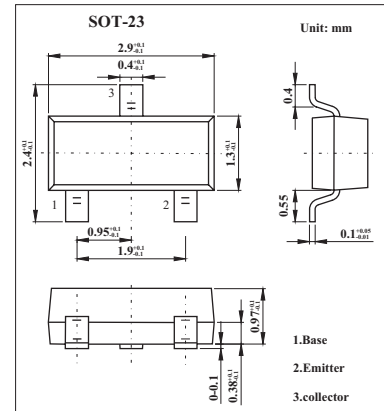


## PNP General Purpose Transistors

## BCW89

## ■ Features

- Low current (max. 100 mA).
- Low voltage (max. 60 V).

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

Parameter	Symbol	Rating	Unit
Collector-base voltage	$V_{CB0}$	-80	V
Collector-emitter voltage	$V_{CE0}$	-60	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
Total power dissipation	$P_{tot}$	250	mW
Storage temperature	$T_{stg}$	-65 to +150	$^\circ\text{C}$
Junction temperature	$T_j$	150	$^\circ\text{C}$
Operating ambient temperature	$R_{amb}$	-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.

**BCW89**■ Electrical Characteristics  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector cutoff current	$I_{CBO}$	$I_E = 0; V_{CB} = -20\text{ V}$			-100	nA
	$I_{CBO}$	$I_E = 0; V_{CB} = -20\text{ V}; T_j = 100\text{ }^\circ\text{C}$			-10	$\mu\text{A}$
Emitter cutoff current	$I_{EBO}$	$I_C = 0; V_{EB} = -5\text{ V}$			-100	nA
DC current gain	$h_{FE}$	$I_C = -10\text{ }\mu\text{A}; V_{CE} = -5\text{ V}$		90		
		$I_C = -2\text{ mA}; V_{CE} = -5\text{ V}$	120		260	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -10\text{ mA}; I_B = -0.5\text{ mA}$		-80	-300	mV
		$I_C = -50\text{ mA}; I_B = -2.5\text{ mA}$		-150		mV
Base to emitter saturation voltage	$V_{BE(sat)}$	$I_C = -10\text{ mA}; I_B = -0.5\text{ mA}$		-720		mV
		$I_C = -50\text{ mA}; I_B = -2.5\text{ mA}$		-810		mV
Base to emitter voltage	$V_{BE}$	$I_C = -2\text{ mA}; V_{CE} = -5\text{ V}$	-600		-750	mV
Collector capacitance	$C_C$	$I_E = I_C = 0; V_{CB} = -10\text{ V}; f = 1\text{ MHz}$		4.5		pF
Transition frequency	$f_T$	$I_C = -10\text{ mA}; V_{CE} = -5\text{ V}; f = 100\text{ MHz}$	100			MHz
Noise figure	NF	$I_C = -200\text{ }\mu\text{A}; V_{CE} = -5\text{ V}; R_S = 2\text{ k}\Omega;$ $f = 1\text{ kHz}; B = 200\text{ Hz}$			10	dB

## ■ Marking

Marking	H3
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