

**BCW65 SERIES
BCW66 SERIES**

**SURFACE MOUNT
NPN SILICON TRANSISTOR**



www.centrasemi.com



SOT-23 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR BCW65 and BCW66 Series types are NPN Silicon Transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for general purpose switching and amplifier applications.

MARKING CODE: SEE MARKING CODE TABLE ON FOLLOWING PAGE

MAXIMUM RATINGS: ($T_A=25^\circ\text{C}$)

| |
|--|
| Collector-Base Voltage |
| Collector-Emitter Voltage |
| Emitter-Base Voltage |
| Continuous Collector Current |
| Peak Collector Current |
| Continuous Base Current |
| Peak Base Current |
| Power Dissipation |
| Operating and Storage Junction Temperature |
| Thermal Resistance |

| SYMBOL | <u>BCW65</u> | <u>BCW66</u> | UNITS |
|----------------|--------------|--------------|--------------------|
| V_{CB0} | 60 | 75 | V |
| V_{CE0} | 32 | 45 | V |
| V_{EBO} | 5.0 | | V |
| I_C | 800 | | mA |
| I_{CM} | 1.0 | | A |
| I_B | 100 | | mA |
| I_{BM} | 200 | | mA |
| P_D | 350 | | mW |
| T_J, T_{stg} | -65 to +150 | | $^\circ\text{C}$ |
| θ_{JA} | 357 | | $^\circ\text{C/W}$ |

ELECTRICAL CHARACTERISTICS: ($T_A=25^\circ\text{C}$ unless otherwise noted)

| SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|---------------|---|-----|-----|------|---------------|
| I_{CB0} | $V_{CB}=\text{Rated } V_{CE0}$ | | | 20 | nA |
| I_{CBO} | $V_{CB}=\text{Rated } V_{CE0}, T_A=150^\circ\text{C}$ | | | 20 | μA |
| I_{EBO} | $V_{EB}=4.0\text{V}$ | | | 20 | nA |
| BV_{CB0} | $I_C=10\mu\text{A}$ (BCW65) | 60 | | | V |
| BV_{CB0} | $I_C=10\mu\text{A}$ (BCW66) | 75 | | | V |
| BV_{CE0} | $I_C=10\text{mA}$ (BCW65) | 32 | | | V |
| BV_{CE0} | $I_C=10\text{mA}$ (BCW66) | 45 | | | V |
| BV_{EBO} | $I_E=10\mu\text{A}$ | 5.0 | | | V |
| $V_{CE(SAT)}$ | $I_C=100\text{mA}, I_B=10\text{mA}$ | | | 0.3 | V |
| $V_{CE(SAT)}$ | $I_C=500\text{mA}, I_B=50\text{mA}$ | | | 0.7 | V |
| $V_{BE(SAT)}$ | $I_C=100\text{mA}, I_B=10\text{mA}$ | | | 1.25 | V |
| $V_{BE(SAT)}$ | $I_C=500\text{mA}, I_B=50\text{mA}$ | | | 2.0 | V |
| f_T | $V_{CE}=5.0\text{V}, I_C=50\text{mA}, f=20\text{MHz}$ | | 170 | | MHz |
| C_c | $V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$ | | 6.0 | | pF |
| C_e | $V_{EB}=0.5\text{V}, I_C=0, f=1.0\text{MHz}$ | | 60 | | pF |

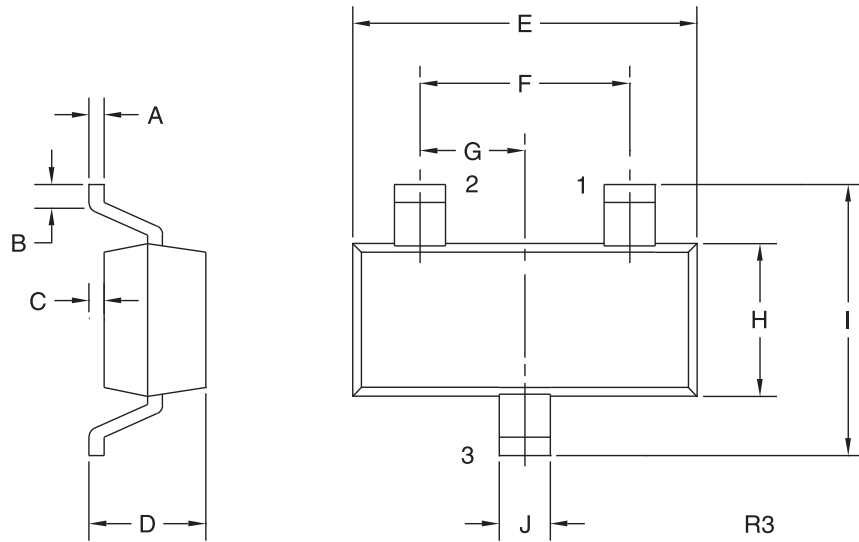
| | TEST CONDITIONS | <u>BCW65A</u> | | <u>BCW65B</u> | | <u>BCW65C</u> | |
|----------|---|---------------|-----|---------------|-----|---------------|-----|
| | | MIN | MAX | MIN | MAX | MIN | MAX |
| h_{FE} | $V_{CE}=10\text{V}, I_C=100\mu\text{A}$ | 35 | | 50 | | 80 | |
| h_{FE} | $V_{CE}=1.0\text{V}, I_C=10\text{mA}$ | 75 | | 110 | | 180 | |
| h_{FE} | $V_{CE}=1.0\text{V}, I_C=100\text{mA}$ | 100 | 250 | 160 | 400 | 250 | 630 |
| h_{FE} | $V_{CE}=2.0\text{V}, I_C=500\text{mA}$ | 35 | | 60 | | 100 | |

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SOT-23 CASE - MECHANICAL OUTLINE



LEAD CODE:

- 1) BASE
- 2) EMITTER
- 3) COLLECTOR

| DEVICE | MARKING CODE |
|--------|--------------|
| BCW65A | EA |
| BCW65B | EB |
| BCW65C | EC |
| BCW66F | EF |
| BCW66G | EG |
| BCW66H | EH |

| SYMBOL | DIMENSIONS | | | |
|--------|------------|-------|-------------|------|
| | INCHES | | MILLIMETERS | |
| | MIN | MAX | MIN | MAX |
| A | 0.003 | 0.007 | 0.08 | 0.18 |
| B | 0.006 | - | 0.15 | - |
| C | - | 0.005 | - | 0.13 |
| D | 0.035 | 0.043 | 0.89 | 1.09 |
| E | 0.110 | 0.120 | 2.80 | 3.05 |
| F | 0.075 | | 1.90 | |
| G | 0.037 | | 0.95 | |
| H | 0.047 | 0.055 | 1.19 | 1.40 |
| I | 0.083 | 0.098 | 2.10 | 2.49 |
| J | 0.014 | 0.020 | 0.35 | 0.50 |

SOT-23 (REV: R3)

R2 (20-November 2009)