



Micro Commercial Components



Micro Commercial Components  
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# BDW93B

## NPN Silicon Power Transistors

### Features

- Halogen free available upon request by adding suffix "-HF"
- Intended for use in power linear and switching applications
- Lead Free Finish/RoHS Compliant (Note1) ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

### Maximum Ratings

- Mounting Torque: 5 in-lbs Maximum

| Symbol    | Rating                      | Rating      | Unit |
|-----------|-----------------------------|-------------|------|
| $V_{CEO}$ | Collector-Emitter Voltage   | 80          | V    |
| $V_{CBO}$ | Collector-Base Voltage      | 80          | V    |
| $V_{EBO}$ | Emitter-Base Voltage        | 5.0         | V    |
| $I_{CP}$  | Peak Collector Current      | 15          | A    |
| $I_C$     | Collector Current           | 12          | A    |
| $P_C$     | Collector power dissipation | 80          | W    |
| $T_J$     | Junction Temperature        | -55 to +150 | °C   |
| $T_{STG}$ | Storage Temperature         | -55 to +150 | °C   |

### Electrical Characteristics @ 25°C Unless Otherwise Specified

| Symbol | Parameter | Min | Max | Units |
|--------|-----------|-----|-----|-------|
|--------|-----------|-----|-----|-------|

#### OFF CHARACTERISTICS

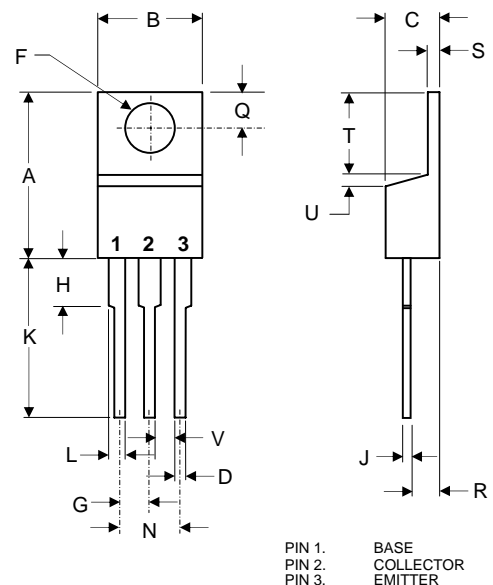
|               |  |     |     |      |
|---------------|--|-----|-----|------|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage<br>( $I_C=100mA$ , $I_B=0$ ) | 80  | --- | Vdc  |
| $I_{CBO}$     | Collector-Base Cutoff Current<br>( $V_{CB}=80Vdc$ , $I_E=0$ )    | --- | 0.1 | mAdc |
| $I_{EBO}$     | Emitter-Base Cutoff Current<br>( $V_{EB}=5.0Vdc$ , $I_C=0$ )     | --- | 2.0 | mAdc |

#### ON CHARACTERISTICS

|                 |   |      |       |     |
|-----------------|---|------|-------|-----|
| $h_{FE-1}$      | Forward Current Transfer ratio<br>( $I_C=3.0Adc$ , $V_{CE}=3.0Vdc$ )    | 1000 | ---   | --- |
| $h_{FE-2}$      | Forward Current Transfer ratio<br>( $I_C=5.0Adc$ , $V_{CE}=3.0Vdc$ )    | 750  | 20000 | --- |
| $h_{FE-3}$      | Forward Current Transfer ratio<br>( $I_C=10Adc$ , $V_{CE}=3.0Vdc$ )     | 100  | ---   | --- |
| $V_{CE(sat)-1}$ | Collector-Emitter Saturation Voltage<br>( $I_C=5.0Adc$ , $I_B=20mAdc$ ) | ---  | 2.0   | Vdc |
| $V_{CE(sat)-2}$ | Collector-Emitter Saturation Voltage<br>( $I_C=10Adc$ , $I_B=100mAdc$ ) | ---  | 3.0   | Vdc |
| $V_{BE(sat)-1}$ | Base-Emitter Saturation Voltage<br>( $I_C=5.0Adc$ , $I_B=20mAdc$ )      | ---  | 2.5   | Vdc |
| $V_{BE(sat)-2}$ | Base-Emitter Saturation Voltage<br>( $I_C=10Adc$ , $I_B=100mAdc$ )      | ---  | 4.0   | Vdc |

Notes: 1. High Temperature Solder Exemption Applied, see EU Directive Annex 7.

### TO-220



| DIM | DIMENSIONS |       |       |       | NOTE |
|-----|------------|-------|-------|-------|------|
|     | INCHES     |       | MM    |       |      |
| A   | .560       | .625  | 14.22 | 15.88 |      |
| B   | .380       | .420  | 9.65  | 10.67 |      |
| C   | .140       | .190  | 3.56  | 4.82  |      |
| D   | .020       | .045  | 0.51  | 1.14  |      |
| F   | .139       | .161  | 3.53  | 4.09  | ∅    |
| G   | .190       | .110  | 2.29  | 2.79  |      |
| H   | ---        | .250  | ---   | 6.35  |      |
| J   | .012       | .025  | 0.30  | 0.64  |      |
| K   | .500       | .580  | 12.70 | 14.73 |      |
| L   | .045       | .060  | 1.14  | 1.52  |      |
| N   | .190       | .210  | 4.83  | 5.33  |      |
| Q   | .100       | .135  | 2.54  | 3.43  |      |
| R   | .080       | .115  | 2.04  | 2.92  |      |
| S   | .045       | .055  | 1.14  | 1.39  |      |
| T   | .230       | .270  | 5.84  | 6.86  |      |
| U   | -----      | .050  | ----- | 1.27  |      |
| V   | .045       | ----- | 1.15  | ----- |      |



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### Ordering Information :

| Device         | Packing         |
|----------------|-----------------|
| Part Number-BP | Bulk; 1Kpcs/Box |

Note : Adding "-HF" suffix for halogen free, eg. Part Number-BP-HF

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