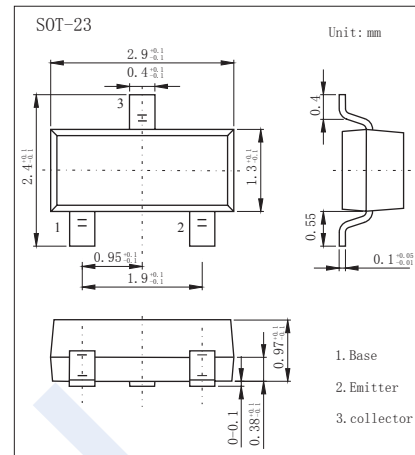


## NPN Transistors

## BCW71~BCW72 (KCW71~KCW72)

## ■ Features

- Low current (100 mA)
- Low voltage (45 V)
- Low noise.
- PNP complements: BCW69 and BCW70.

■ 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	
Emitter - Base Voltage	$V_{EB0}$	5	
Collector Current - Continuous	$I_C$	100	mA
Peak Collector Current	$I_{CM}$	200	
Peak Base Current	$I_{BM}$	200	
Collector Power Dissipation	$P_C$	250	mW
Thermal Resistance From Junction to Ambient (Note.1)	$R_{thja}$	500	K/W
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to 150	

Note.1: Transistor mounted on an FR4 printed-circuit board.

## NPN Transistors

## BCW71~BCW72 (KCW71~KCW72)

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V <sub>CB0</sub>	I <sub>C</sub> = 100 μA, I <sub>E</sub> = 0	50			V
Collector- emitter breakdown voltage	V <sub>CE0</sub>	I <sub>C</sub> = 2 mA, I <sub>B</sub> = 0	45			
Emitter - base breakdown voltage	V <sub>EB0</sub>	I <sub>E</sub> = 100 μA, I <sub>C</sub> = 0	5			
Collector-base cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> = 20 V, I <sub>E</sub> = 0			100	nA
		V <sub>CB</sub> = 20 V, I <sub>E</sub> = 0, T <sub>J</sub> =100°C			10	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> = 5V, I <sub>C</sub> =0			100	nA
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =10 mA, I <sub>B</sub> =0.5mA		120	250	mV
		I <sub>C</sub> =50 mA, I <sub>B</sub> =2.5mA		210		
Base - emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =10 mA, I <sub>B</sub> =0.5mA		750		
		I <sub>C</sub> =50 mA, I <sub>B</sub> =2.5mA		850		
Base - emitter voltage	V <sub>BE</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 2mA	550		700	
DC current gain	BCW71 BCW72	h <sub>FE</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 10μA		90	
						150
DC current gain	BCW71 BCW72	h <sub>FE</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 2mA	110		220
				200		450
Collector capacitance	C <sub>c</sub>	V <sub>CB</sub> = 10V, I <sub>E</sub> =I <sub>C</sub> = 0, f=1MHz		2.5		pF
Noise figure	NF	I <sub>C</sub> = 200 μA; V <sub>CE</sub> = 5 V; R <sub>S</sub> = 2 kΩ; f = 1 kHz; B = 200 Hz			10	dB
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = 5V, I <sub>C</sub> = 10mA, f=100MHz	100			MHz

■ Classification of h<sub>FE</sub>(2)

Type	BCW71	BCW72
Range	110-220	200-450
Marking	K1*	K2*