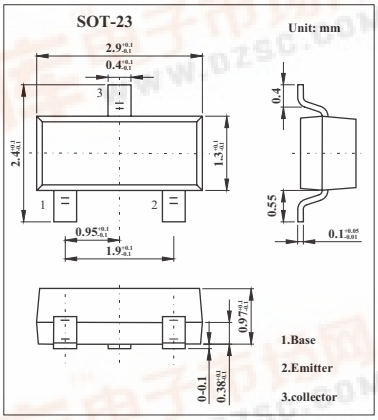
NPN General Purpose Transistors

BCX70 series



■ Features

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

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	45	V
Collector-emitter voltage	V_{CEO}	45	V
Emitter-base voltage	V_{EBO}	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	℃
Storage temperature	T_{stg}	-65 to +150	℃
Operating ambient temperature	T_{amb}	-65 to +150	℃
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 Ta = 25℃

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

* Pulse test: tp ⩽ 300 μs; d ⩽ 0.02.

■ h_{FE} Classification

Type Number	BCX70G	BCX70H	BCX70J	BCX70K
Marking	AG	AH	AJ	AK