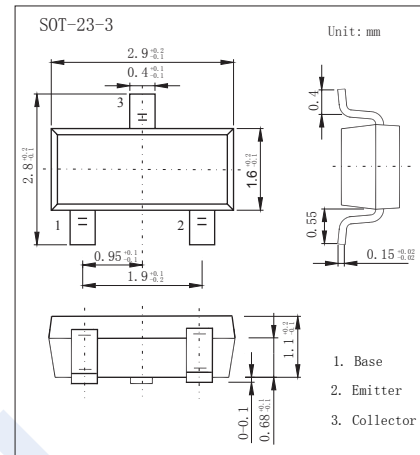


## PNP Transistors

## BCW69~BCW70 (KCW69~KCW70)

## ■ Features

- Low current (max. 100 mA)
- Low voltage (max. 45 V).
- NPN complements: BCW71 and BCW72.

■ 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)	$R_{th(j-a)}$	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.

## PNP Transistors

## BCW69~BCW70 (KCW69~KCW70)

## ■ 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>CEO</sub>	I <sub>C</sub> = -1 mA, I <sub>B</sub> =0	-45			
Emitter - base breakdown voltage	V <sub>EBO</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		-80	-300	mV
		I <sub>C</sub> =-50 mA, I <sub>B</sub> =-2.5mA(Note.1)		-150		
Base - emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =-10 mA, I <sub>B</sub> =-0.5mA		-720		
		I <sub>C</sub> =-50 mA, I <sub>B</sub> =-2.5mA(Note.1)		-810		
Base - emitter voltage	V <sub>BE</sub>	V <sub>CE</sub> = -5V, I <sub>C</sub> = -2mA	-600		-750	
DC current gain	BCW69 BCW70	h <sub>FE</sub>	V <sub>CE</sub> = -5V, I <sub>C</sub> = -10μA		90	
					150	
DC current gain	BCW69 BCW70	h <sub>FE</sub>	V <sub>CE</sub> = -5V, I <sub>C</sub> = -2mA	120		260
				215		500
Collector capacitance	C <sub>c</sub>	V <sub>CB</sub> = -10V, I <sub>E</sub> =I <sub>C</sub> =0, f=1MHz		4.5		pF
Noise figure	NF	V <sub>CE</sub> = -5V, I <sub>C</sub> =-200μA, R <sub>S</sub> =2KΩ f=1MHz, B=200Hz			10	dB
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = -5V, I <sub>C</sub> = -10mA, f=100MHz	100			MHz

Note.1: Pulse test: t<sub>p</sub> ≤ 300 μs; δ ≤ 0.02.

■ Classification of h<sub>FE</sub>(2)

Type	BCW69	BCW70
Range	120-260	215-500
Marking	H1*	H2*