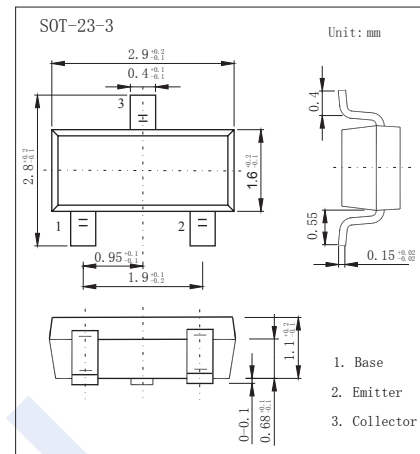


## NPN Transistors

## BCX70 (KCX70)

## ■ Features

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

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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	$V_{CB0}$	45	V
Collector - Emitter Voltage	$V_{CE0}$	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	$P_C$	250	mW
Thermal Resistance From Junction to Ambient (note.1)	$R_{thja}$	50	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.

## NPN Transistors

## BCX70 (KCX70)

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V <sub>CBO</sub>	I <sub>C</sub> = 100 μA, I <sub>E</sub> = 0	45			V
Collector- emitter breakdown voltage	V <sub>CEO</sub>	I <sub>C</sub> = 1 mA, I <sub>B</sub> = 0	45			
Emitter - base breakdown voltage	V <sub>EBO</sub>	I <sub>E</sub> = 100 μA, I <sub>C</sub> = 0	5			
Collector-base cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> = 45 V, I <sub>E</sub> = 0			20	nA
		V <sub>CB</sub> = 45 V, I <sub>E</sub> = 0, T <sub>amb</sub> = 150°C			20	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> = 4V, I <sub>C</sub> =0			20	nA
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =10 mA, I <sub>B</sub> =0.25mA	50		350	mV
		I <sub>C</sub> =50 mA, I <sub>B</sub> =1.25mA	100		550	
Base - emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =10 mA, I <sub>B</sub> =0.25mA	600		850	
		I <sub>C</sub> =50 mA, I <sub>B</sub> =1.25mA	700		1050	
Base - emitter voltage	V <sub>BE</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 10μA		520		
		V <sub>CE</sub> = 5V, I <sub>C</sub> = 2mA	550	650	750	
		V <sub>CE</sub> = 1V, I <sub>C</sub> = 50mA		780		
DC current gain	BCX70G BCX70H BCX70J BCX70K	V <sub>CE</sub> = 5V, I <sub>C</sub> = 10μA	-		-	
			40			
			30			
			100			
DC current gain	BCX70G BCX70H BCX70J BCX70K	V <sub>CE</sub> = 5V, I <sub>C</sub> = 2mA	120		220	
			180		310	
			250		460	
			380		630	
DC current gain	BCX70G BCX70H BCX70J BCX70K	V <sub>CE</sub> = 1V, I <sub>C</sub> = 50mA	50			
			70			
			90			
			100			
Collector capacitance	C <sub>c</sub>	V <sub>CB</sub> = 10V, I <sub>E</sub> =I <sub>C</sub> =0, f=1MHz		1.7		pF
Emitter capacitance	C <sub>e</sub>	V <sub>EB</sub> = 0.5V, I <sub>C</sub> =I <sub>C</sub> =0, f=1MHz		11		
Noise figure	NF	I <sub>C</sub> = 200 μA; V <sub>CE</sub> = 5 V; R <sub>s</sub> = 2 kΩ; f = 1 kHz; B = 200 Hz		2	6	dB
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 10mA, f=100MHz	100	250		MHz

■ Classification of h<sub>fe</sub>(2)

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