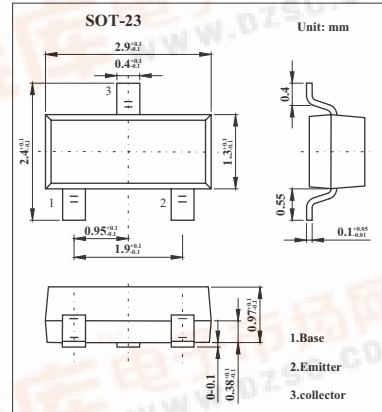


SMD Type Transistors

NPN General Purpose Transistors  
BCW71,BCW72

■ Features

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



■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector-base voltage	V <sub>CB0</sub>	50	V
Collector-emitter voltage	V <sub>CE0</sub>	45	V
Emitter-base voltage	V <sub>EB0</sub>	5	V
Collector current	I <sub>c</sub>	100	mA
Peak collector current	I <sub>CM</sub>	200	mA
Peak base current	I <sub>BM</sub>	200	mA
Total power dissipation	P <sub>tot</sub>	250	mW
Storage temperature	T <sub>stg</sub>	-65 to +150	°C
Junction temperature	T <sub>j</sub>	150	°C
Operating ambient temperature	R <sub>amb</sub>	-65 to +150	°C
Thermal resistance from junction to ambient *	R <sub>th j-a</sub>	500	K/W

\* Transistor mounted on an FR4 printed-circuit board.

**BCW71,BCW72**■ Electrical Characteristics  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector cutoff current	ICBO	$I_E = 0; V_{CB} = 20\text{ V}$			100	nA
	ICBO	$I_E = 0; V_{CB} = 20\text{ V}; T_j = 100^\circ\text{C}$			10	$\mu\text{A}$
Emitter cutoff current	IEBO	$I_C = 0; V_{EB} = 5\text{ V}$			100	$\mu\text{A}$
DC current gain	BCW71	$I_C = 10\ \mu\text{A}; V_{CE} = 5\text{ V}$		90		
	BCW72			150		
DC current gain	BCW71	$I_C = 2\text{ mA}; V_{CE} = 5\text{ V}$	110		120	
	BCW72		200		450	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 10\text{ mA}; I_B = 0.5\text{ mA}$		120	250	mV
		$I_C = 50\text{ mA}; I_B = 2.5\text{ mA}$		210		mV
Base to emitter saturation voltage	$V_{BE(sat)}$	$I_C = 10\text{ mA}; I_B = 0.5\text{ mA}$		750		mV
		$I_C = 50\text{ mA}; I_B = 2.5\text{ mA}$		850		mV
Base to emitter voltage	$V_{BE}$	$I_C = 2\text{ mA}; V_{CE} = 5\text{ V}$	550		700	mV
Collector capacitance	$C_C$	$I_E = I_C = 0; V_{CB} = 10\text{ V}; f = 1\text{ MHz}$		2.5		pF
Transition frequency	$f_T$	$I_C = 10\text{ mA}; V_{CE} = 5\text{ V}; f = 100\text{ MHz}$	100			MHz
Noise figure	NF	$I_C = 200\ \mu\text{A}; V_{CE} = 5\text{ V}; R_s = 2\text{ k}\Omega;$ $f = 1\text{ kHz}; B = 200\text{ Hz}$			10	dB

## ■ hFE Classification

TYPE	BCW71	BCW72
Marking	K1	K2