

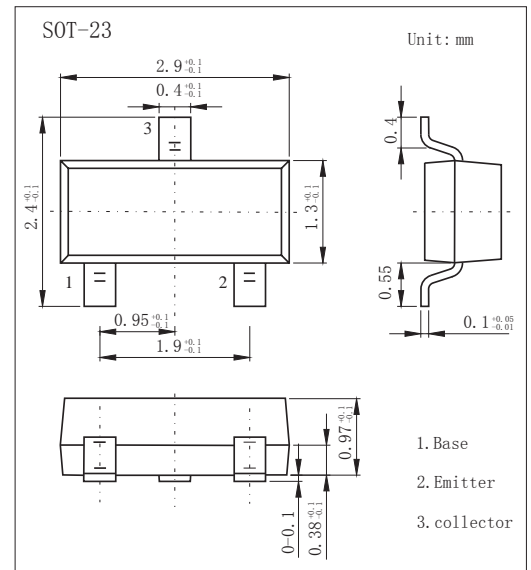
## SOT-23 Plastic-Encapsulate Transistors

### Features

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

### MECHANICAL DATA

- Case style:SOT-23molded plastic
- Mounting position:any



## MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

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	°C/W
Junction Temperature	$T_j$	150	°C
Storage Temperature Range	$T_{stg}$	-55 to 150	

### PACKAGE INFORMATION

Device	Package	Shipping
BCW65	SOT-23	3000/Tape&Reel

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	$V_{CB0}$	$I_c=100\mu\text{A}, I_E=0$	60			V
Collector- emitter breakdown voltage	$V_{CE0}$	$I_c=10\text{mA}, I_B=0$	32			
Emitter - base breakdown voltage	$V_{EB0}$	$I_E=100\mu\text{A}, I_c=0$	5			
Collector-base cut-off current	$I_{CB0}$	$V_{CB}=32\text{V}, I_E=0$			20	nA
Emitter cut-off current	$I_{EB0}$	$V_{EB}=4\text{V}, I_c=0$			20	
Collector-emitter saturation voltage (Note.1)	$V_{CE(sat)}$	$I_c=100\text{mA}, I_B=10\text{mA}$			0.3	V
		$I_c=500\text{mA}, I_B=50\text{mA}$			0.7	
Base - emitter saturation voltage (Note.1)	$V_{BE(sat)}$	$I_c=500\text{mA}, I_B=50\text{mA}$			2	
DC current gain	BCW65A BCW65B/BCW65C	$V_{CE}=10\text{V}, I_c=100\mu\text{A}$ (Note.1)	35			
			80			
DC current gain	BCW65A BCW65B/BCW65C	$V_{CE}=1\text{V}, I_c=10\text{mA}$ (Note.1)	75			
			180			
DC current gain	BCW65A BCW65B BCW65C	$V_{CE}=1\text{V}, I_c=100\text{mA}$ (Note.1)	100		250	
			160		400	
			250		630	
DC current gain	BCW65A BCW65B/BCW65C	$V_{CE}=2\text{V}, I_c=500\text{mA}$ (Note.1)	35			
			100			
Collector output capacitance	$C_{ob}$	$V_{CB}=6\text{V}, I_E=0, f=1\text{MHz}$			12	pF
Collector input capacitance	$C_{ib}$	$V_{EB}=0.5\text{V}, I_c=0, f=1\text{MHz}$			80	
Noise figure	NF	$V_{CE}=5\text{V}, I_c=0.2\text{mA}$ $R_s=1\text{K}\Omega, f=1\text{MHz}, BW=200\text{Hz}$			10	dB
Transition frequency	$f_t$	$V_{CE}=10\text{V}, I_c=20\text{mA}, f=100\text{MHz}$	100			MHz

Note.1: Pulse test: pulse width  $\leq 300\mu\text{s}$ , duty cycle  $\leq 2.0\%$ .

### Classification of $h_{fe(3)}$

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