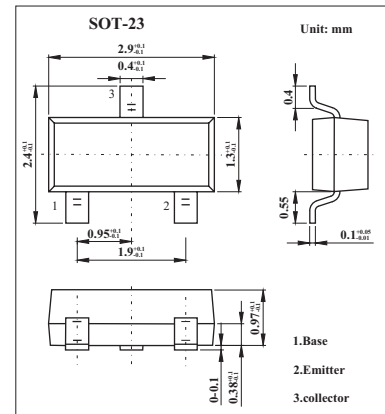


NPN General Purpose Transistors

BCX70 series

■ Features

- Low current (max. 100 mA).
- Low voltage (max. 45 V).

■ 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	V
Emitter-base voltage	V_{EB0}	5	V
Collector current	I_C	100	mA
Peak collector current	I_{CM}	200	mA
Peak base current	I_{BM}	200	mA
Collector dissipation	P_C	250	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-65 to +150	$^\circ\text{C}$
Operating ambient temperature	T_{amb}	-65 to +150	$^\circ\text{C}$
Thermal resistance from junction to ambient *	$R_{th(j-a)}$	500	K/W

* Transistor mounted on an FR4 printed-circuit board.

BCX70 series

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter		Symbol	Testconditions	Min	Typ	Max	Unit
Collector cutoff current		I_{CBO}	$I_E = 0; V_{CB} = 45\text{ V}$			20	nA
		I_{CBO}	$I_E = 0; V_{CB} = 45\text{ V}; T_j = 150^\circ\text{C}$			20	μA
Emitter cutoff current		I_{EBO}	$I_C = 0; V_{EB} = 4\text{ V}$			20	nA
	BCX70G	h_{FE}	$I_C = 10\text{ }\mu\text{A}; V_{CE} = 5\text{ V}$				
	BCX70H			40			
	BCX70J			30			
	BCX70K			100			
DC current gain	BCX70G	h_{FE}	$I_C = 2\text{ mA}; V_{CE} = 5\text{ V}$	120		220	
	BCX70H			180		310	
	BCX70J			250		460	
	BCX70K			380		630	
DC current gain	BCX70G	h_{FE}	$I_C = 50\text{ mA}; V_{CE} = 1\text{ V}$	50			
	BCX70H			70			
	BCX70J			90			
	BCX70K			100			
Collector-emitter saturation voltage	$V_{CE(sat)}$		$I_C = 10\text{ mA}; I_B = 0.25\text{ mA}$	50		350	mV
			$I_C = 50\text{ mA}; I_B = 1.25\text{ mA}$	100		550	mV
Base to emitter saturation voltage	$V_{BE(sat)}$		$I_C = 10\text{ mA}; I_B = 0.25\text{ mA}$	600		850	mV
			$I_C = 50\text{ mA}; I_B = 1.25\text{ mA}$	700		1050	mV
Base to emitter voltage	V_{BE}		$I_C = 2\text{ mA}; V_{CE} = 5\text{ V}$	550	650	750	mV
Collector capacitance	C_C		$I_E = I_C = 0; V_{CB} = 10\text{ V}; f = 1\text{ MHz}$		1.7		pF
Emitter capacitance	C_e		$I_C = I_E = 0; V_{EB} = 0.5\text{ V}; f = 1\text{ MHz}$		11		pF
Transition frequency *	f_T		$I_C = 10\text{ mA}; V_{CE} = 5\text{ V}; f = 100\text{ MHz}$	100	250		MHz
Noise figure	NF		$I_C = 200\text{ }\mu\text{A}; V_{CE} = 5\text{ V}; R_s = 2\text{ k}\Omega; f = 1\text{ kHz}; B = 200\text{ Hz}$		2	6	dB

* Pulse test: $t_p \leq 300\text{ }\mu\text{s}; d \leq 0.02$.

■ hFE Classification

Type Number	BCX70G	BCX70H	BCX70J	BCX70K
Marking	AG	AH	AJ	AK