

## Power Bridge Rectifiers

### DBI 15

#### Features

- Isolated metal case with in-line wire leads
- Ideal for printed circuit boards
- Allow easy heatsink mounting
- Solder temperature: 260 °C max. (max 5 s)
- Blocking voltage up to 1600 V
- High surge current
- Standard packing: 54 pieces box

#### Typical Applications\*

- Rectifier for power supplies
- Input rectifier for variable frequency drives
- Rectifier for DC motor field supplies
- Battery charger rectifiers
- Recommended snubber network:  
RC: 50 Ω, 0.1 μF ( $P_R = 1 \text{ W}$ )

1) Mounted on a 50 x 75 mm p.c.b.

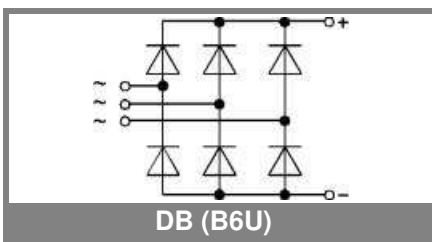
2) Mounted on a painted metal sheet of min. 250 x 250 x 1 mm

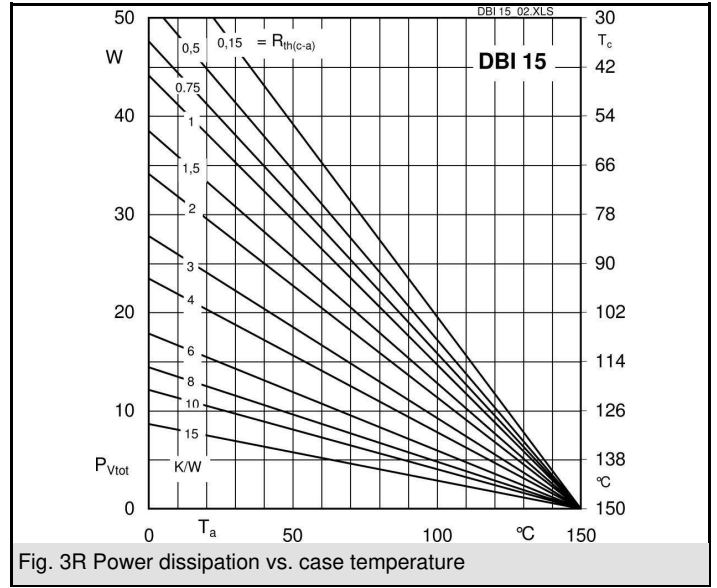
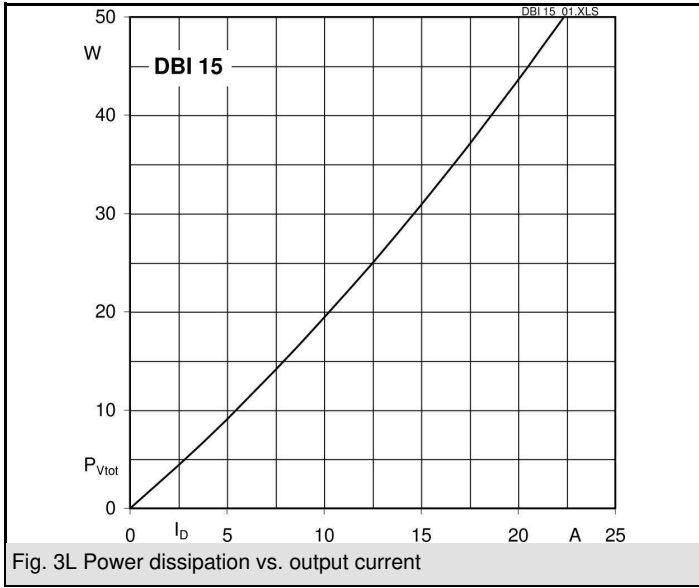
3) Recommended  $V_{VRMS}$  values:

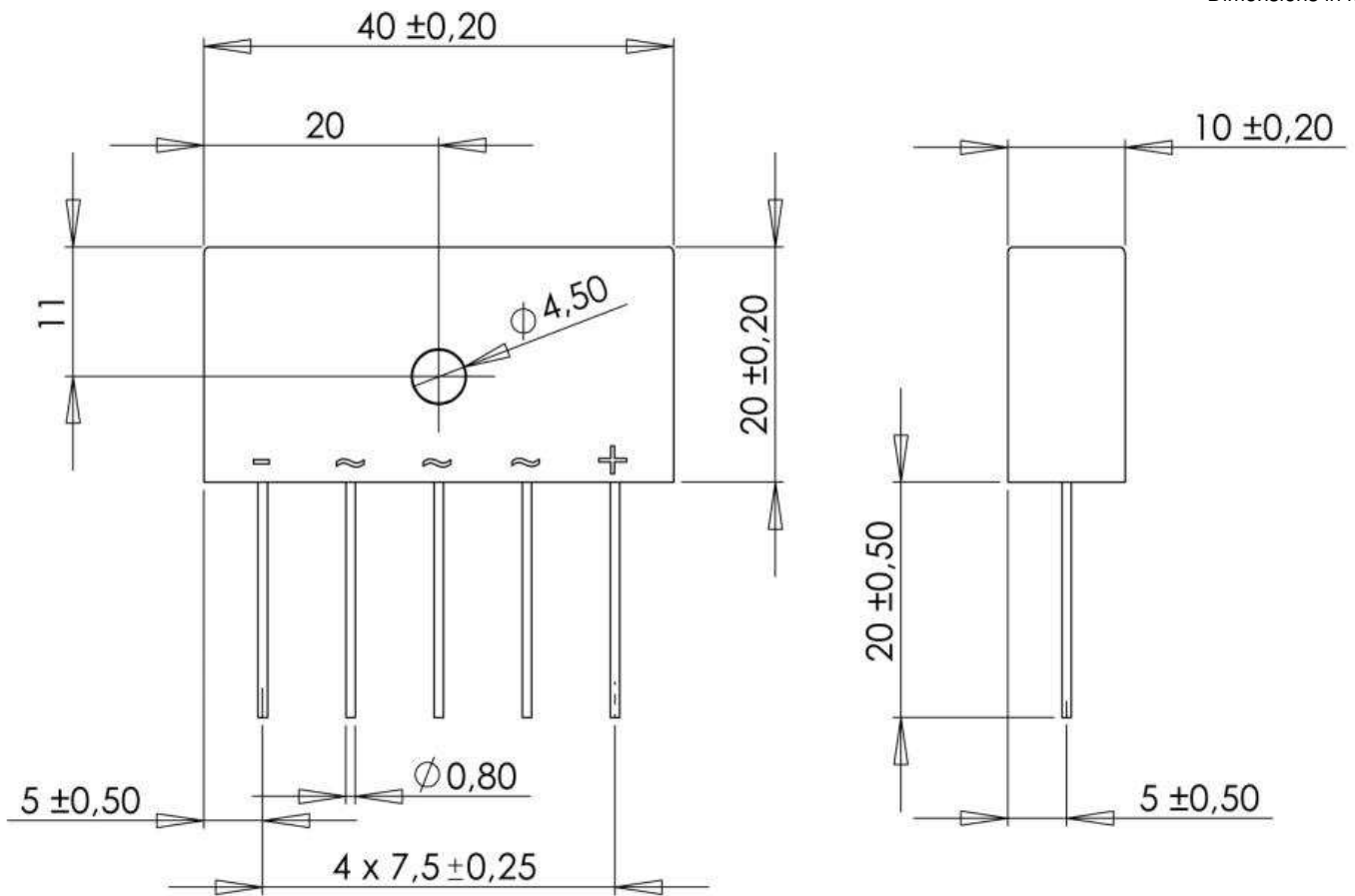
$$V_{VRMS} = V_{RRM} / 2,83$$

| $V_{RSM}, V_{RRM}$<br>V | $V_{VRMS}$<br>V | $I_D = 15 \text{ A } (T_c = 75 \text{ °C})$<br>Types | $C_{max}$<br>μF | $R_{min}$<br>Ω |
|-------------------------|-----------------|--|-----------------|----------------|
| 200                     | 140             | DBI 15-02  |                 | 0,22           |
| 400                     | 280             | DBI 15-04  |                 | 0,47           |
| 800                     | 560             | DBI 15-08  |                 | 1              |
| 1200                    | 800             | DBI 15-12  |                 | 1,5            |
| 1600                    | 1000            | DBI 15-16  |                 | 2,2            |

| Symbol        | Conditions   | Values          | Units                                |
|---------------|--|-----------------|--------------------------------------|
| $I_D$         | $T_a = 49 \text{ °C}$ , P1/120, natural cooling<br>$T_a = 49 \text{ °C}$ , chassis <sup>2)</sup>   | 15<br>10        | A<br>A                               |
| $I_{DCL}$     | $T_a = 49 \text{ °C}$ , P1/120, natural cooling<br>$T_a = 49 \text{ °C}$ , chassis <sup>2)</sup><br>$T_a = 49 \text{ °C}$ , isolated <sup>1)</sup> | 15<br>10<br>2,7 | A<br>A<br>A                          |
| $I_{FSM}$     | $T_{vj} = 25 \text{ °C}$ , 10 ms<br>$T_{vj} = 150 \text{ °C}$ , 10 ms  | 250<br>210      | A<br>A                               |
| $i^2t$        | $T_{vj} = 25 \text{ °C}$ , 8,3 ... 10 ms<br>$T_{vj} = 150 \text{ °C}$ , 8,3 ... 10 ms  | 310<br>220      | A <sup>2</sup> s<br>A <sup>2</sup> s |
| $V_F$         | $T_{vj} = 25 \text{ °C}$ , $I_F = 50 \text{ A}$  | max. 1,7        | V                                    |
| $V_{(TO)}$    | $T_{vj} = 150 \text{ °C}$  | max. 0,85       | V                                    |
| $r_T$         | $T_{vj} = 150 \text{ °C}$  | max. 12         | mΩ                                   |
| $I_{RD}$      | $T_{vj} = 25 \text{ °C}$ , $V_{RD} = V_{RRM}$<br>$T_{vj} = \text{ °C}$ , $V_{RD} = V_{RRM} \geq V$   | 50              | μA<br>μA                             |
| $I_{RD}$      | $T_{vj} = 150 \text{ °C}$ , $V_{RD} = V_{RRM}$<br>$T_{vj} = \text{ °C}$ , $V_{RD} = V_{RRM} \geq V$  | 5               | mA<br>mA                             |
| $t_{rr}$      | $T_{vj} = 25 \text{ °C}$   | 10              | μs                                   |
| $f_G$         |  | 2000            | Hz                                   |
| $R_{th(j-a)}$ | isolated <sup>1)</sup><br>chassis <sup>2)</sup>  | 21<br>5,2       | K/W<br>K/W                           |
| $R_{th(j-c)}$ | total (from junctions to bridge back side)   | 2,4             | K/W                                  |
| $R_{th(c-s)}$ | total  | 0,15            | K/W                                  |
| $T_{vj}$      |  | - 40 ... + 150  | °C                                   |
| $T_{stg}$     |  | - 55 ... + 150  | °C                                   |
| $V_{isol}$    | a.c. 50...60 Hz; r.m.s.; 1s / 1 min.   | 3000 / 2500     | V~                                   |
| $M_s$         | torque for heatsink mounting (M4 screw)  | $2 \pm 15 \%$   | Nm                                   |
| $M_t$         |  |                 | Nm                                   |
| $a$           |  |                 | m/s <sup>2</sup>                     |
| $w$           | approx.  | 21              | g                                    |
| $F_u$         |  |                 | A                                    |
| Case          | 40 x 20 x 10 mm plus leads = 20 mm   | DBI             |                                      |







Case DBI

\* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and written approval by SEMIKRON. We therefore strongly recommend prior consultation of our personal.