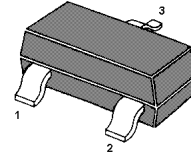


BC846 ... BC850 NPN Silicon Epitaxial Transistor

for switching and amplifier applications

As complementary types the PNP transistors
BC856...BC860 is recommended.



1.Base 2.Emitter 3.Collector
SOT-23 Plastic Package

Absolute Maximum Ratings ($T_a = 25\text{ }^\circ\text{C}$)

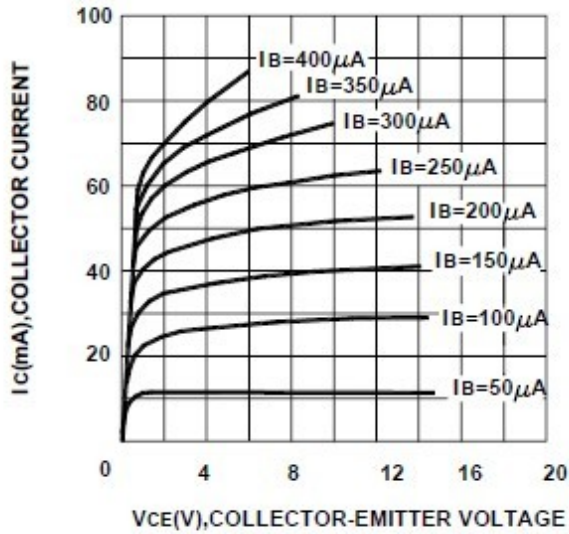
Parameter	Symbol	Value	Units	
Collector Base Voltage	BC846	V_{CBO}	80	V
	BC847, BC850	V_{CBO}	50	V
	BC848, BC849	V_{CBO}	30	V
Collector Emitter Voltage	BC846	V_{CEO}	65	V
	BC847, BC850	V_{CEO}	45	V
	BC848, BC849	V_{CEO}	30	V
Emitter Base Voltage	BC846, BC847	V_{EBO}	6	V
	BC848, BC849, BC850	V_{EBO}	5	V
Collector Current	I_C	100	mA	
Peak Collector Current	I_{CM}	200	mA	
Power Dissipation	P_{tot}	200	mW	
Junction Temperature	T_J	150	$^\circ\text{C}$	
Storage Temperature Range	T_S	- 65 to + 150	$^\circ\text{C}$	

Characteristics at $T_{amb} = 25\text{ }^{\circ}\text{C}$

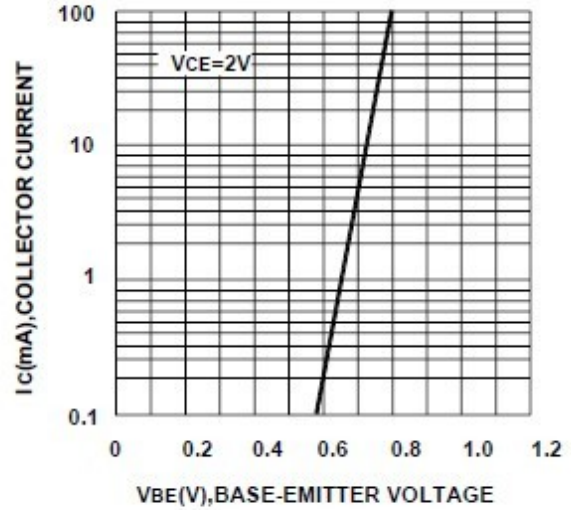
Parameter	Symbol	Min.	Typ.	Max.	Units	
DC Current Gain at $V_{CE} = 5\text{ V}$, $I_C = 2\text{ mA}$	A	h_{FE}	110	-	220	-
	B	h_{FE}	200	-	450	-
	C	h_{FE}	420	-	800	-
Collector Emitter Saturation Voltage at $I_C = 10\text{ mA}$, $I_B = 0.5\text{ mA}$ at $I_C = 100\text{ mA}$, $I_B = 5\text{ mA}$	V_{CEsat}	-	-	250	mV	
	V_{CEsat}	-	-	600	mV	
Base Emitter On Voltage at $I_C = 2\text{ mA}$, $V_{CE} = 5\text{ V}$ at $I_C = 10\text{ mA}$, $V_{CE} = 5\text{ V}$	$V_{BE(on)}$	580	-	700	mV	
	$V_{BE(on)}$	-	-	720	mV	
Collector Cutoff Current at $V_{CB} = 30\text{ V}$	I_{CBO}	-	-	15	nA	
Current Gain Bandwidth Product at $V_{CE} = 5\text{ V}$, $I_C = 10\text{ mA}$, $f = 100\text{ MHz}$	f_T	-	300	-	MHz	
Output Capacitance at $V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$	C_{ob}	-	-	6	pF	
Input Capacitance at $V_{EB} = 0.5\text{ V}$, $f = 1\text{ MHz}$	C_{ib}	-	9	-	pF	
Noise Figure at $I_C = 200\text{ }\mu\text{A}$, $V_{CE} = 5\text{ V}$, $R_G = 2\text{ K}\Omega$, $f = 1\text{ KHz}$ at $I_C = 200\text{ }\mu\text{A}$, $V_{CE} = 5\text{ V}$, $R_G = 2\text{ K}\Omega$, $f = 30 \sim 15\text{ KHz}$	BC846, BC847, BC848	NF	-	-	10	dB
	BC849, BC850	NF	-	-	4	dB
	BC849	NF	-	-	4	dB
	BC850	NF	-	-	3	dB



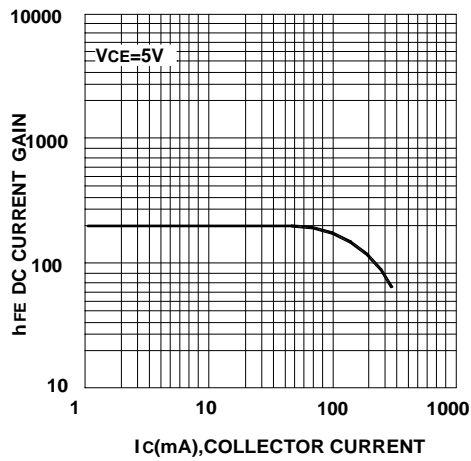
STATIC CHARACTERISTIC



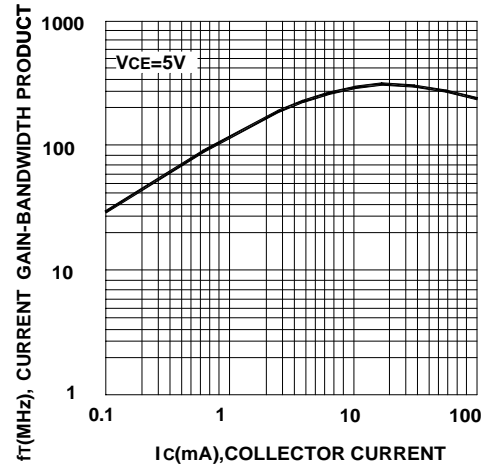
BASE-EMITTER ON VOLTAGE



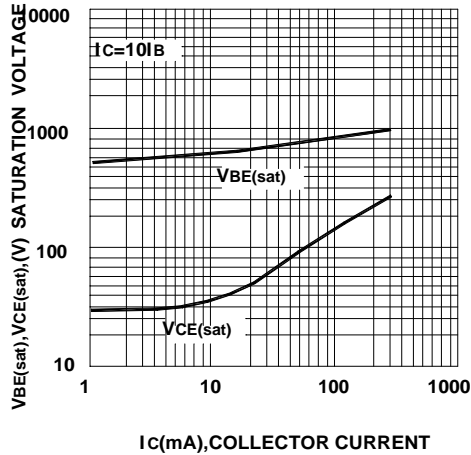
DC CURRENT GAIN



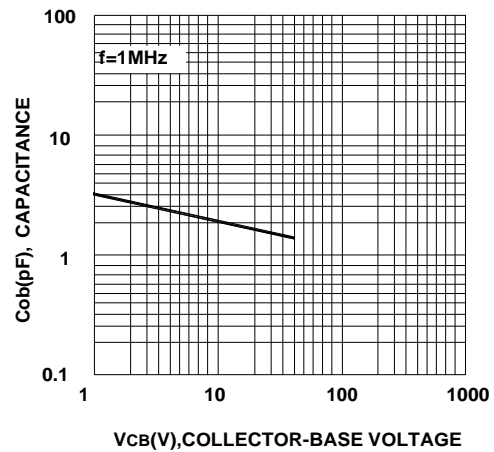
CURRENT GAIN BANDWIDTH PRODUCT



BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE



COLLECTOR OUTPUT CAPACITANCE

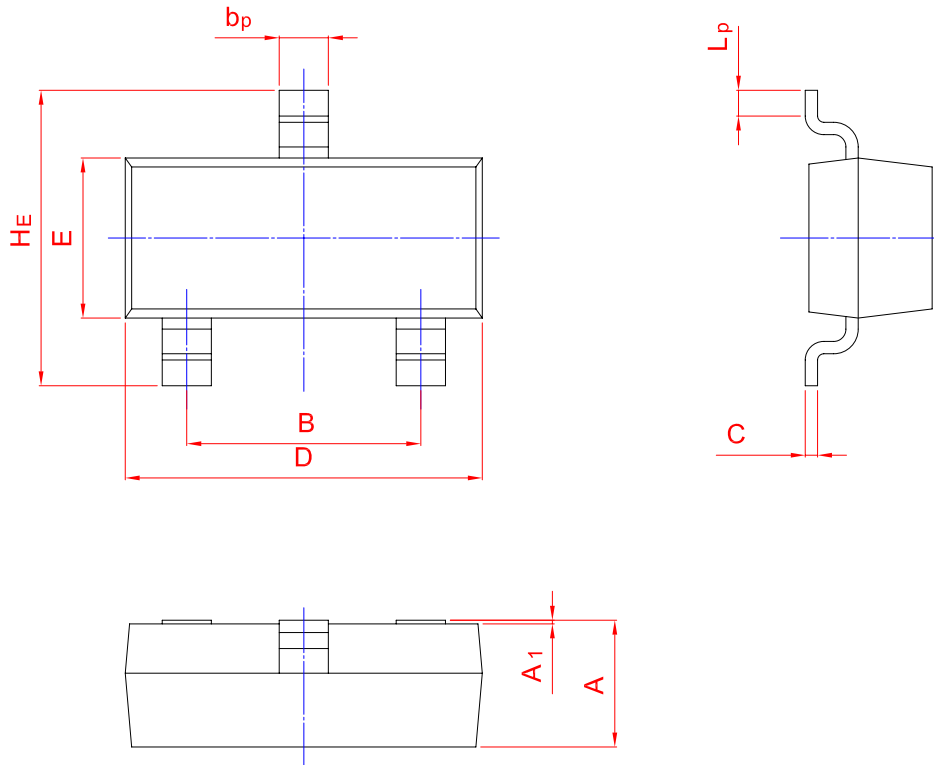
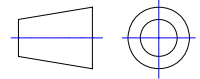




PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



UNIT	A	B	bp	C	D	E	Hε	A1	Lp
mm	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50
	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20

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