



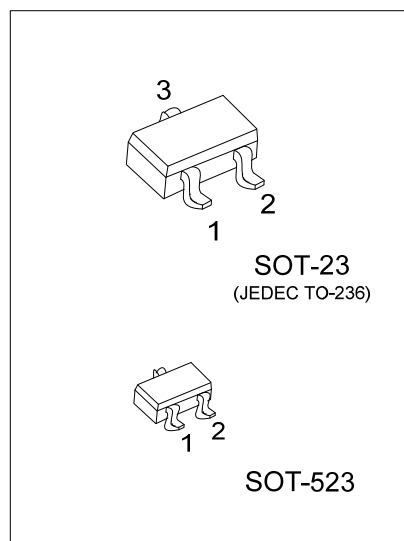
BC846B-BC850B

NPN SILICON TRANSISTOR

SWITCHING AND AMPLIFIER APPLICATION

FEATURES

- * Suitable for automatic insertion in thick and thin-film circuits.
- * Complement to BC856B ... BC860B



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
BC846BL-x-AE3-R	BC846BG-x-AE3-R	SOT-23	B	E	C	Tape Reel
BC847BL-x-AE3-R	BC847BG-x-AE3-R	SOT-23	B	E	C	Tape Reel
BC848BL-x-AE3-R	BC848BG-x-AE3-R	SOT-23	B	E	C	Tape Reel
BC849BL-x-AE3-R	BC849BG-x-AE3-R	SOT-23	B	E	C	Tape Reel
BC850BL-x-AE3-R	BC850BG-x-AE3-R	SOT-23	B	E	C	Tape Reel
BC846BL-x-AN3-R	BC846BG-x-AN3-R	SOT-523	B	E	C	Tape Reel
BC847BL-x-AN3-R	BC847BG-x-AN3-R	SOT-523	B	E	C	Tape Reel
BC848BL-x-AN3-R	BC848BG-x-AN3-R	SOT-523	B	E	C	Tape Reel
BC849BL-x-AN3-R	BC849BG-x-AN3-R	SOT-523	B	E	C	Tape Reel
BC850BL-x-AN3-R	BC850BG-x-AN3-R	SOT-523	B	E	C	Tape Reel

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

BC846BG-x-AE3-R (1) Packing Type (2) Package Type (3) Rank (4) Green Package	(1) R: Tape Reel (2) AE3: SOT-23, AN3: SOT-523 (3) x: refer to Classification of h_{FE} (4) G: Halogen Free and Lead Free, L: Lead Free
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MARKING

BC846B	BC847B	BC848B	BC849B	BC850B

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

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

BC846B-BC850B

NPN SILICON TRANSISTOR

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

PARAMETER		SYMBOL	VALUE	UNIT
Collector-Base Voltage	BC846B	V _{CBO}	80	V
	BC847B / BC850B		50	V
	BC848B / BC849B		30	V
Collector-Emitter Voltage	BC846B	V _{CEO}	65	V
	BC847B / BC850B		45	V
	BC848B / BC849B		30	V
Emitter-Base Voltage	BC846B / BC847B	V _{EBO}	6	V
	BC848B / BC849B / BC850B		5	V
Collector Current (DC)	Continuous	I _C	100	mA
	Peak (1)	I _{CM}	300	mA
Collector Dissipation (Note 2)	SOT-23	P _D	310	mW
	SOT-523		150	mW
Junction Temperature		T _J	+150	°C
Storage Temperature		T _{STG}	-40 ~ +150	°C

Notes: 1. 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.

2. Transistor mounted on an FR4 printed-circuit board.

■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BC846B	BV _{CBO}	I _C =10μA, I _E =0	80			V
	BC847B / BC850B			50			V
	BC848B / BC849B			30			V
Collector-Emitter Breakdown Voltage	BC846B	BV _{CEO}	I _C =2mA, I _B =0	65			V
	BC847B / BC850B			45			V
	BC848B / BC849B			30			V
Collector-Emitter Breakdown Voltage	BC846B	BV _{CES}	I _C =2mA, V _{BE} =0V	80			V
	BC847B / BC850B			50			V
	BC848B / BC849B			30			V
Emitter-Base Breakdown Voltage	BC846B / BC847B	BV _{EBO}	I _E =10μA, I _C =0	6			V
	BC848B / BC849B			5			V
	BC850B						
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		60	200	mV
			I _C =100mA, I _B =5.0mA		120	400	mV
Collector-Base Saturation Voltage		V _{BE(SAT)}	I _C =10mA, I _B =0.5mA		750		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		0.9		pF
Input Capacitance		C _{IB}	V _{EB} =0.5V, I _C =0, f=1.0MHz		40		pF

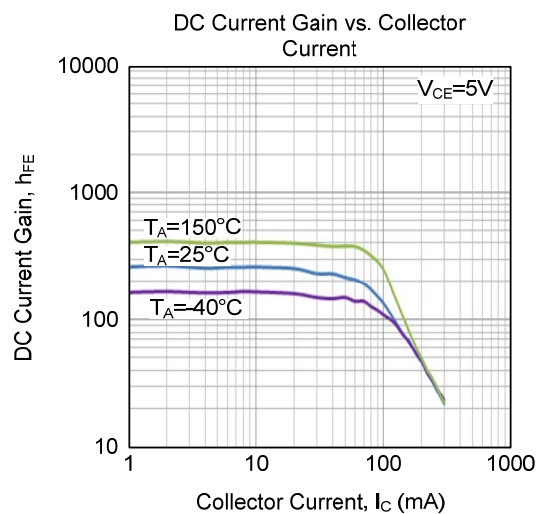
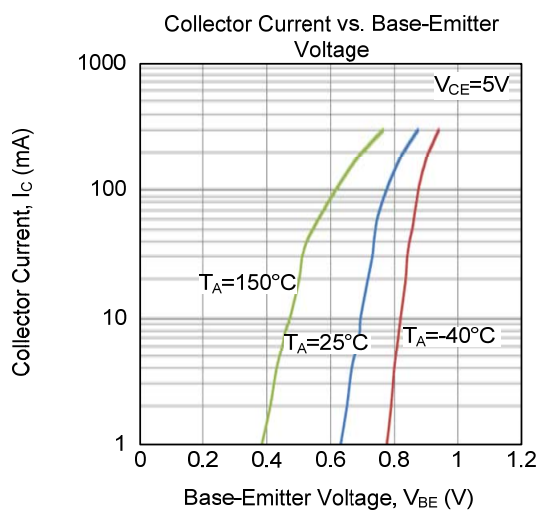
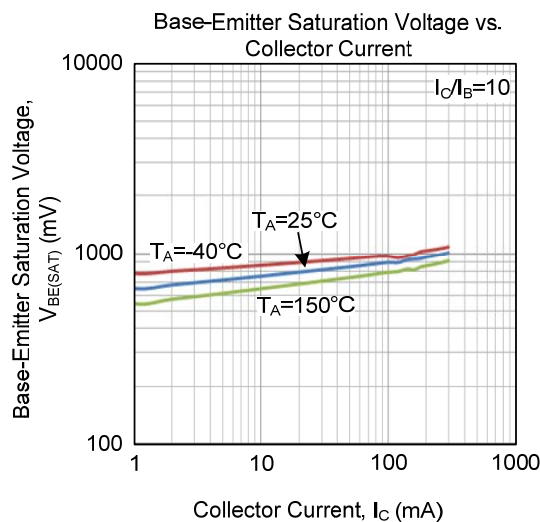
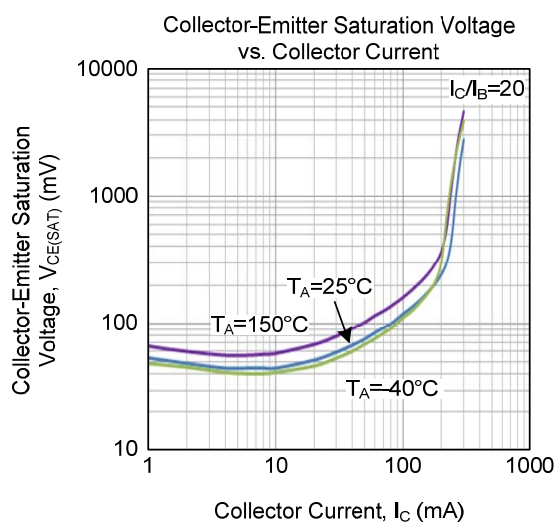
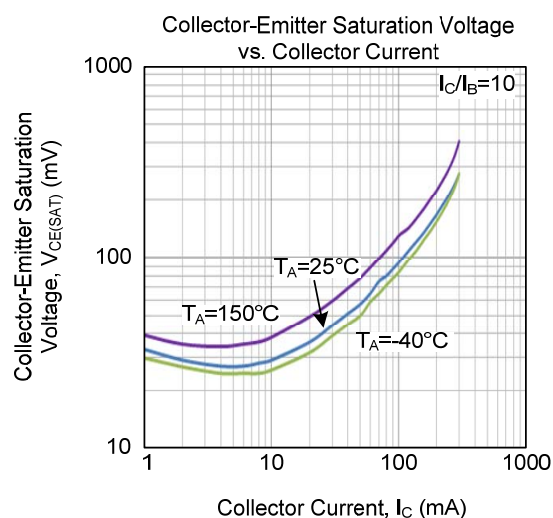
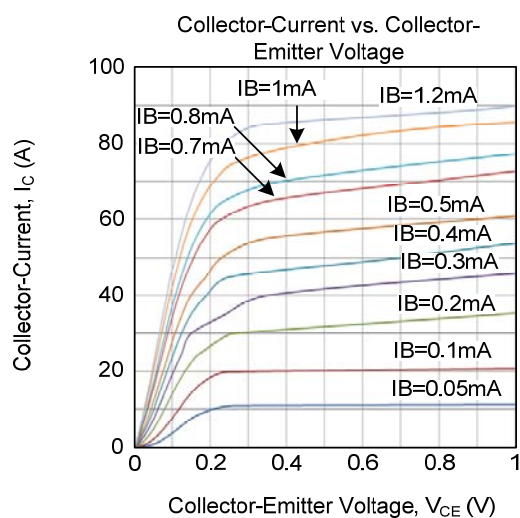
■ ELECTRICAL CHARACTERISTICS (Cont.)

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Noise Figure	BC846B/BC847B BC848B	NF	$V_{CE}=5V$, $I_C=200\mu A$, $f=1KHz$, $R_G=2K\Omega$			10	dB
	BC849B/BC850B					4	dB
	BC849B		$V_{CE}=5V$, $I_C=200\mu A$,			4	dB
	BC850B		$R_G=2K\Omega$, $f=30\sim 15000Hz$			3	dB

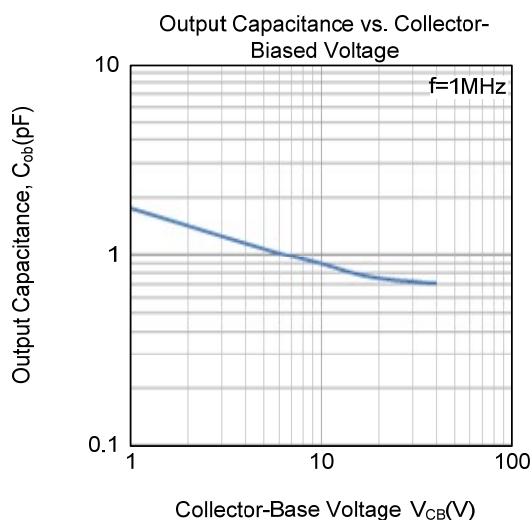
■ CLASSIFICATION OF h_{FE}

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

TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS (Cont.)



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