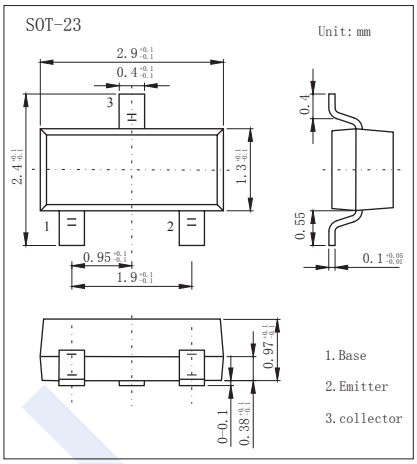
NPN Transistors

BCX70 (KCX70)



■ Features

- Low current (max. 100 mA)
- Low voltage (max. 45 V).
- PNP complements: BCX71 series.

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	45	V
Collector - Emitter Voltage	V_{CEO}	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	P_C	250	mW
Thermal Resistance From Junction to Ambient (note.1)	R_{thja}	50	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.

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■ Electrical Characteristics Ta = 25℃

Parameter		Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage		V_{CBO}	I_C= 100 μA, I_E= 0	45			V
Collector- emitter breakdown voltage		V_{CEO}	I_C= 1 mA, I_B= 0	45			V
Emitter - base breakdown voltage		V_{EBO}	I_E= 100 μA, I_C= 0	5			V
Collector-base cut-off current		I_{CBO}	V_{CB}= 45 V , I_E= 0			20	nA
			V_{CB}= 45 V , I_E= 0,T_{amb} = 150℃			20	uA
Emitter cut-off current		I_{EBO}	V_{EB}= 4V , I_C=0			20	nA
Collector-emitter saturation voltage		$V_{CE(sat)}$	I_C=10 mA, I_B=0.25mA	50		350	mV
			I_C=50 mA, I_B=1.25mA	100		550	mV
Base - emitter saturation voltage		$V_{BE(sat)}$	I_C=10 mA, I_B=0.25mA	600		850	mV
			I_C=50 mA, I_B=1.25mA	700		1050	mV
Base - emitter voltage		V_{BE}	V_{CE}= 5V, I_C= 10uA		520		mV
			V_{CE}= 5V, I_C= 2mA	550	650	750	mV
			V_{CE}= 1V, I_C= 50mA		780		mV
DC current gain	BCX70G	h_{FE}	V_{CE}= 5V, I_C= 10uA	-		-	
	BCX70H			40			
	BCX70J			30			
	BCX70K			100			
DC current gain	BCX70G		V_{CE}= 5V, I_C= 2mA	120		220	
	BCX70H			180		310	
	BCX70J			250		460	
	BCX70K			380		630	
DC current gain	BCX70G		V_{CE}= 1V, I_C= 50mA	50			
	BCX70H			70			
	BCX70J			90			
	BCX70K			100			
Collector capacitance		C_c	V_{CB}= 10V, I_E=Ie=0,f=1MHz		1.7		pF
Emitter capacitance		C_e	V_{EB}= 0.5 V, I_C=Ic=0,f=1MHz		11		pF
Noise figure		NF	I_C = 200 u A; V_{CE} = 5 V; R_S = 2 kΩ; f = 1 kHz; B = 200 Hz		2	6	dB
Transition frequency		f_T	V_{CE}= 5V, I_C= 10mA,f=100MHz	100	250		MHz

■ Classification of $h_{fe(2)}$

Type	BCX70G	BCX70H	BCX70J	BCX70K
Range	120-220	180-310	250-460	380-630
Marking	AG*	AH*	AJ*	AK*