

Not Recommended for New Design  
Please Use BCW66H

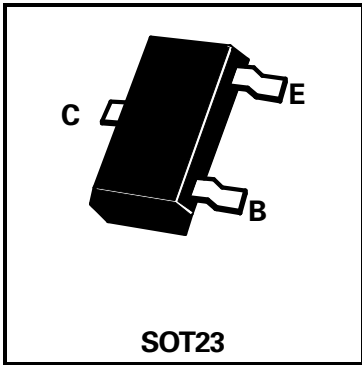
## SOT23 NPN SILICON PLANAR MEDIUM POWER TRANSISTORS

**BCW65**  
**BCW66**

ISSUE 3 - AUGUST 1995

PARTMARKING DETAILS –

BCW65A – EA	BCW65AR – 4V
BCW65B – EB	BCW65BR – 5V
BCW65C – EC	BCW65CR – 6V
BCW66F – EF	BCW66FR – 7P
BCW66G – EG	BCW66GR – 5T
BCW66H – EH	BCW66HR – 7M



COMPLEMENTARY TYPES –

BCW65 – BCW67
BCW66 – BCW68

### ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	BCW65	BCW66	UNIT
Collector-Base Voltage	$V_{CBO}$	60	75	V
Collector-Emitter Voltage	$V_{CEO}$	32	45	V
Emitter-Base Voltage	$V_{EBO}$	5		V
Continuous Collector Current	$I_C$	800		mA
Peak Collector Current(10ms)	$I_{CM}$	1000		mA
Base Current	$I_B$	100		mA
Power Dissipation at $T_{amb}=25^{\circ}C$	$P_{tot}$	330		mW
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +150		$^{\circ}C$

# BCW65 BCW66

## ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated).

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Emitter Breakdown Voltage	BCW65 BCW66	$V_{(BR)CEO}$	32 45			V $I_{CEO}=10\text{mA}$ $I_{CEO}=10\text{mA}$
	BCW65 BCW66	$V_{(BR)CES}$	60 75			V $I_C=10\mu\text{A}$ $I_C=10\mu\text{A}$
Emitter-Base Breakdown Voltage		$V_{(BR)EBO}$	5			V $I_{EBO}=10\mu\text{A}$
Collector-Emitter Cut-off Current	BCW65  BCW66	$I_{CES}$			20 20  20 20	nA $V_{CES} = 32\text{V}$ $V_{CES} = 32\text{V}, T_{amb}=150^{\circ}\text{C}$  nA $V_{CES} = 45\text{V}$ $V_{CES} = 45\text{V}, T_{amb}=150^{\circ}\text{C}$ $\mu\text{A}$
Emitter-Base Cut-Off Current		$I_{EBO}$			20	nA $V_{EBO}=4\text{V}$
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$			0.3 0.7	V $I_C=100\text{mA}, I_B=10\text{mA}$ $I_C=500\text{mA}, I_B=50\text{mA}^*$
Base-Emitter Saturation Voltage		$V_{BE(SAT)}$			2	V $I_C=500\text{mA}, I_B=50\text{mA}^*$
Static Forward Current Transfer	BCW65A BCW66F	$h_{FE}$	35 75 100 35	160	250	$I_C=100\mu\text{A}, V_{CE}=10\text{V}$ $I_C=10\text{mA}, V_{CE}=1\text{V}$ $I_C=100\text{mA}, V_{CE}=1\text{V}^*$ $I_C=500\text{mA}, V_{CE}=2\text{V}^*$
	BCW65B BCW66G	$h_{FE}$	50 110 160 60	250	400	$I_C=100\mu\text{A}, V_{CE}=10\text{V}$ $I_C=10\text{mA}, V_{CE}=1\text{V}$ $I_C=100\text{mA}, V_{CE}=1\text{V}^*$ $I_C=500\text{mA}, V_{CE}=2\text{V}^*$
	BCW65C BCW66H	$h_{FE}$	80 180 250 100	350	630	$I_C=100\mu\text{A}, V_{CE}=10\text{V}$ $I_C=10\text{mA}, V_{CE}=1\text{V}$ $I_C=100\text{mA}, V_{CE}=1\text{V}^*$ $I_C=500\text{mA}, V_{CE}=2\text{V}^*$
Transition Frequency		$f_T$	100			MHz $I_C=20\text{mA}, V_{CE}=10\text{V}$ $f=100\text{MHz}$
Collector-Base Capacitance		$C_{cbo}$		8	12	pF $V_{CBO}=10\text{V}, f=1\text{MHz}$
Emitter-Base Capacitance		$C_{ebo}$			80	pF $V_{EBO}=0.5\text{V}, f=1\text{MHz}$
Noise Figure		N		2	10	dB $I_C=0.2\text{mA}, V_{CE}=5\text{V}$ $R_G=1\text{k}\Omega$
Switching times: Turn-On Time Turn-Off Time		$t_{on}$ $t_{off}$			100 400	ns ns $I_C=150\text{mA}$ $I_{B1}=I_{B2}=15\text{mA}$ $R_L=150\Omega$

Spice parameter data is available upon request for this device

\*Measured under pulsed conditions. Pulse width=300 $\mu\text{s}$ . Duty cycle  $\leq 2\%$