

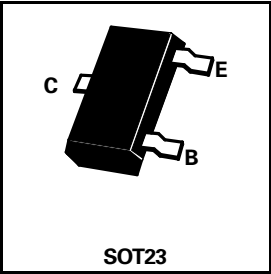
SOT23 NPN SILICON PLANAR MEDIUM POWER TRANSISTORS

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 | nA μA | $V_{CES} = 32\text{V}$ $V_{CES} = 32\text{V}, T_{amb}=150^{\circ}\text{C}$ $V_{CES} = 45\text{V}$ $V_{CES} = 45\text{V}, T_{amb}=150^{\circ}\text{C}$ |
| 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 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 μs . Duty cycle $\leq 2\%$