

## Silicon PNP Power Transistors

## BDW47

## DESCRIPTION

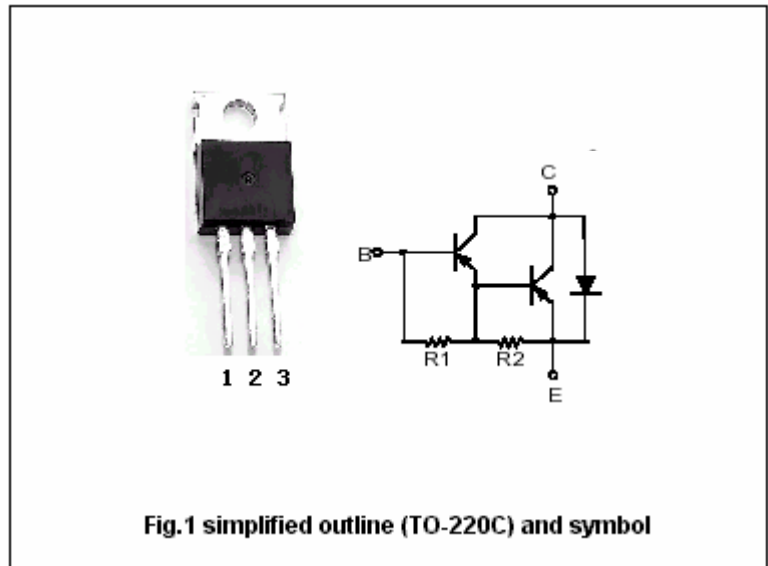
- With TO-220C package
- Complement to type BDW42
- DARLINGTON
- High DC current gain
- Low collector saturation voltage

## APPLICATIONS

- For general purpose and low speed switching applications

## PINNING

| PIN | DESCRIPTION                          |
|-----|--------------------------------------|
| 1   | Base                                 |
| 2   | Collector;connected to mounting base |
| 3   | Emitter                              |

Absolute maximum ratings( $T_a=25^\circ$ )

| SYMBOL    | PARAMETER                 | CONDITIONS     | VALUE   | UNIT     |
|-----------|---------------------------|----------------|---------|----------|
| $V_{CBO}$ | Collector-base voltage    | Open emitter   | -100    | V        |
| $V_{CEO}$ | Collector-emitter voltage | Open base      | -100    | V        |
| $V_{EBO}$ | Emitter-base voltage      | Open collector | -5      | V        |
| $I_C$     | Collector current-DC      |                | -15     | A        |
| $I_B$     | Base current              |                | -0.5    | A        |
| $P_D$     | Total power dissipation   | $T_C=25^\circ$ | 85      | W        |
| $T_j$     | Junction temperature      |                | 150     | $^\circ$ |
| $T_{stg}$ | Storage temperature       |                | -55~150 | $^\circ$ |

## THERMAL CHARACTERISTICS

| SYMBOL        | PARAMETER                           | MAX  | UNIT       |
|---------------|-------------------------------------|------|------------|
| $R_{th\ j-c}$ | Thermal resistance junction to case | 1.47 | $^\circ/W$ |

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## CHARACTERISTICS

T<sub>j</sub>=25 °C unless otherwise specified

| SYMBOL                | PARAMETER                            | CONDITIONS   | MIN  | TYP. | MAX  | UNIT |
|-----------------------|--------------------------------------|--|------|------|------|------|
| V <sub>CE0(SUS)</sub> | Collector-emitter sustaining voltage | I <sub>C</sub> =-30mA, I <sub>B</sub> =0           | -100 |      |      | V    |
| V <sub>CEsat-1</sub>  | Collector-emitter saturation voltage | I <sub>C</sub> =-5A, I <sub>B</sub> =-10mA         |      |      | -2.0 | V    |
| V <sub>CEsat-2</sub>  | Collector-emitter saturation voltage | I <sub>C</sub> =-10A, I <sub>B</sub> =-50mA        |      |      | -3.0 | V    |
| V <sub>BE</sub>       | Base-emitter on voltage              | I <sub>C</sub> =-10A; V <sub>CE</sub> =-4V         |      |      | -3.0 | V    |
| I <sub>CBO</sub>      | Collector cut-off current            | V <sub>CB</sub> =-100V, I <sub>E</sub> =0          |      |      | -1.0 | mA   |
| I <sub>CEO</sub>      | Collector cut-off current            | V <sub>CE</sub> =-50V, I <sub>B</sub> =0           |      |      | -2.0 | mA   |
| I <sub>EBO</sub>      | Emitter cut-off current              | V <sub>EB</sub> =-5V; I <sub>C</sub> =0            |      |      | -2.0 | mA   |
| h <sub>FE-1</sub>     | DC current gain                      | I <sub>C</sub> =-5A; V <sub>CE</sub> =-4V          | 1000 |      |      |      |
| h <sub>FE-2</sub>     | DC current gain                      | I <sub>C</sub> =-10A; V <sub>CE</sub> =-4V         | 250  |      |      |      |
| f <sub>T</sub>        | Transition frequency                 | I <sub>C</sub> =-3A; V <sub>CE</sub> =-3V; f=1MHz  | 4.0  |      |      | MHz  |
| C <sub>OB</sub>       | Output capacitance                   | I <sub>E</sub> =0; V <sub>CB</sub> =-10V; f=0.1MHz |      |      | 300  | pF   |

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PACKAGE OUTLINE

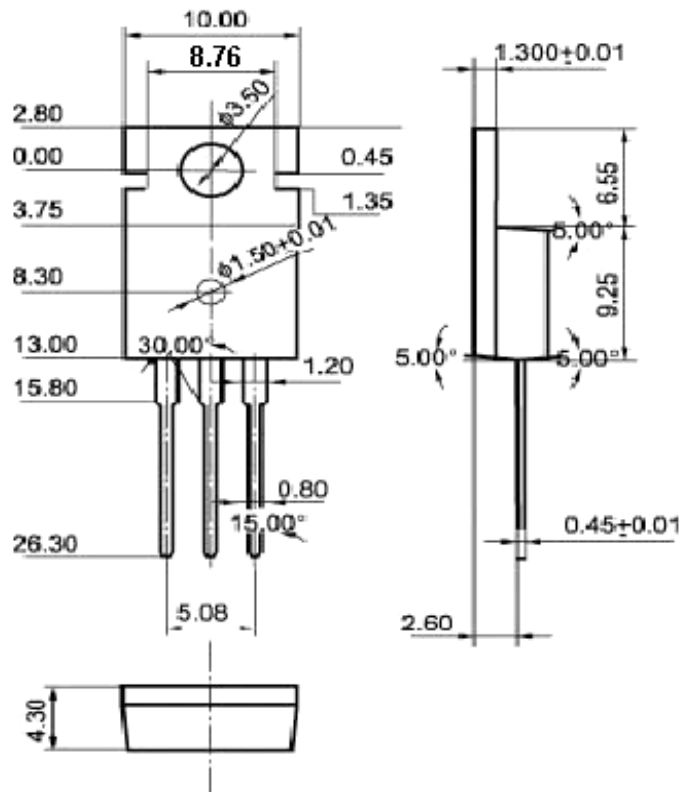


Fig.2 Outline dimensions