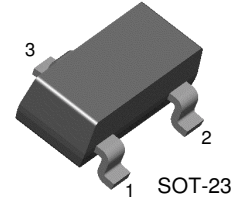


BCW60A/B/C/D

General Purpose Transistor



SOT-23
1. Base 2. Emitter 3. Collector

NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings $T_a=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Value | Units |
|-----------|-----------------------------|-------|------------------|
| V_{CBO} | Collector-Base Voltage | 32 | V |
| V_{CEO} | Collector-Emitter Voltage | 32 | V |
| V_{EBO} | Emitter-Base Voltage | 5 | V |
| I_C | Collector Current | 100 | mA |
| P_C | Collector Power Dissipation | 350 | mW |
| T_{STG} | Storage Temperature | 150 | $^\circ\text{C}$ |

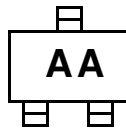
Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Test Condition | Min. | Max. | Units |
|---------------|--------------------------------------|---|------------|--------------|--------|
| BV_{CEO} | Collector-Emitter Breakdown Voltage | $I_C=2\text{mA}, I_B=0$ | 32 | | V |
| BV_{EBO} | Emitter-Base Breakdown Voltage | $I_E=1\mu\text{A}, I_C=0$ | 5 | | V |
| I_{CES} | Collector Cut-off Current | $V_{CE}=32\text{V}, V_{BE}=0$ | | 20 | nA |
| I_{EBO} | Emitter Cut-off Current | $V_{EB}=4\text{V}, I_C=0$ | | 20 | nA |
| h_{FE} | DC Current Gain | | | | |
| | : BCW60B | $V_{CE}=5\text{V}, I_C=10\mu\text{A}$ | 20 | | |
| | : BCW60C | | 40 | | |
| | : BCW60D | | 100 | | |
| | : BCW60A | $V_{CE}=5\text{V}, I_C=2\text{mA}$ | 120 | 220 | |
| | : BCW60B | | 180 | 310 | |
| | : BCW60C | | 250 | 460 | |
| | : BCW60D | | 380 | 630 | |
| | : BCW60A | $V_{CE}=1\text{V}, I_C=50\text{mA}$ | 60 | | |
| | : BCW60B | | 70 | | |
| | : BCW60C | | 90 | | |
| | : BCW60D | | 100 | | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C=50\text{mA}, I_B=1.25\text{mA}$ $I_C=10\text{mA}, I_B=0.25\text{mA}$ | | 0.55 0.35 | V V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C=50\text{mA}, I_B=1.25\text{mA}$ $I_C=10\text{mA}, I_B=0.25\text{mA}$ | 0.7 0.6 | 1.05 0.85 | V V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $V_{CE}=5\text{V}, I_C=2\text{mA}$ | 0.55 | 0.75 | V |
| C_{ob} | Output Capacitance | $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$ | | 4.5 | pF |
| f_T | Current Gain Bandwidth Product | $I_C=10\text{mA}, V_{CE}=5\text{V}, f=100\text{MHz}$ | 125 | | MHz |
| NF | Noise Figure | $I_C=0.2\text{mA}, V_{CE}=5\text{V}$ $R_G=2\text{K}\Omega, f=1\text{KHz}$ | | 6 | dB |
| t_{ON} | Turn On Time | $I_C=10\text{mA}, I_{B1}=1\text{mA}$ | | 150 | ns |
| t_{OFF} | Turn Off Time | $V_{BB}=3.6\text{V}, I_{B2}=1\text{mA}$ $R1=R2=5\text{K}\Omega, R_L=990\Omega$ | | 800 | ns |

Marking Code

| Type | BCW60A | BCW60B | BCW60C | BCW60D |
|-------|--------|--------|--------|--------|
| Mark. | AA | AB | AC | AD |

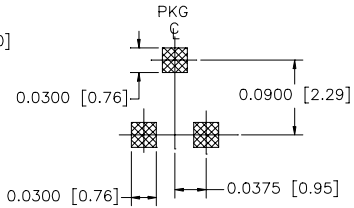
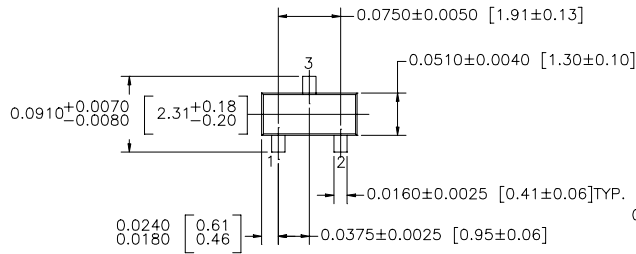
Marking



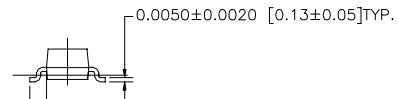
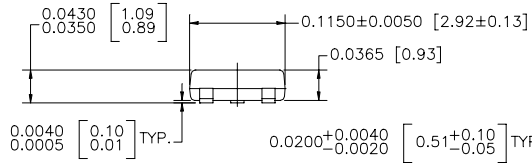
Package Dimensions

BCW60A/B/C/D

SOT-23



LAND PATTERN RECOMMENDATION



SOT 23, 3 LEADS LOW PROFILE

CONTROLLING DIMENSION IS INCH
VALUES IN [] ARE MILLIMETERS

NOTE : UNLESS OTHERWISE SPECIFIED

1. STANDARD LEAD FINISH 150 MICROINCHES / 3.81 MICROMETERS
MINIMUM TIN / LEAD (SOLDER) ON ALLOY 42
2. REFERENCE JEDEC REGISTRATION TO-236, VARIATION AB, ISSUE G, DATED JUL 1993

Dimensions in Millimeters

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| | | | | |
|---|----------------------------------|---------------------------------|----------------------------------|------------------------------|
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| ActiveArray TM | FACT Quiet series TM | ISOPLANAR TM | POP TM | Stealth TM |
| Bottomless TM | FAST [®] | LittleFET TM | Power247 TM | SuperSOT TM -3 |
| CoolFET TM | FAST ^r TM | MicroFET TM | PowerTrench [®] | SuperSOT TM -6 |
| CROSSVOL TM | FRFET TM | MicroPak TM | QFET TM | SuperSOT TM -8 |
| DOME TM | GlobalOptoisolator TM | MICROWIRE TM | QS TM | SyncFET TM |
| EcoSPARK TM | GTO TM | MSX TM | QT Optoelectronics TM | TinyLogic TM |
| E ² CMOS TM | HiSeC TM | MSXPro TM | Quiet Series TM | TruTranslation TM |
| EnSigna TM | I ² C TM | OCX TM | RapidConfigure TM | UHC TM |
| Across the board. Around the world. TM | | OCXPro TM | RapidConnect TM | UltraFET [®] |
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PRODUCT STATUS DEFINITIONS

Definition of Terms

| Datasheet Identification | Product Status | Definition |
|--------------------------|------------------------|---|
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