

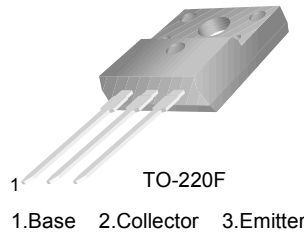


BDW94CF

PNP Epitaxial Silicon Transistor

Power Linear and Switching Application

- Power Darlington TR
- Complement to BDW93CF Respectively



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

| Symbol | Parameter | Value | Units |
|-----------|--|-----------|------------------|
| V_{CBO} | Collector-Base Voltage | -100 | V |
| V_{CEO} | Collector-Emitter Voltage | -100 | V |
| I_C | Collector Current (DC) | -12 | A |
| I_{CP} | Collector Current (Pulse) * | -15 | A |
| I_B | Base Current | -0.2 | A |
| P_C | Collector Dissipation ($T_C = 25^\circ\text{C}$) | 30 | 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 | Conditions | Min. | Typ. | Max | Units |
|----------------|--|--|--------------------|--------------|------------|---------------|
| $V_{CEO(sus)}$ | Collector-Emitter Sustaining Voltage | $I_C = -100\text{mA}, I_B = 0$ | -100 | | | V |
| I_{CBO} | Collector Cut-off Current | $V_{CB} = -100\text{V}, I_E = 0$ | | | -100 | μA |
| I_{CEO} | Collector Cut-off Current | $V_{CE} = -100\text{V}, I_B = 0$ | | | -1 | mA |
| I_{EBO} | Emitter Cut-off Current | $V_{EB} = -5\text{V}, I_C = 0$ | | | -2 | mA |
| h_{FE} | DC Current Gain * | $V_{CE} = -3\text{V}, I_C = -3\text{A}$ $V_{CE} = -3\text{V}, I_C = -5\text{A}$ $V_{CE} = -3\text{V}, I_C = -10\text{A}$ | 1000 750 100 | | 20000 | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage * | $I_C = -5\text{A}, I_B = -20\text{mA}$ $I_C = -10\text{A}, I_B = -100\text{mA}$ | | | -2 -3 | V V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage * | $I_C = -5\text{A}, I_B = -20\text{mA}$ $I_C = -10\text{A}, I_B = -100\text{mA}$ | | | -2.5 -4 | V V |
| V_F | Parallel Diode Forward Voltage * | $I_F = -5\text{A}$ $I_F = -10\text{A}$ | | -1.3 -1.8 | -2 -4 | V V |

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

Package Marking and Ordering Information

| Device Marking | Device | Package | Reel Size | Tape Width | Quantity |
|----------------|---------|---------|-----------|------------|----------|
| BDW94CF | BDW94CF | TO-220F | - | - | 50 |

Typical Performance Characteristics

Figure 1. DC Current Gain

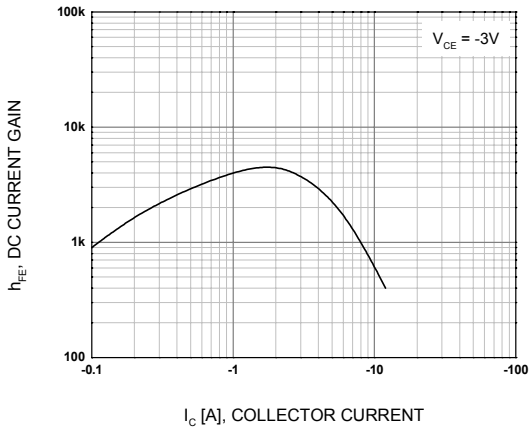


Figure 2. Collector-Emitter Saturation Voltage

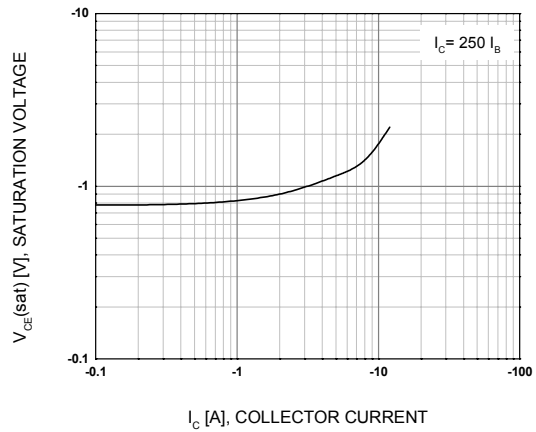


Figure 3. Base-Emitter On Voltage

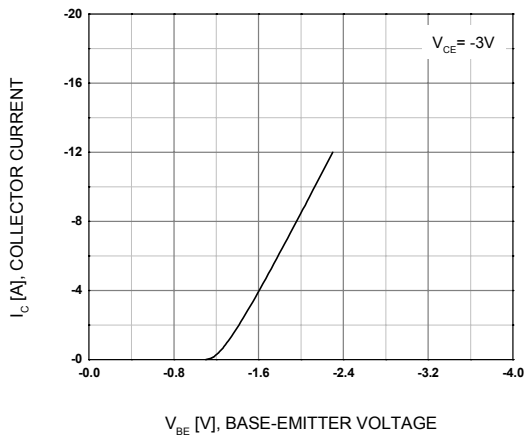
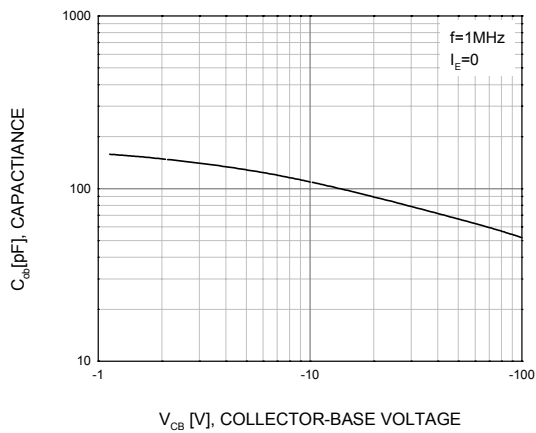
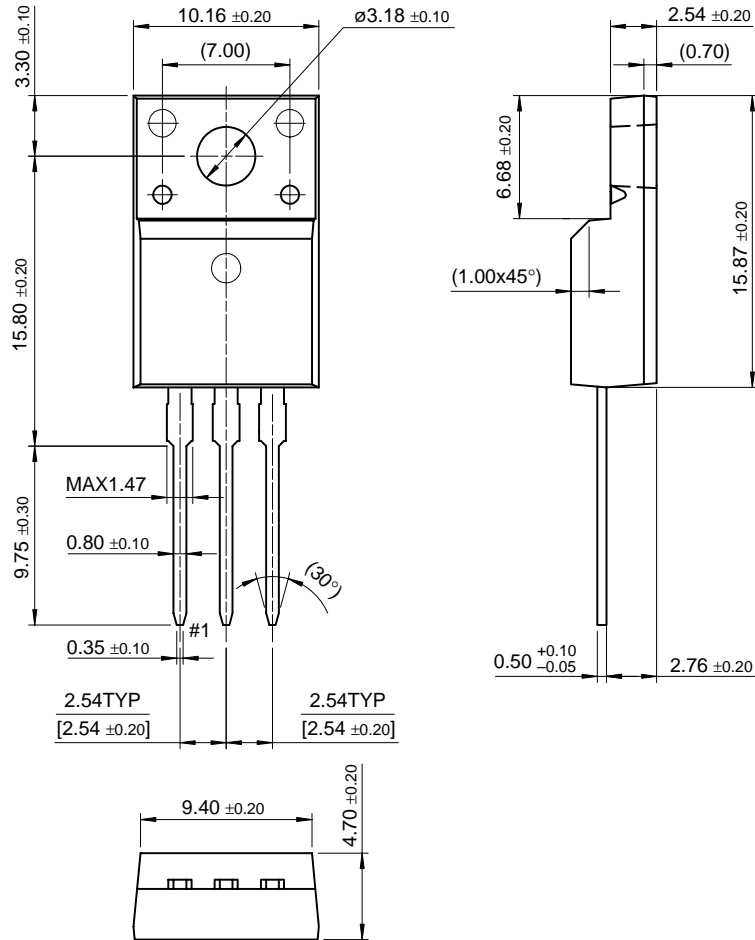


Figure 4. Output Capacitance



Mechanical Dimensions

TO-220F



Dimensions in Millimeters

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| Bottomless™ | FPS™ | MICROCOUPLER™ | QFET® | TinyLogic® |
| Build it Now™ | FRFET™ | MicroFET™ | QS™ | TINYOPTO™ |
| CoolFET™ | GlobalOptoisolator™ | MicroPak™ | QT Optoelectronics™ | TruTranslation™ |
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