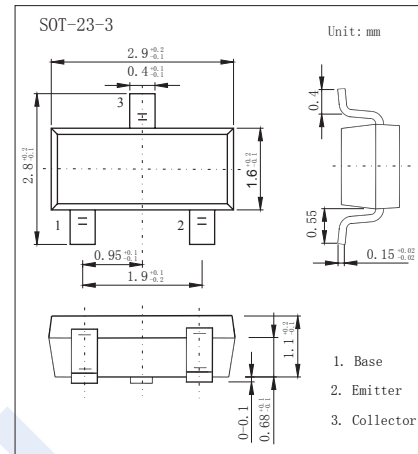


## NPN Transistors

## BCW65 (KCW65)

## ■ Features

- Collector Current Capability  $I_c=800\text{mA}$
- Collector Emitter Voltage  $V_{CE0}=32\text{V}$
- General Purpose Transistor

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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	$V_{CB0}$	60	V
Collector - Emitter Voltage	$V_{CE0}$	32	
Emitter - Base Voltage	$V_{EB0}$	5	
Collector Current - Continuous	$I_c$	800	mA
Collector Power Dissipation	$P_c$	225	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	556	$^\circ\text{C/W}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to 150	

## NPN Transistors

## BCW65 (KCW65)

## ■ 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	60			V	
Collector- emitter breakdown voltage	V <sub>CEO</sub>	I <sub>C</sub> = 10 mA, I <sub>B</sub> = 0	32				
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>CB0</sub>	V <sub>CB</sub> = 32 V, I <sub>E</sub> = 0			20	nA	
Emitter cut-off current	I <sub>EB0</sub>	V <sub>EB</sub> = 4V, I <sub>C</sub> =0			20		
Collector-emitter saturation voltage (Note.1)	V <sub>CE(sat)</sub>	I <sub>C</sub> =100 mA, I <sub>B</sub> =10mA			0.3	V	
		I <sub>C</sub> = 500 mA, I <sub>B</sub> = 50mA			0.7		
Base - emitter saturation voltage (Note.1)	V <sub>BE(sat)</sub>	I <sub>C</sub> = 500 mA, I <sub>B</sub> = 50mA			2		
DC current gain	BCW65A BCW65B/BCW65C	h <sub>FE(1)</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 100μA (Note.1)	35			
				80			
DC current gain	BCW65A BCW65B/BCW65C	h <sub>FE(2)</sub>	V <sub>CE</sub> = 1V, I <sub>C</sub> = 10mA (Note.1)	75			
				180			
DC current gain	BCW65A BCW65B BCW65C	h <sub>FE(3)</sub>	V <sub>CE</sub> = 1V, I <sub>C</sub> = 100mA (Note.1)	100		250	
				160		400	
				250		630	
DC current gain	BCW65A BCW65B/BCW65C	h <sub>FE(4)</sub>	V <sub>CE</sub> = 2V, I <sub>C</sub> = 500mA (Note.1)	35			
				100			
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 6V, I <sub>E</sub> = 0, f=1MHz			12	pF	
Collector input capacitance	C <sub>ib</sub>	V <sub>EB</sub> = 0.5V, I <sub>C</sub> = 0, f=1MHz			80		
Noise figure	NF	V <sub>CE</sub> = 5V, I <sub>C</sub> = 0.2mA R <sub>S</sub> =1KΩ, f=1MHz, BW=200Hz			10	dB	
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 20mA, f=100MHz	100			MHz	

Note.1: Pulse test: pulse width ≤300μs, duty cycle ≤2.0%.

■ Classification of h<sub>FE(3)</sub>

Type	BCW65A	BCW65B	BCW65C
Range	100-250	160-400	250-630
Marking	EA	EB	EC