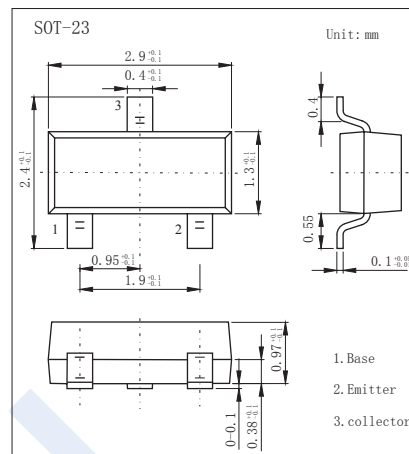


NPN Transistors

BC849~BC850 (KC849~KC850)

■ Features

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

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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V _{CB0}	30	V
BC849 BC850		50	
Collector - Emitter Voltage	V _{CEO}	30	
BC849 BC850		45	
Emitter - Base Voltage	V _{EB0}	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	°C
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°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	BC849 BC850	$I_C = 100 \mu A, I_E = 0$	30			V
			50			
Collector- emitter breakdown voltage	BC849 BC850	$I_C = 1 mA, I_B = 0$	30			
			45			
Emitter - base breakdown voltage	V_{EBO}	$I_E = 100 \mu A, I_C = 0$	5			
Collector-base cut-off current	I_{CBO}	$V_{CB} = 30 V, I_E = 0$			15	nA
		$V_{CB} = 30 V, I_E = 0, T_J = 150^\circ C$			5	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5 V, I_C = 0$			100	nA
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 10 mA, I_B = 0.5 mA$ (Note.1)		90	250	mV
		$I_C = 100 mA, I_B = 5 mA$ (Note.1)		200	500	
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = 10 mA, I_B = 0.5 mA$ (Note.2)		700		
		$I_C = 100 mA, I_B = 5 mA$ (Note.2)		900		
Base-Emitter Voltage	V_{BE}	$I_C = 2 mA, V_{CE} = 5 V$ (Note.2)	580	660	700	
		$I_C = 10 mA, V_{CE} = 5 V$ (Note.2)			770	
DC current gain	BC849B,BC850B BC849C,BC850C	$V_{CE} = 5 V, I_C = 10 \mu A$		240		
				450		
DC current gain	BC849B,BC850B BC849C,BC850C	$V_{CE} = 5 V, I_C = 2 mA$	200	290	450	
			420	520	800	
Collector capacitance	C_c	$V_{CB} = 10 V, I_C = I_{C0} = 0, f = 1 MHz$		2.5		pF
Emitter capacitance	C_e	$V_{EB} = 0.5 V, I_E = I_{E0} = 0, f = 1 MHz$		11		
Noise Figure	NF	$I_C = 200 \mu A, V_{CE} = 5 V, R_S = 2 K\Omega$; $f = 10 Hz$ to $15.7 KHz$			4	dB
		$I_C = 200 \mu A, V_{CE} = 5 V, R_S = 2 K\Omega$; $f = 1 KHz, B = 200 Hz$			4	
Transition frequency	f_T	$V_{CE} = 5 V, I_C = 10 mA, f = 100 MHz$	100			MHz

Note.1: $V_{BE(sat)}$ 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*

NPN Transistors

BC849~BC850 (KC849~KC850)

■ Typical Characteristics

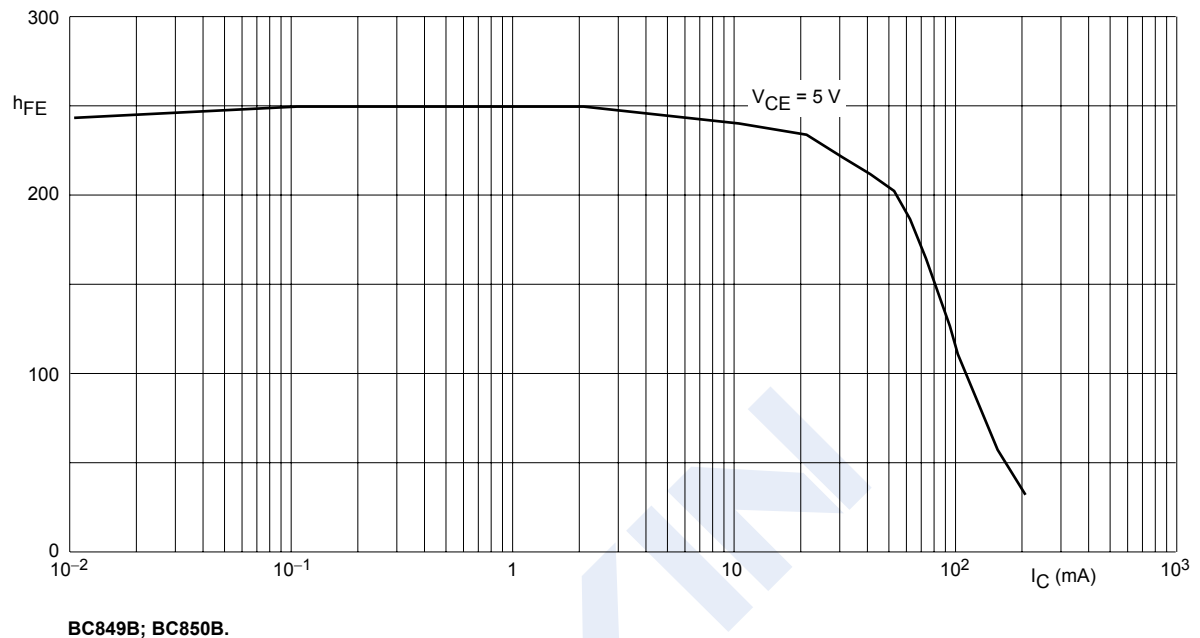


Fig.2 DC current gain; typical values.

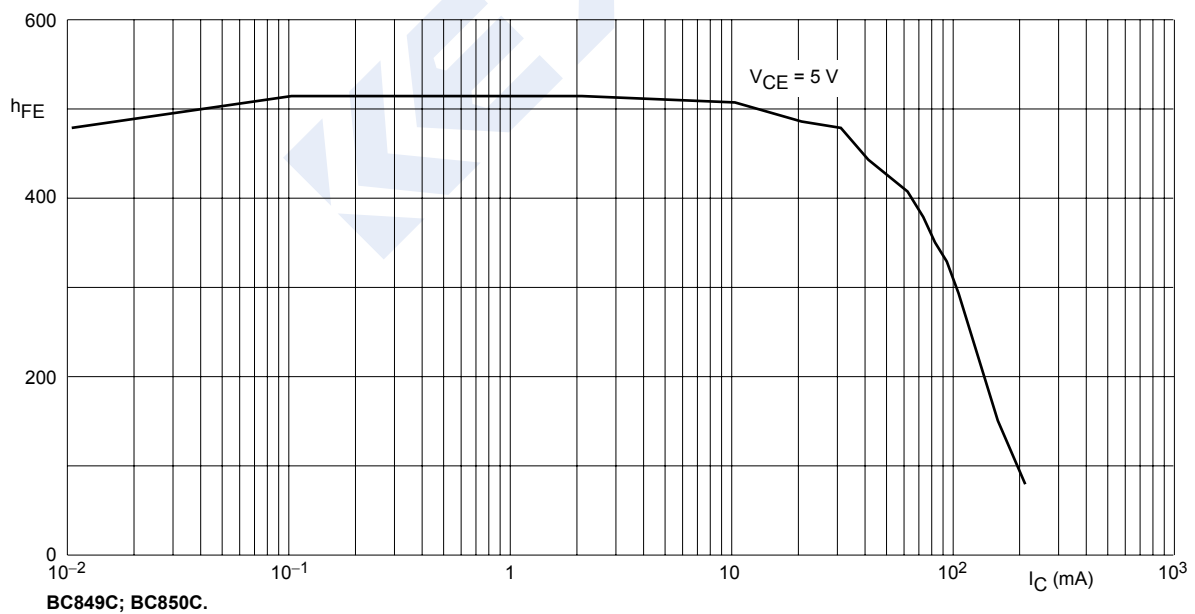


Fig.3 DC current gain; typical values.