

**BCX70 SERIES**  
**SURFACE MOUNT**  
**NPN SILICON TRANSISTOR**



[www.centrasemi.com](http://www.centrasemi.com)



**SOT-23 CASE**

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR BCX70 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 CODES:** BCX70G: AG  
BCX70H: AH  
BCX70J: AJ  
BCX70K: AK

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

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

| SYMBOL         |             | UNITS              |
|----------------|-------------|--------------------|
| $V_{CB0}$      | 45          | V                  |
| $V_{CE0}$      | 45          | V                  |
| $V_{EB0}$      | 5.0         | V                  |
| $I_C$          | 100         | mA                 |
| $I_{CM}$       | 200         | mA                 |
| $I_{BM}$       | 200         | mA                 |
| $P_D$          | 350         | mW                 |
| $T_J, T_{stg}$ | -65 to +150 | $^\circ\text{C}$   |
| $\theta_{JA}$  | 357         | $^\circ\text{C/W}$ |

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

| SYMBOL        | TEST CONDITIONS   | MIN  | TYP | MAX  | UNITS         |
|---------------|---|------|-----|------|---------------|
| $I_{CBO}$     | $V_{CB}=45\text{V}$   |      |     | 20   | nA            |
| $I_{CBO}$     | $V_{CB}=45\text{V}, T_A=150^\circ\text{C}$  |      |     | 20   | $\mu\text{A}$ |
| $I_{EBO}$     | $V_{EB}=4.0\text{V}$  |      |     | 20   | nA            |
| $BV_{CBO}$    | $I_C=10\mu\text{A}$   | 45   |     |      | V             |
| $BV_{CEO}$    | $I_C=10\text{mA}$   | 45   |     |      | V             |
| $BV_{EBO}$    | $I_E=1.0\mu\text{A}$  | 5.0  |     |      | V             |
| $V_{CE(SAT)}$ | $I_C=10\text{mA}, I_B=250\mu\text{A}$   | 0.05 |     | 0.35 | V             |
| $V_{CE(SAT)}$ | $I_C=50\text{mA}, I_B=1.25\text{mA}$  | 0.10 |     | 0.55 | V             |
| $V_{BE(SAT)}$ | $I_C=10\text{mA}, I_B=250\mu\text{A}$   | 0.60 |     | 0.85 | V             |
| $V_{BE(SAT)}$ | $I_C=50\text{mA}, I_B=1.25\text{mA}$  | 0.70 |     | 1.05 | V             |
| $V_{BE(ON)}$  | $V_{CE}=5.0\text{V}, I_C=2.0\text{mA}$  | 0.55 |     | 0.75 | V             |
| $f_T$         | $V_{CE}=5.0\text{V}, I_C=10\text{mA}, f=100\text{MHz}$  | 100  | 250 |      | MHz           |
| $C_c$         | $V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$   |      | 1.7 |      | pF            |
| $C_e$         | $V_{EB}=0.5\text{V}, I_C=0, f=1.0\text{MHz}$  |      | 11  |      | pF            |
| NF            | $V_{CE}=5.0\text{V}, I_C=200\mu\text{A}, R_S=2.0\text{k}\Omega, f=1.0\text{kHz}, BW=200\text{Hz}$ |      |     | 6.0  | dB            |

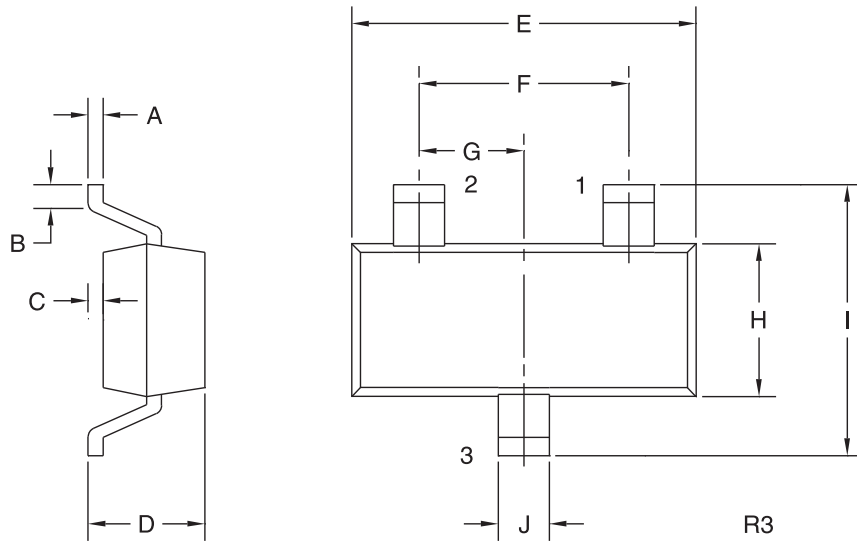
|          |   | <b>BCX70G</b> |     | <b>BCX70H</b> |     | <b>BCX70J</b> |     | <b>BCX70K</b> |     |
|----------|---|---------------|-----|---------------|-----|---------------|-----|---------------|-----|
|          |   | MIN           | MAX | MIN           | MAX | MIN           | MAX | MIN           | MAX |
| $h_{FE}$ | $V_{CE}=5.0\text{V}, I_C=10\mu\text{A}$ |               |     | 40            |     | 30            |     | 100           |     |
| $h_{FE}$ | $V_{CE}=5.0\text{V}, I_C=2.0\text{mA}$  | 120           | 220 | 180           | 310 | 250           | 460 | 380           | 630 |
| $h_{FE}$ | $V_{CE}=1.0\text{V}, I_C=50\text{mA}$   | 50            |     | 70            |     | 90            |     | 100           |     |

R2 (20-November 2009)

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**SOT-23 CASE - MECHANICAL OUTLINE**



**LEAD CODE:**  
1) BASE  
2) EMITTER  
3) COLLECTOR

| DEVICE | MARKING CODE |
|--------|--------------|
| BCX70G | AG           |
| BCX70H | AH           |
| BCX70J | AJ           |
| BCX70K | AK           |

| SYMBOL | 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)

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