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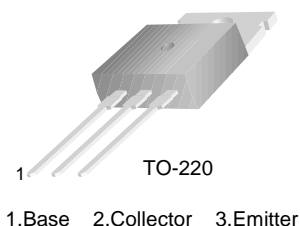
sales@integrated-circuit.com



BDW24/A/B/C

Hammer Drivers, Audio Amplifiers Applications

- Power Darlington TR
- Complement to BDW23, BDW23A, BDW23B and BDW23C respectively



PNP Epitaxial Silicon Transistor

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

| Symbol | Parameter | Value | Units |
|-----------|--|------------|------------------|
| V_{CBO} | Collector-Base Voltage | | |
| | : BDW24 | - 45 | V |
| | : BDW24A | - 60 | V |
| | : BDW24B | - 80 | V |
| | : BDW24C | - 100 | V |
| V_{CEO} | Collector-Emitter Voltage | | |
| | : BDW24 | - 45 | V |
| | : BDW24A | - 60 | V |
| | : BDW24B | - 80 | V |
| | : BDW24C | - 100 | V |
| V_{EBO} | Emitter-Base Voltage | - 5 | V |
| I_C | Collector Current (DC) | - 6 | A |
| I_{CP} | *Collector Current (Pulse) | - 8 | A |
| I_B | Base Current | - 0.2 | A |
| P_C | Collector Dissipation ($T_C=25^\circ\text{C}$) | 50 | W |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{STG} | Storage Temperature | - 65 ~ 150 | $^\circ\text{C}$ |

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

| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Units |
|----------------|---|---|-------------------------------|------|----------------------------------|--|
| $V_{CEO(sus)}$ | * Collector-Emitter Sustaining Voltage : BDW24 : BDW24A : BDW24B : BDW24C | $I_C = -100\text{mA}, I_B = 0$ | - 45 - 60 - 80 - 100 | | | V V V V |
| I_{CBO} | Collector Cut-off Current : BDW24 : BDW24A : BDW24B : BDW24C | $V_{CB} = -45\text{V}, I_E = 0$ $V_{CB} = -60\text{V}, I_E = 0$ $V_{CB} = -80\text{V}, I_E = 0$ $V_{CB} = -100\text{V}, I_E = 0$ | | | - 200 - 200 - 200 - 200 | μA μA μA μA |
| I_{CEO} | Collector Cut-off Current : BDW24 : BDW24A : BDW24B : BDW24C | $V_{CE} = -22\text{V}, I_B = 0$ $V_{CE} = -30\text{V}, I_B = 0$ $V_{CE} = -40\text{V}, I_B = 0$ $V_{CE} = -50\text{V}, I_B = 0$ | | | - 500 - 500 - 500 - 500 | μA μA μA μA |
| I_{EBO} | Emitter Cut-off Current | $V_{EB} = -5\text{V}, I_C = 0$ | | | - 2 | mA |
| h_{FE} | * DC Current Gain | $V_{CE} = -3\text{V}, I_C = -1\text{A}$ $V_{CE} = -3\text{V}, I_C = -2\text{A}$ $V_{CE} = -3\text{V}, I_C = -6\text{A}$ | 1000 750 100 | | 20000 | |
| $V_{CE(sat)}$ | * Collector-Emitter Saturation Voltage | $I_C = -2\text{A}, I_B = -8\text{mA}$ $I_C = -6\text{A}, I_B = -60\text{mA}$ | | | - 2 - 3 | V V |
| $V_{BE(sat)}$ | * Base-Emitter Saturation Voltage | $I_C = -2\text{A}, I_B = -8\text{mA}$ | | | - 2.5 | V |
| $V_{BE(on)}$ | * Base-Emitter ON Voltage | $V_{CE} = -3\text{V}, I_C = -1\text{A}$ $V_{CE} = -3\text{V}, I_C = -6\text{A}$ | | | - 2.5 - 3 | V V |
| V_F | * Parallel Diode Forward Voltage | $I_F = -2\text{A}$ | | | - 1.8 | V |

* Pulse Test: PW=300 μs , duty Cycle =1.5% Pulsed

Typical Characteristics

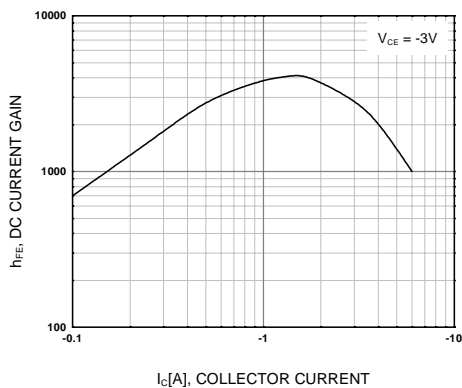


Figure 1. DC current Gain

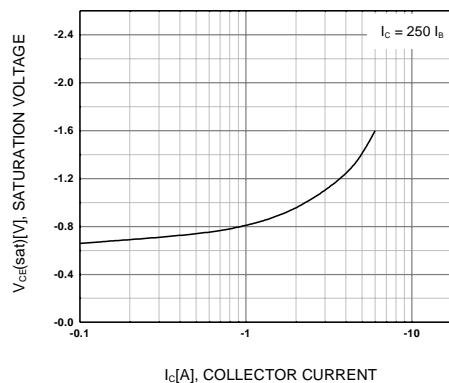


Figure 2. Collector-Emitter Saturation Voltage

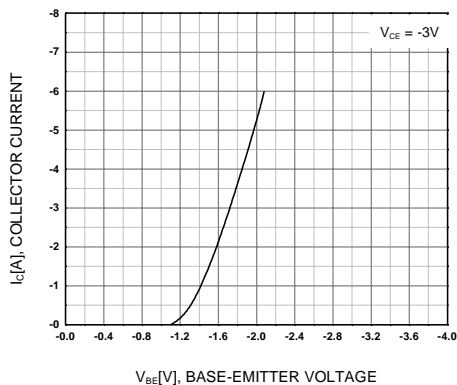


Figure 3. Base-Emitter On Voltage

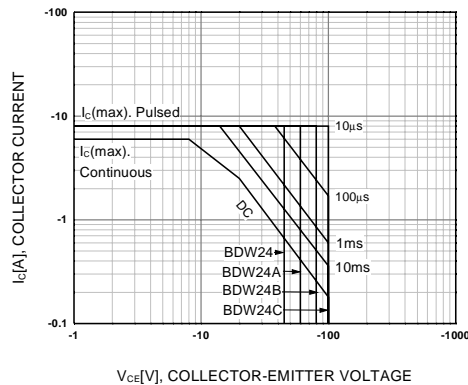


Figure 4. Safe Operating Area

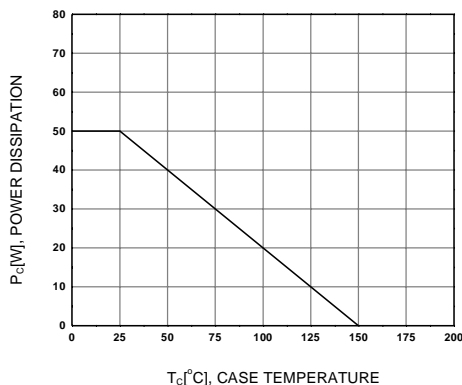
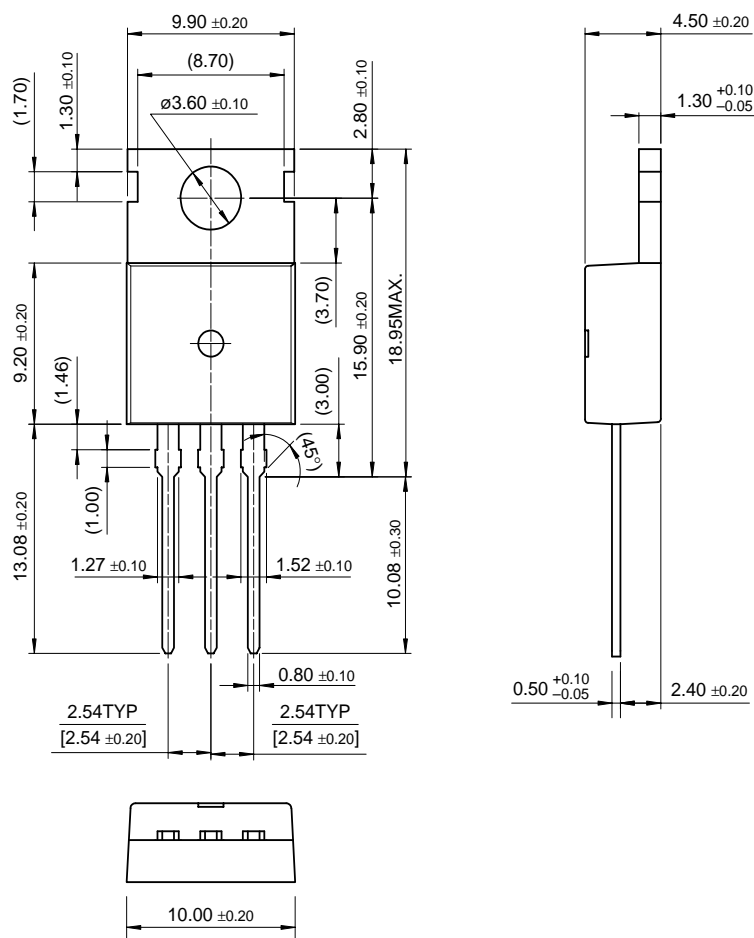


Figure 5. Power Derating

Package Dimensions

TO-220



Dimensions in Millimeters

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