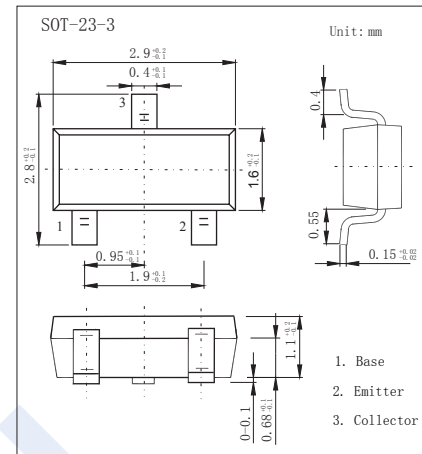


PNP Transistors

BC859~BC860 (KC859~KC860)

■ Features

- Low current (max. 100 mA)
- Low voltage (max. 45 V).
- NPN complements: BC849 and BC850.

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

Parameter	Symbol	Rating	Unit	
Collector - Base Voltage	BC859 BC860	V_{CBO}	-30	V
			-50	
Collector - Emitter Voltage	BC859 BC860	V_{CEO}	-30	
			-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	W
Thermal Resistance From Junction to Ambient (Note.1)		R_{thja}	500	K/W
Junction Temperature		T_J	150	$^\circ\text{C}$
Storage Temperature range		T_{stg}	-55 to 150	

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

PNP Transistors

BC859~BC860 (KC859~KC860)

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage BC859 BC860	V _{CB0}	I _c = -100 μA, I _E =0	-30			V
			-50			
Collector- emitter breakdown voltage BC859 BC860	V _{CE0}	I _c = -1 mA, I _B =0	-30			V
			-45			
Emitter - base breakdown voltage	V _{EB0}	I _E = -100 μA, I _C =0	-5			V
Collector-base cut-off current	I _{CBO}	V _{CB} = -30 V, I _E =0		-1	-15	nA
		V _{CB} = -30 V, I _E =0, T _J = 150°C			-4	μA
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		-75	-300	mV
		I _C = -100 mA, I _B = -5mA		-250	-600	
Base - emitter saturation voltage	V _{BE(sat)}	I _C = -10 mA, I _B = -0.5mA (Note.1)		-700		mV
		I _C = -100 mA, I _B = -5mA (Note.1)		-850		
Base - emitter voltage	V _{BE}	V _{CE} = -5V, I _C = -2mA (Note.2)	-600	-650	-750	mV
		V _{CE} = -5 V, I _C = -10mA (Note.2)			-820	
DC current gain BC859B:BC860B BC859C:BC860C	h _{FE}	V _{CE} = -5V, I _C = -2mA	220		475	
			420		800	
Collector capacitance	C _c	V _{CB} = -10V, I _E =I _C = 0, f=1MHz		4.5		pF
Emitter capacitance	C _e	V _{EB} = -0.5 V, I _C =I _C = 0, f=1MHz		10		pF
Noise Figure	NF	V _{CE} = -5V, I _C = -200μA, R _S =2KΩ f=30HZ to 15KHZ			4	dB
			V _{CE} = -5V, I _C = -200μA, R _S =2KΩ f=1 KHZ, B=200HZ			
Transition frequency	f _T	V _{CE} = -5V, I _C = -10mA, f=100MHz	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.

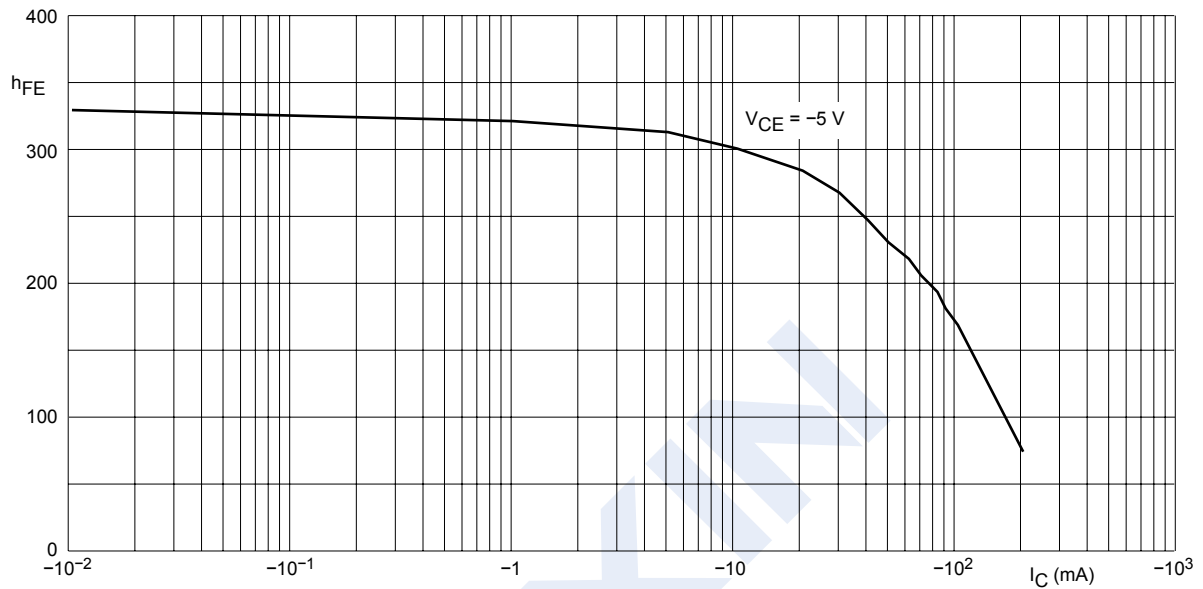
■ Classification of h_{FE}

Type	BC859B	BC859C	BC860B	BC860C
Range	220-475	420-800	220-475	420-800
Marking	4B*	4C*	4F*	4G*

PNP Transistors

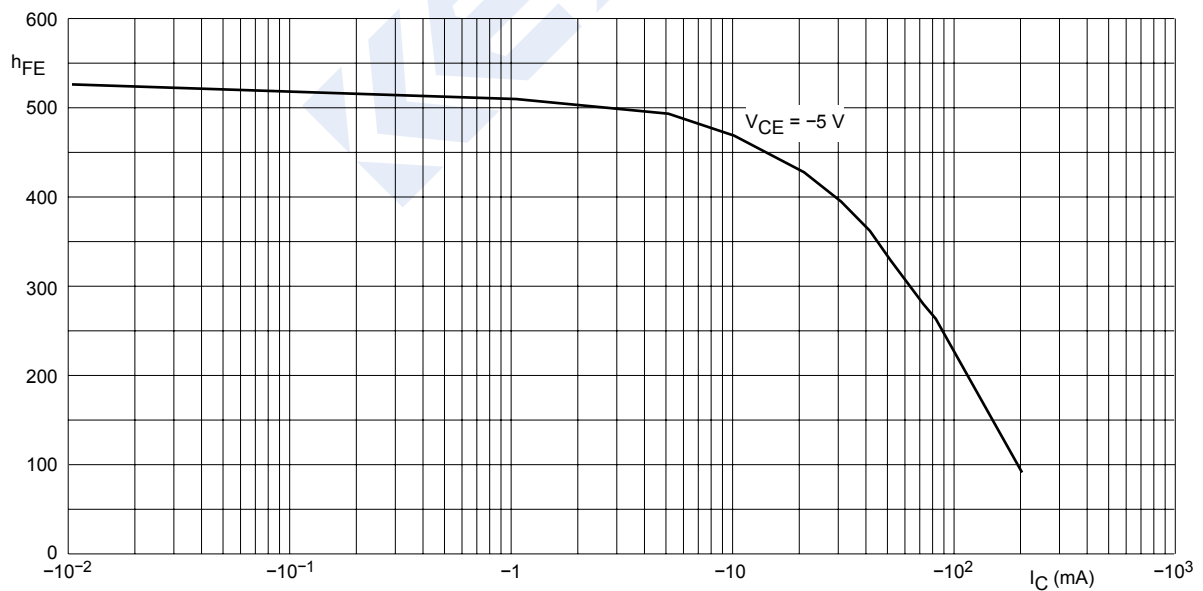
BC859~BC860 (KC859~KC860)

■ Typical Characteristics



BC859B; BC860B.

Fig.2 DC current gain; typical values.



BC859C; BC860C.

Fig.3 DC current gain; typical values.