage		$V_{BE(ON)}$	V_{CE}=5.0V, I_C=2.0mA	580	660	700	mV
			V_{CE}=5.0V, I_C=10mA			720	mV
Current Gain Bandwidth Product		f_T	V_{CE}=5.0V, I_C=10mA, f=100MHz		300		MHz
Output Capacitance		C_{OB}	V_{CB}=10V, I_E=0, f=1.0MHz		3.5	6	pF
Input Capacitance		C_{IB}	V_{EB}=0.5V, I_C=0, f=1.0MHz		9		pF
Noise Figure	BC846/BC847/BC848	NF	V_{CE}=5V, I_C=200μA, f=1KHz,		2	10	dB
	BC849/BC850		R_G=2KΩ		1.2	4	dB
	BC849		V_{CE}=5V, I_C=200μA,		1.4	4	dB
	BC850		R_G=2KΩ, f=30~15000Hz		1.4	3	dB

■ CLASSIFICATION OF h_{FE}

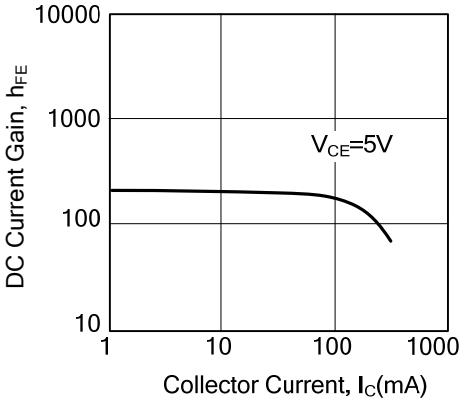
RANK	A	B	C
RANGE	110-220	200-450	420-800

■ TYPICAL CHARACTERISTICS

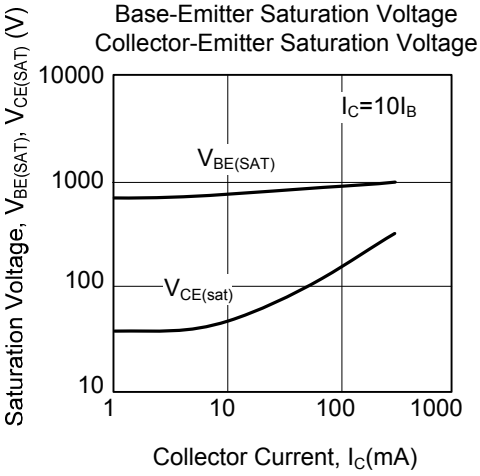
Static Characteristic



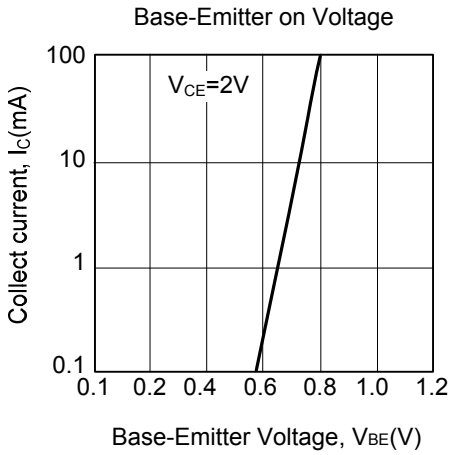
DC Current Gain



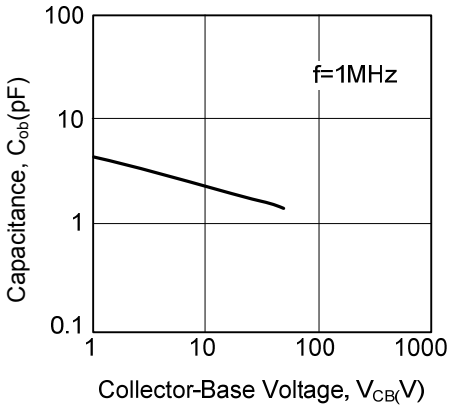
Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage



Base-Emitter on Voltage



Collector Output Capacitance



Current Gain Bandwidth Product