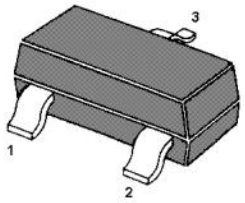
NPN Silicon Epitaxial Transistor

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 BC847, BC850 BC848, BC849	V_{CBO} V_{CBO} V_{CBO}	80 50 30	V V V
Collector Emitter Voltage	BC846 BC847, BC850 BC848, BC849	V_{CEO} V_{CEO} V_{CEO}	65 45 30	V V V
Emitter Base Voltage	BC846, BC847 BC848, BC849, BC850	V_{EBO} V_{EBO}	6 5	V 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

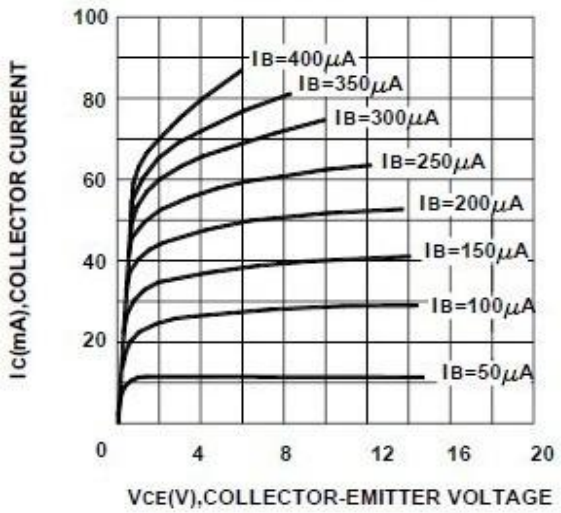
MARKING CODE

TYPE	846A	846B	846C	847A	847B	847C	848A	848B	848C	849A	849B	849C	850A	850B	850C
MARK	1A	1B	1C	1E	1F	1G	1J	1K	1L	2A	2B	2C	2E	2F	2G

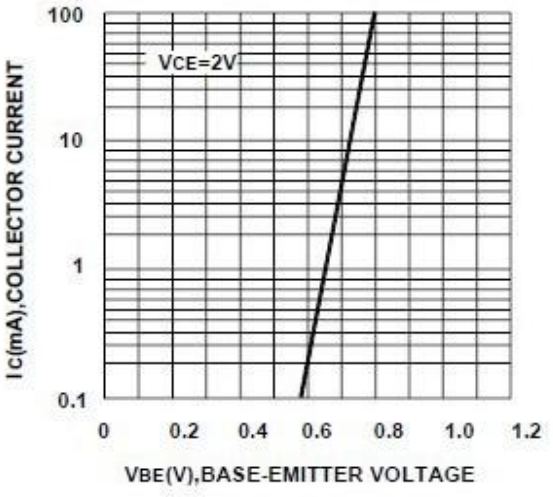
Characteristics at T_{amb} = 25 °C

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		$V_{BE(on)}$	-	-	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

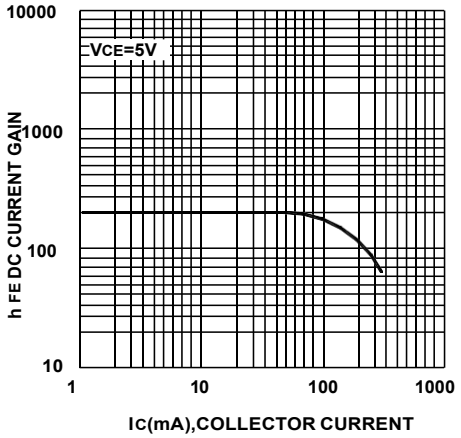
STATIC CHARACTERISTIC



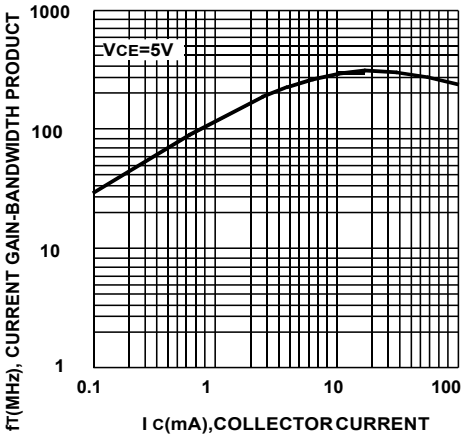
BASE-EMITTER ON VOLTAGE



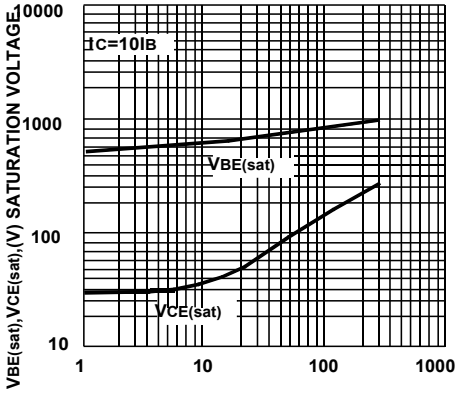
DC CURRENT GAIN



CURRENT GAIN BANDWIDTH PRODUCT



BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE



COLLECTOR OUTPUT CAPACITANCE