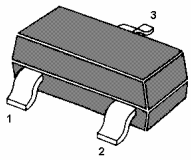
BC846 … BC850

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

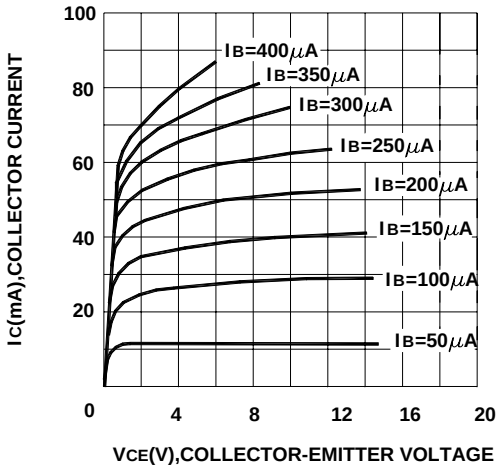
Absolute Maximum Ratings (T_a = 25 °C)

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	°C
Storage Temperature Range		T_S	- 65 to + 150	°C

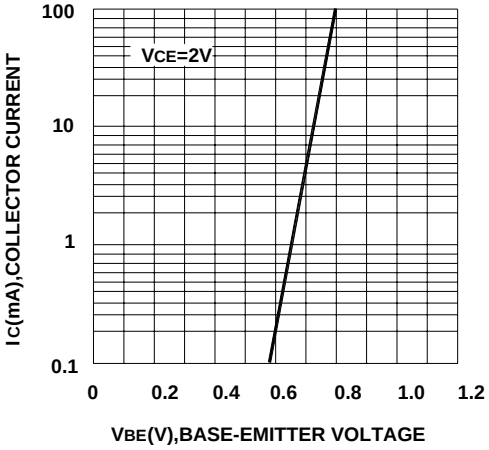
Characteristics at T_{amb} = 25 °C

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

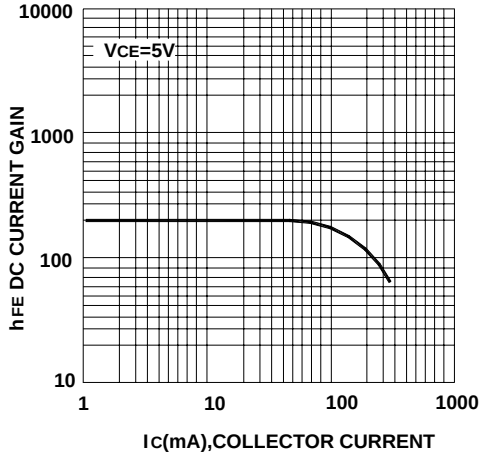
STATIC CHARACTERISTIC



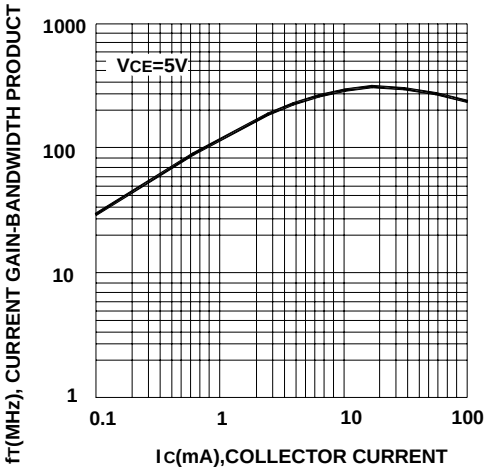
BASE-EMITTER ON VOLTAGE



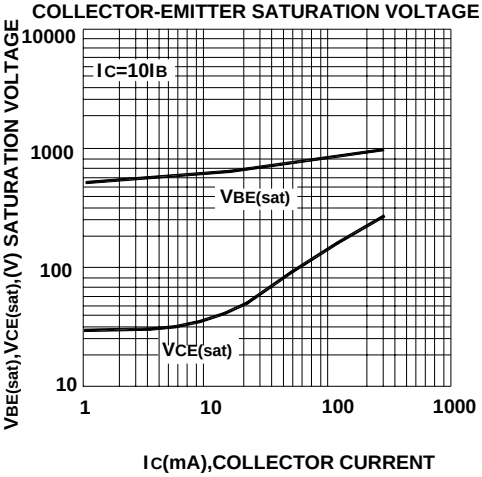
DC CURRENT GAIN



CURRENT GAIN BANDWIDTH PRODUCT



BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE



COLLECTOR OUTPUT CAPACITANCE