

## NPN General Purpose Transistors

## BCW71,BCW72

## ■ Features

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

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

Parameter	Symbol	Rating	Unit
Collector-base voltage	$V_{CB0}$	50	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
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.

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## ■ Electrical Characteristics Ta = 25°C

Parameter		Symbol	Testconditions	Min	Typ	Max	Unit
Collector cutoff current		ICBO	IE = 0; VCB = 20 V			100	nA
		ICBO	IE = 0; VCB = 20 V; Tj = 100 °C			10	μA
Emitter cutoff current		IEBO	IC = 0; VEB = 5 V			100	μA
DC current gain	BCW71	hFE	IC = 10 μA; VCE = 5 V		90		
	BCW72				150		
DC current gain	BCW71	hFE	IC = 2 mA; VCE = 5 V	110		120	
	BCW72			200		450	
Collector-emitter saturation voltage		VCE(sat)	IC = 10 mA; IB = 0.5 mA		120	250	mV
			IC = 50 mA; IB = 2.5 mA		210		mV
Base to emitter saturation voltage		VBE(sat)	IC = 10 mA; IB = 0.5 mA		750		mV
			IC = 50 mA; IB = 2.5 mA		850		mV
Base to emitter voltage		VBE	IC = 2 mA; VCE = 5 V	550		700	mV
Collector capacitance		Cc	IE = ie = 0; VCB = 10 V; f = 1 MHz		2.5		pF
Transition frequency		fT	IC = 10 mA; VCE = 5 V; f = 100 MHz	100			MHz
Noise figure		NF	IC = 200 μA; VCE = 5 V; Rs = 2 kΩ; f = 1 kHz; B = 200 Hz			10	dB

## ■ hFE Classification

TYPE	BCW71	BCW72
Marking	K1	K2