

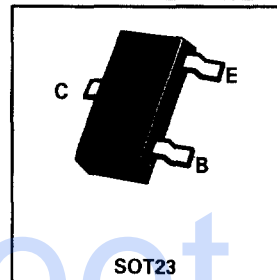
# SOT23 NPN SILICON PLANAR MEDIUM POWER TRANSISTORS

**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	BCW66HF - 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	$V_{(BR)CEO}$	32			V	$I_{CE0}=10\text{mA}$ $I_{CE0}=10\text{mA}$
	BCW66	$V_{(BR)CEO}$	45			V	$I_{CE0}=10\text{mA}$ $I_{CE0}=10\text{mA}$
	BCW65	$V_{(BR)CES}$	60			V	$I_C=10\mu\text{A}$ $I_C=10\mu\text{A}$
	BCW66	$V_{(BR)CES}$	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	$I_{CES}$			20	nA	$V_{CES} = 32\text{V}$ $V_{CES} = 32\text{V}, T_{amb}=150^{\circ}\text{C}$
	BCW66	$I_{CES}$			20	nA	$V_{CES} = 45\text{V}$ $V_{CES} = 45\text{V}, T_{amb}=150^{\circ}\text{C}$
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	160	250		$I_C=100\mu\text{A}, V_{CE}=10\text{V}$ $I_C=10\text{mA}, V_{CE}=1\text{V}$ $I_C=100\text{mA}, V_{CE}=1\text{V}^*$ $I_C=500\text{mA}, V_{CE}=2\text{V}^*$
			75				
			100				
			35				
	BCW65B BCW66G	$h_{FE}$	50	250	400		$I_C=100\mu\text{A}, V_{CE}=10\text{V}$ $I_C=10\text{mA}, V_{CE}=1\text{V}$ $I_C=100\text{mA}, V_{CE}=1\text{V}^*$ $I_C=500\text{mA}, V_{CE}=2\text{V}^*$
			110				
BCW65C BCW66H	$h_{FE}$	80	350	630		$I_C=100\mu\text{A}, V_{CE}=10\text{V}$ $I_C=10\text{mA}, V_{CE}=1\text{V}$ $I_C=100\text{mA}, V_{CE}=1\text{V}^*$ $I_C=500\text{mA}, V_{CE}=2\text{V}^*$	
		180					
			250				
			100				
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		$t_{on}$			100	ns	$I_C=150\text{mA}$ $I_{B1}=I_{B2}=15\text{mA}$ $R_L=150\Omega$
					400		
Turn-Off Time		$t_{off}$				ns	

Spice parameter data is available upon request for this device

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