

## Silicon NPN Power Transistors

## BDW42

## DESCRIPTION

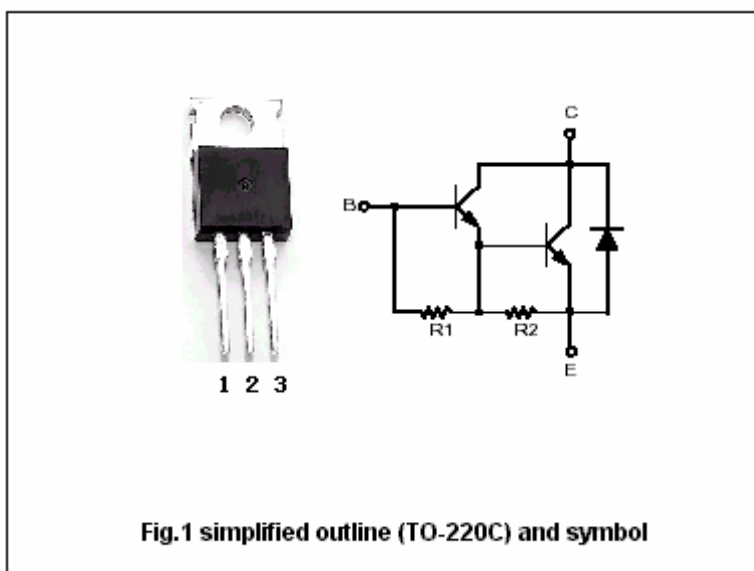
- With TO-220C package
- Complement to type BDW47
- DARLINGTON
- High DC current gain
- Low collector saturation voltage

## 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( $T_a=25^\circ\text{C}$ )

| 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   | $T_C=25^\circ\text{C}$ | 85      | W                |
| $T_j$     | Junction temperature      |                        | 150     | $^\circ\text{C}$ |
| $T_{stg}$ | Storage temperature       |                        | -55~150 | $^\circ\text{C}$ |

## THERMAL CHARACTERISTICS

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

## Silicon NPN Power Transistors

## BDW42

## CHARACTERISTICS

Tj=25°C unless otherwise specified

www.datasheet4u.com

| SYMBOL         | PARAMETER                            | CONDITIONS                    | MIN  | TYP. | MAX | UNIT |
|----------------|--------------------------------------|-------------------------------|------|------|-----|------|
| $V_{CEO(SUS)}$ | Collector-emitter sustaining voltage | $I_C=30mA, I_B=0$             | 100  |      |     | V    |
| $V_{CEsat-1}$  | Collector-emitter saturation voltage | $I_C=5A, I_B=10mA$            |      |      | 2.0 | V    |
| $V_{CEsat-2}$  | Collector-emitter saturation voltage | $I_C=10A, I_B=50mA$           |      |      | 3.0 | V    |
| $V_{BE}$       | Base-emitter on voltage              | $I_C=10A; V_{CE}=4V$          |      |      | 3.0 | V    |
| $I_{CBO}$      | Collector cut-off current            | $V_{CB}=100V, I_E=0$          |      |      | 1.0 | mA   |
| $I_{CEO}$      | Collector cut-off current            | $V_{CE}=50V, I_B=0$           |      |      | 2.0 | mA   |
| $I_{EBO}$      | Emitter cut-off current              | $V_{EB}=5V; I_C=0$            |      |      | 2.0 | mA   |
| $h_{FE-1}$     | DC current gain                      | $I_C=5A; V_{CE}=4V$           | 1000 |      |     |      |
| $h_{FE-2}$     | DC current gain                      | $I_C=10A; V_{CE}=4V$          | 250  |      |     |      |
| $f_T$          | Transition frequency                 | $I_C=3A; V_{CE}=3V; f=1MHz$   | 4.0  |      |     | MHz  |
| $C_{OB}$       | Output capacitance                   | $I_E=0; V_{CB}=10V; f=0.1MHz$ |      |      | 200 | pF   |

## Silicon NPN Power Transistors

BDW42

## PACKAGE OUTLINE

www.datasheet4u.com

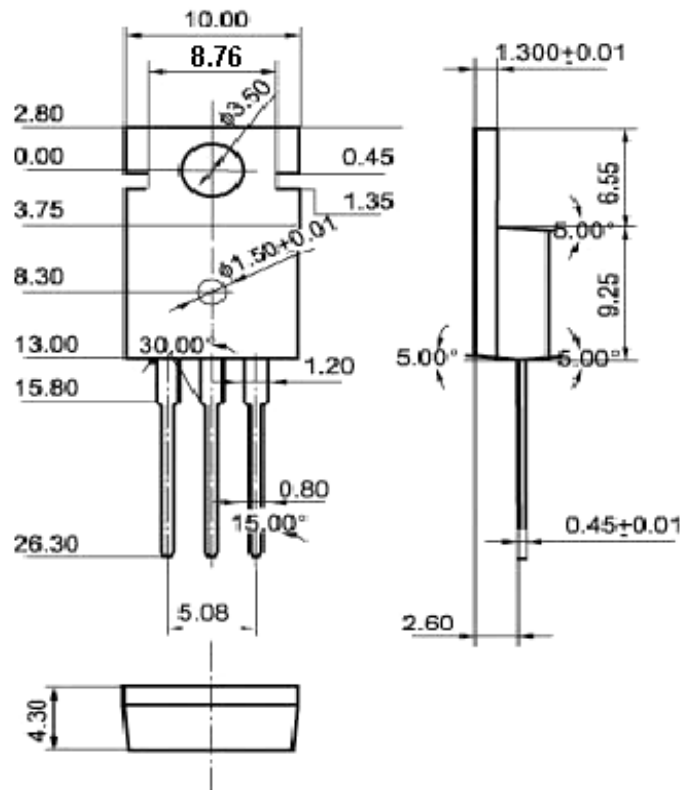


Fig.2 Outline dimensions