



# FUKUCOM COMPANY LTD.

福 靈 有 限 公 司

FLAT P, 3/F., EVEREST INDUSTRIAL CENTRE, 396 KWUN TONG ROAD,  
KWUN TONG, KOWLOON, HONG KONG.

TEL: 852-2790 0314 FAX: 852-2790 0206

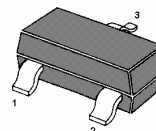
## BCW60

### NPN Silicon Epitaxial Planar Transistors

for general purpose switching and amplification.

These transistors are subdivided into three groups B, C and D, according to their current gain.

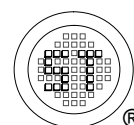
As complementary types the PNP transistors BCW61 are recommended.



1. Base 2. Emitter 3. Collector  
SOT-23 Plastic Package

### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Value	Unit
Collector-Base Voltage	$V_{CBO}$	32	V
Collector-Emitter Voltage	$V_{CEO}$	32	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	100	mA
Peak Collector Current	$I_{CM}$	200	mA
Peak Base Current	$I_{BM}$	200	mA
Total Power Dissipation	$P_{tot}$	200	mW
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_S$	-65 to +150	$^\circ\text{C}$



Dated : 21/12/2005



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## BCW60

### Characteristics at $T_a = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain					
at $V_{CE} = 5\text{ V}$ , $I_C = 10\text{ }\mu\text{A}$	BCW60B	$h_{FE}$	20	-	-
	BCW60C	$h_{FE}$	40	-	-
	BCW60D	$h_{FE}$	100	-	-
at $V_{CE} = 5\text{ V}$ , $I_C = 2\text{ mA}$	BCW60B	$h_{FE}$	180	-	310
	BCW60C	$h_{FE}$	250	-	460
	BCW60D	$h_{FE}$	380	-	630
at $V_{CE} = 1\text{ V}$ , $I_C = 50\text{ mA}$	BCW60B	$h_{FE}$	70	-	-
	BCW60C	$h_{FE}$	90	-	-
	BCW60D	$h_{FE}$	100	-	-
Collector Saturation Voltage					
at $I_C = 10\text{ mA}$ , $I_B = 0.25\text{ mA}$	$V_{CEsat}$	0.05	-	0.35	V
Collector Saturation Voltage					
at $I_C = 50\text{ mA}$ , $I_B = 1.25\text{ mA}$	$V_{CEsat}$	0.1	-	0.55	V
Base Saturation Voltage					
at $I_C = 10\text{ mA}$ , $I_B = 0.25\text{ mA}$	$V_{BEsat}$	0.6	-	0.85	V
Base Saturation Voltage					
at $I_C = 50\text{ mA}$ , $I_B = 1.25\text{ mA}$	$V_{BEsat}$	0.7	-	1.05	V
Base-Emitter Voltage					
at $I_C = 2\text{ mA}$ , $V_{CE} = 5\text{ V}$	$V_{BE(on)}$	0.55	-	0.75	V
Collector Base Cutoff Current					
at $V_{CB} = 32\text{ V}$	$I_{CBO}$	-	-	20	nA
at $V_{CB} = 32\text{ V}$ , $T_j = 150\text{ }^\circ\text{C}$	$I_{CBO}$	-	-	20	$\mu\text{A}$
Emitter-Base Cutoff Current					
at $V_{EB} = 4\text{ V}$	$I_{EBO}$	-	-	20	nA
Gain -Bandwidth Product					
at $V_{CE} = 5\text{ V}$ , $I_C = 10\text{ mA}$ , $f = 100\text{ MHz}$	$f_T$	100	250	-	MHz
Collector-Base Capacitance					
at $V_{CB} = 10\text{ V}$ , $f = 1\text{ MHz}$	$C_{CBO}$	-	1.7	-	pF
Emitter-Base Capacitance					
at $V_{EB} = 0.5\text{ V}$ , $f = 1\text{ MHz}$	$C_{EBO}$	-	11	-	pF
Noise figure					
at $I_C = 200\text{ }\mu\text{A}$ , $V_{CE} = 5\text{ V}$ , $R_S = 2\text{ K}\Omega$ , $f = 1\text{ KHz}$ , $\Delta f = 200\text{ Hz}$	NF	-	2	6	dB
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	-	-	500 <sup>1)</sup>	K/W

<sup>1)</sup> Transistor mounted on an FR4 printed-circuit board.

