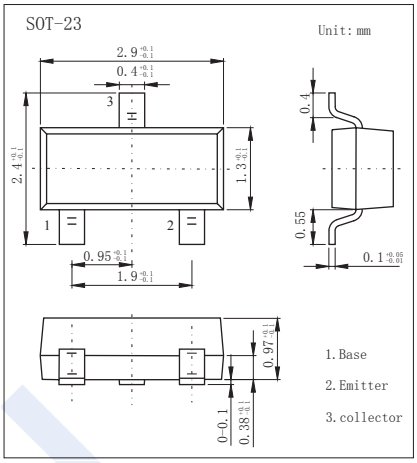
NPN Transistors

BC849~BC850 (KC849~KC850)



■ Features

- Low current (max. 100 mA)
- Low voltage (max. 45 V).
- PNP complements: BC859 and BC860.

■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Rating	Unit
Collector - Base Voltage	BC849	V_{CBO}	30	V
	BC850		50	
Collector - Emitter Voltage	BC849	V_{CEO}	30	
	BC850		45	
Emitter - Base Voltage		V_{EBO}	5	
Collector Current - Continuous		I_C	100	mA
Peak Collector Current		I_{CM}	200	
Peak Base Current		I_{BM}	200	
Collector Power Dissipation (Note.1)		P_C	250	mW
Thermal Resistance From Junction to Ambient (Note.1)		R_{thja}	500	K/W
Junction Temperature		T_J	150	℃
Storage Temperature Range		T_{stg}	-55 to 150	

Note.1: Transistor mounted on an FR4 printed-circuit board.

NPN Transistors

BC849~BC850 (KC849~KC850)

■ Electrical Characteristics Ta = 25℃

Parameter		Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	BC849	V_{CBO}	I_C= 100 μA, I_E= 0	30			V
	BC850			50			
Collector- emitter breakdown voltage	BC849	V_{CEO}	I_C= 1 mA, I_B= 0	30			
	BC850			45			
Emitter - base breakdown voltage		V_{EBO}	I_E= 100 μ A, I_C= 0	5			
Collector-base cut-off current		I_{CBO}	V_{CB}= 30 V , I_E= 0			15	nA
			V_{CB}= 30 V , I_E= 0,T_J=150℃			5	uA
Emitter cut-off current		I_{EBO}	V_{EB}= 5V , I_C=0			100	nA
Collector-emitter saturation voltage		$V_{CE(sat)}$	I_C=10 mA, I_B=0.5mA (Note.1)		90	250	mV
			I_C=100 mA, I_B=5mA (Note.1)		200	500	
Base - emitter saturation voltage		$V_{BE(sat)}$	I_C=10 mA, I_B=0.5mA (Note.2)		700		
			I_C=100 mA, I_B=5mA (Note.2)		900		
Base-Emitter Voltage		V_{BE}	I_C=2 mA, V_{CE}=5V (Note.2)	580	660	700	
			I_C=10 mA, V_{CE}=5V (Note.2)			770	
DC current gain	BC849B,BC850B	h_{FE}	V_{CE}= 5V, I_C= 10uA		240		
	BC849C,BC850C				450		
DC current gain	BC849B,BC850B		V_{CE}= 5V, I_C= 2mA	200	290	450	
	BC849C,BC850C			420	520	800	
Collector capacitance		C_c	V_{CB}= 10V, I_C=i_c= 0,f=1MHz		2.5		pF
Emitter capacitance		C_e	V_{EB}= 0.5V , I_E=i_e= 0,f=1MHz		11		
Noise Figure		NF	I_C=200uA,V_{CE}=5V,R_S=2KΩ; f=10Hz to 15.7KHz			4	dB
			I_C=200uA,V_{CE}=5V,R_S=2KΩ; f=1KHz,B=200Hz			4	
Transition frequency		f_T	V_{CE}= 5V, I_C= 10mA,f=100MHz	100			MHz

Note.1: V_{BEsat} decreases by about 1.7 mV/K with increasing temperature.

Note.2: V_{BE} decreases by about 2 mV/K with increasing temperature.

■ Classification of h_{fe}

Type	BC849B	BC849C	BC850B	BC850C
Range	200-450	420-800	200-450	420-800
Marking	2B*	2C*	2F*	2G*

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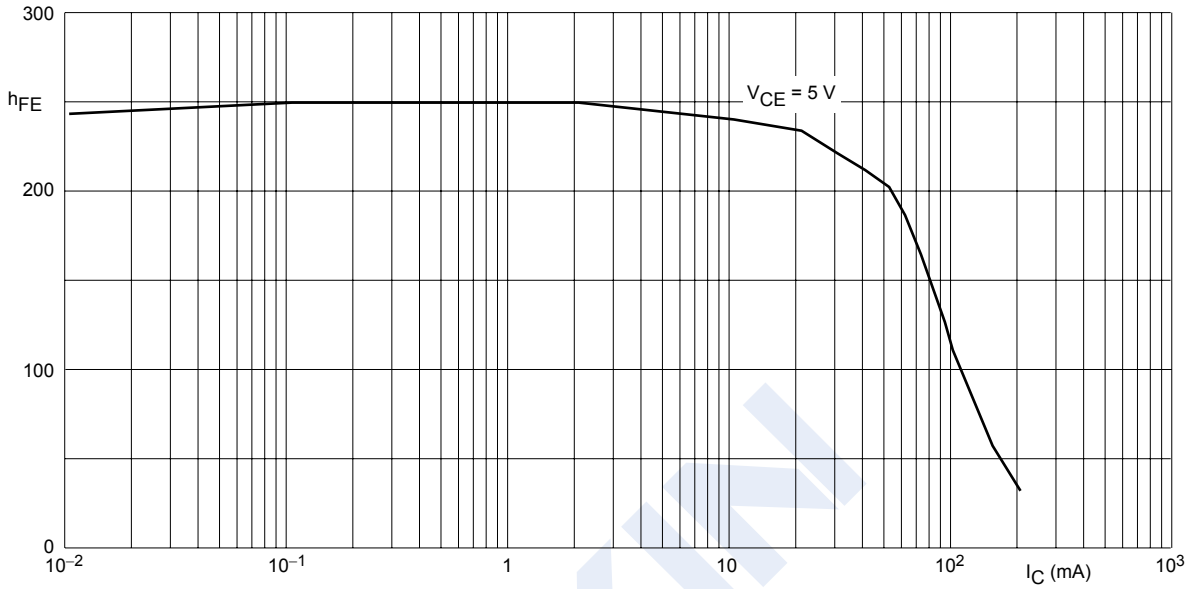
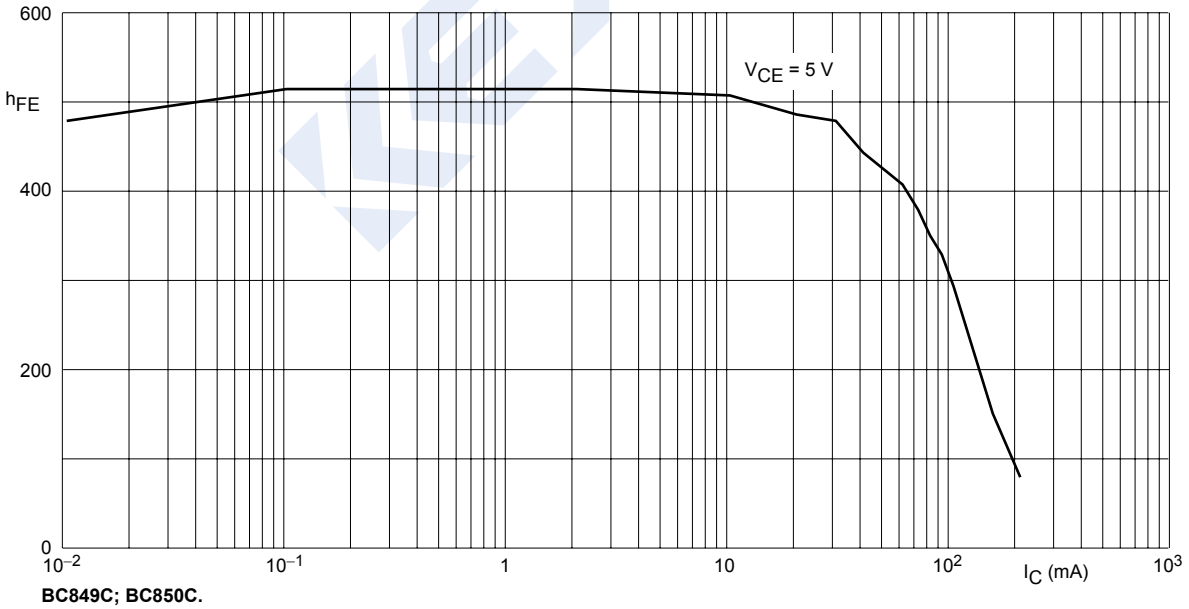
■ Typical Characterisitics



BC849B; BC850B.

Fig.2 DC current gain; typical values.



BC849C; BC850C.

Fig.3 DC current gain; typical values.