POWERSEM

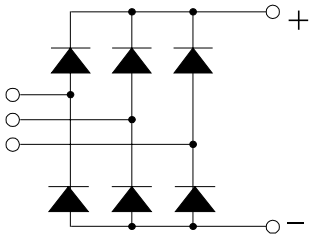
# Three Phase Rectifier Bridges

# PSD 82

# $I_{dAVM}$ = 88A
# $V_{RRM}$ = 800-1800 V

Preliminary Data Sheet

| $V_{RSM}$ V | $V_{RRM}$ V | Type |
|---|---|---|
| 800 | 800 | PSD 82/08 |
| 1200 | 1200 | PSD 82/12 |
| 1400 | 1400 | PSD 82/14 |
| 1600 | 1600 | PSD 82/16 |
| 1800 | 1800 | PSD 82/18 |







| Symbol | Test Conditions | | | Maximum Ratings | |
|---|---|---|---|---|---|
| $I_{dAVM}$ | $T_C$ = 110°C, module | | | 88 | A |
| $I_{FSM}$ | $T_{VJ}$ = 45°C | t = 10 ms | (50 Hz), sine | 750 | A |
| | $V_R$ = 0 | t = 8.3 ms | (60 Hz), sine | 820 | A |
| | $T_{VJ}$ = $T_{VJM}$ | t = 10 ms | (50 Hz), sine | 670 | A |
| | $V_R$ = 0 | t = 8.3 ms | (60 Hz), sine | 740 | A |
| $\int i^2 dt$ | $T_{VJ}$ = 45°C | t = 10 ms | (50 Hz), sine | 2800 | $A^2 s$ |
| | $V_R$ = 0 | t = 8.3 ms | (60 Hz), sine | 2800 | $A^2 s$ |
| | $T_{VJ}$ = $T_{VJM}$ | t = 10 ms | (50 Hz), sine | 2250 | $A^2 s$ |
| | $V_R$ = 0 | t = 8.3 ms | (60 Hz), sine | 2250 | $A^2 s$ |
| $T_{VJ}$ | | | | -40 ... + 150 | °C |
| $T_{VJM}$ | | | | 150 | °C |
| $T_{stg}$ | | | | -40 ... + 125 | °C |
| $V_{ISOL}$ | 50/60 HZ, RMS | t = 1 min | | 2500 | V ~ |
| | $I_{ISOL}$ ≤ 1 mA | t = 1 s | | 3000 | V ~ |
| $M_d$ | Mounting torque | | (M5) | 5 ± 15% | Nm |
| | Terminal connection torque | | (M5) | 5 ± 15% | Nm |
| Weight | typ. | | | 160 | g |

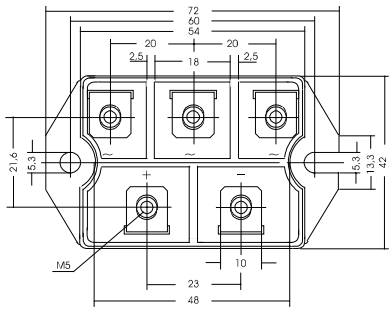
| Symbol | Test Conditions | | | Characteristic Value | |
|---|---|---|---|---|---|
| $I_R$ | $V_R$ = $V_{RRM}$ | $T_{VJ}$ = 25°C | ≤ | 0.3 | mA |
| | $V_R$ = $V_{RRM}$ | $T_{VJ}$ = $T_{VJM}$ | ≤ | 5 | mA |
| $V_F$ | $I_F$ = 150 A | $T_{VJ}$ = 25°C | ≤ | 1.6 | V |
| $V_{TO}$ | For power-loss calculations only | | | 0.8 | V |
| $r_T$ | $T_{VJ}$ = $T_{VJM}$ | | | 5 | mΩ |
| $R_{thJC}$ | per Diode; DC current | | | 1.1 | K/W |
| | per module | | | 0.183 | K/W |
| $R_{thJK}$ | per Diode; DC current | | | 1.52 | K/W |
| | per module | | | 0.253 | K/W |
| $d_S$ | Creeping distance on surface | | | 10.0 | mm |
| $d_A$ | Creeping distance in air | | | 9.4 | mm |
| a | Max. allowable acceleration | | | 50 | $m/s^2$ |

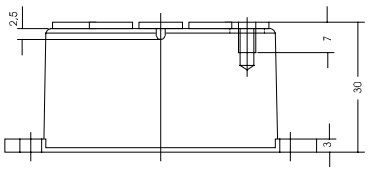
### Features
- Package with screw terminals
- Isolation voltage 3000 V~
- Planar glasspassivated chips
- Blocking voltage up to 1800 V
- Low forward voltage drop
- UL registered E 148688

### Applications
- Supplies for DC power equipment
- Input rectifiers for PWM inverter
- Battery DC power supplies
- Field supply for DC motors

### Advantages
- Easy to mount with two screws
- Space and weight savings
- Improved temperature and power cycling

**Package, style and outline**
Dimensions in mm (1mm = 0.0394“)




BEVO Halbleitertechnik GmbH
D-91217 Hersbruck
Phone: 09151/1516 Fax.: 09151/7700

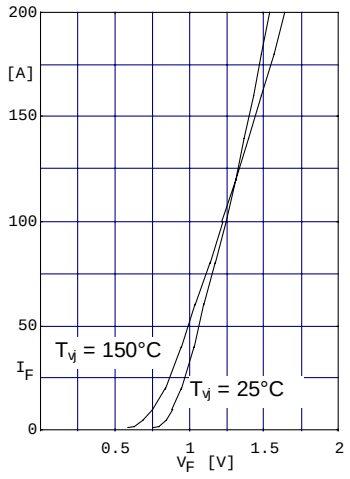



Fig. 1 Forward current versus voltage drop per diode

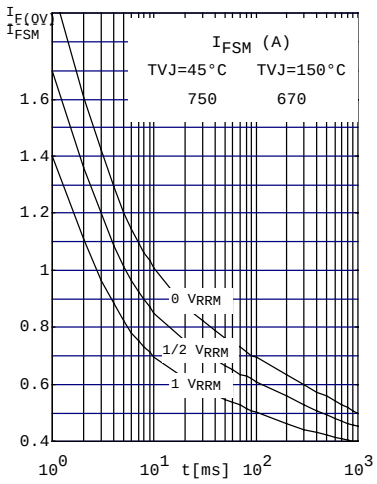



Fig. 2 Surge overload current per diode $I_{FSM}$: Crest value. t: duration

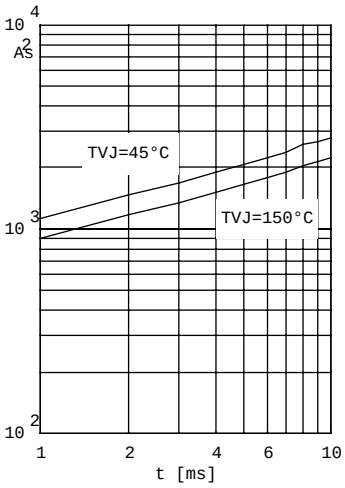



Fig. 3 $\int i^2dt$ versus time (1-10ms) per diode (or thyristor)

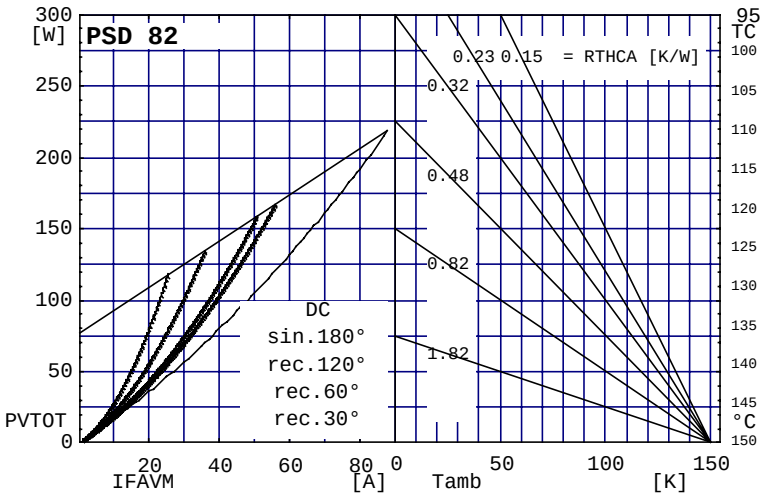



Fig. 4 Power dissipation versus direct output current and ambient temperature

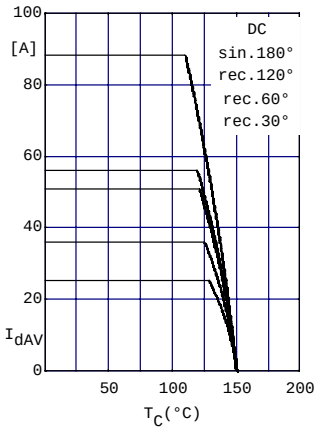



Fig.5 Maximum forward current at case temperature

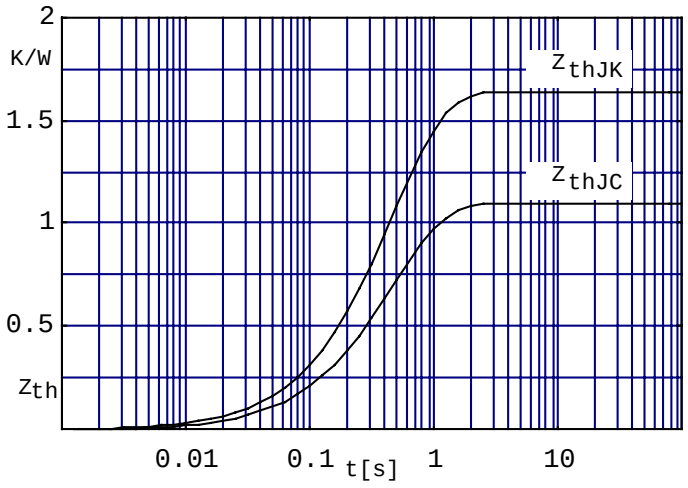



Fig. 6 Transient thermal impedance per diode (or Thyristor), calculated