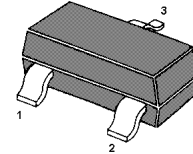


BC846 ... BC850 NPN Silicon Epitaxial Transistor

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

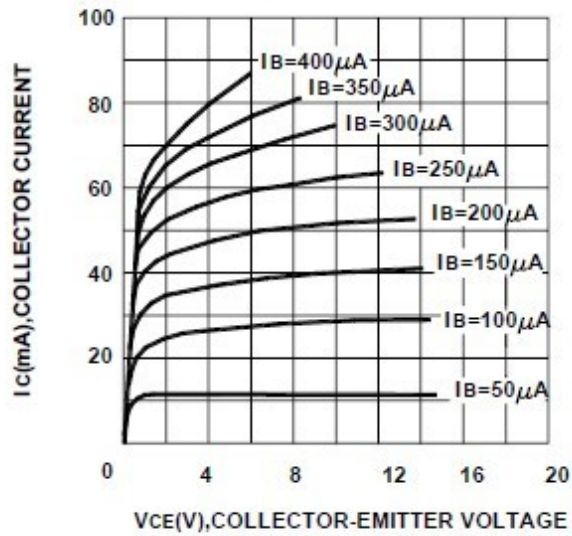
Parameter	Symbol	Value	Units
Collector Base Voltage	BC846	V_{CBO}	80 V
	BC847, BC850	V_{CBO}	50 V
	BC848, BC849	V_{CBO}	30 V
Collector Emitter Voltage	BC846	V_{CEO}	65 V
	BC847, BC850	V_{CEO}	45 V
	BC848, BC849	V_{CEO}	30 V
Emitter Base Voltage	BC846, BC847	V_{EBO}	6 V
	BC848, BC849, BC850	V_{EBO}	5 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 $T_{amb} = 25^{\circ}\text{C}$

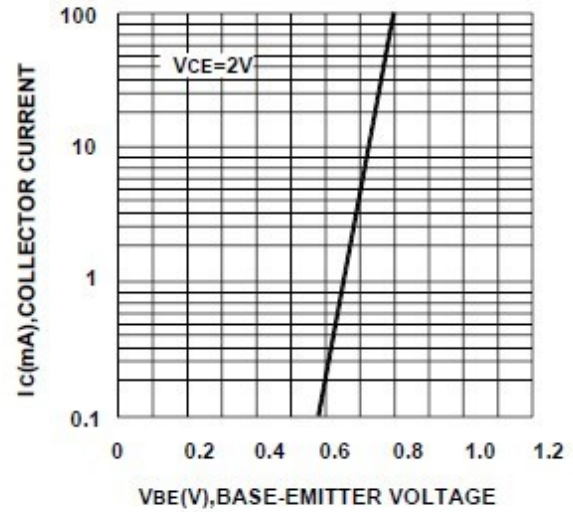
Parameter	Symbol	Min.	Typ.	Max.	Units
DC Current Gain at $V_{CE} = 5\text{ V}$, $I_C = 2\text{ mA}$	A h_{FE}	110	-	220	-
	B h_{FE}	200	-	450	-
	C h_{FE}	420	-	800	-
Collector Emitter Saturation Voltage at $I_C = 10\text{ mA}$, $I_B = 0.5\text{ mA}$ at $I_C = 100\text{ mA}$, $I_B = 5\text{ mA}$	V_{CEsat}	-	-	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



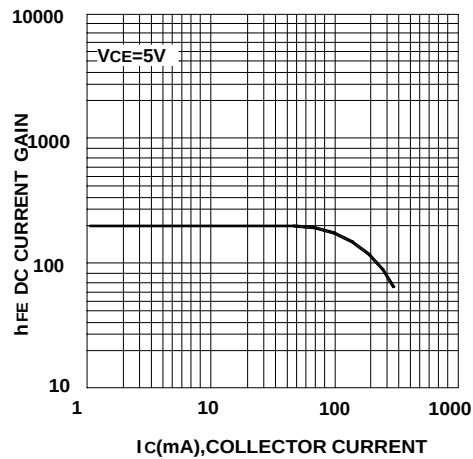
STATIC CHARACTERISTIC



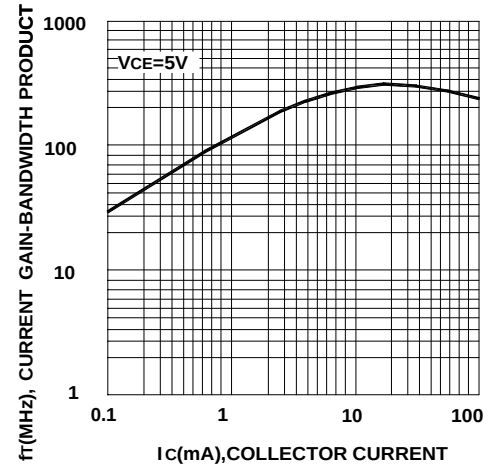
BASE-EMITTER ON VOLTAGE



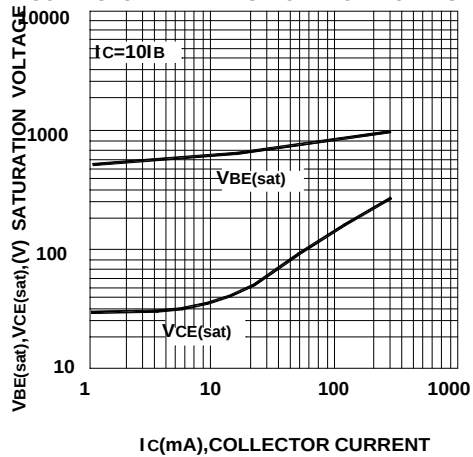
DC CURRENT GAIN



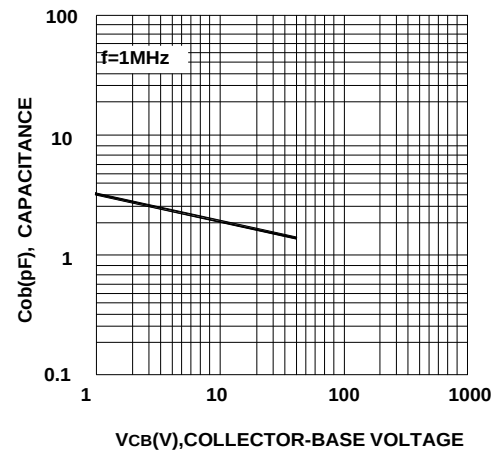
CURRENT GAIN BANDWIDTH PRODUCT



BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE



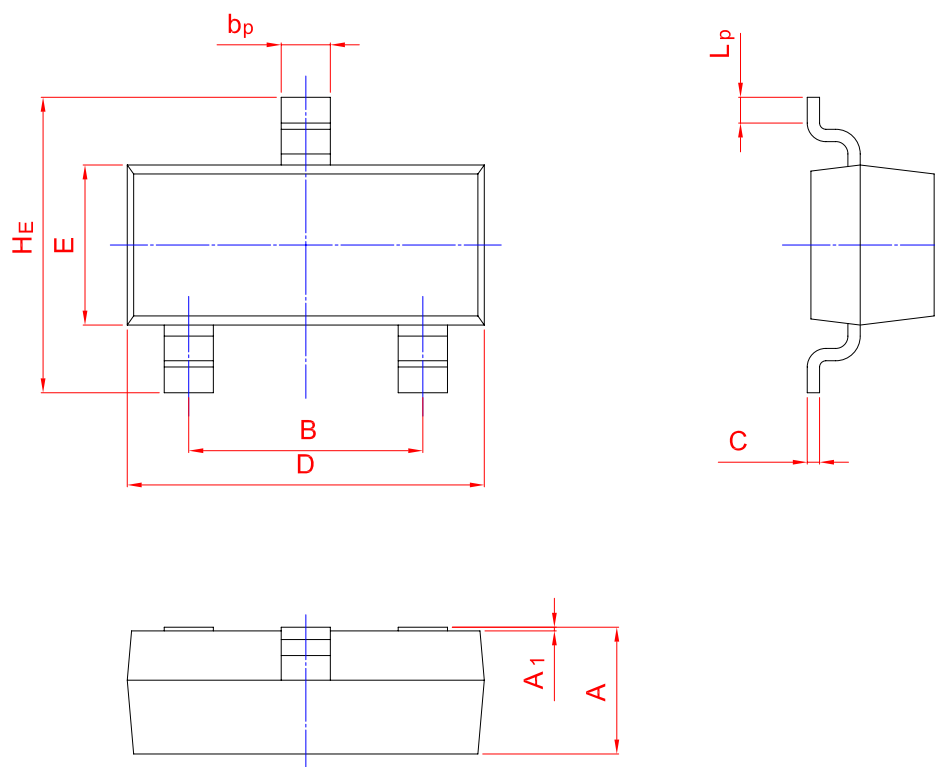
COLLECTOR OUTPUT CAPACITANCE



PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



UNIT	A	B	b_p	C	D	E	H_E	A_1	L_p
mm	1.40 0.95	2.04 1.78	0.50 0.35	0.19 0.08	3.10 2.70	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20