

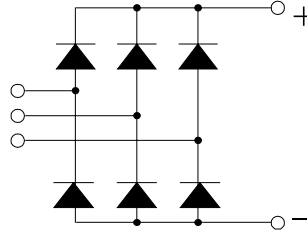
Three Phase Rectifier Bridges

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

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

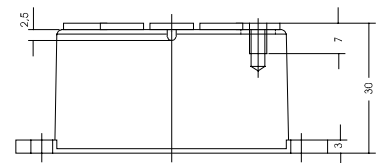
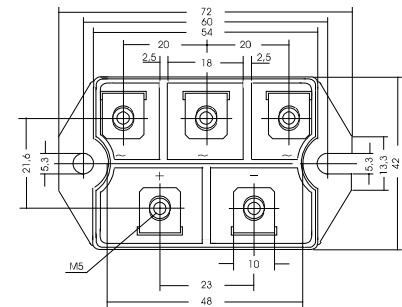
- Supplies for DC power equipment
- Input rectifiers for PWM inverter
- Battery DC power supplies
- Field supply for DC motors

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")



| Symbol | Test Conditions | Characteristic Value |
|------------|--|----------------------|
| I_R | $V_R = V_{RRM}$ $T_{VJ} = 25^\circ C$ | ≤ 0.3 mA |
| | $V_R = V_{RRM}$ $T_{VJ} = T_{VJM}$ | ≤ 5 mA |
| V_F | $I_F = 150$ A $T_{VJ} = 25^\circ C$ | ≤ 1.6 V |
| V_{TO} | For power-loss calculations only | 0.8 V |
| r_T | $T_{VJ} = T_{VJM}$ | 5 $m\Omega$ |
| 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 |

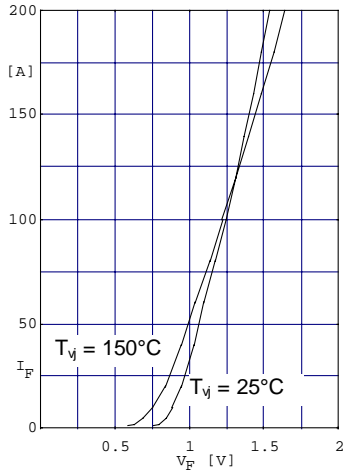


Fig. 1 Forward current versus voltage drop per diode

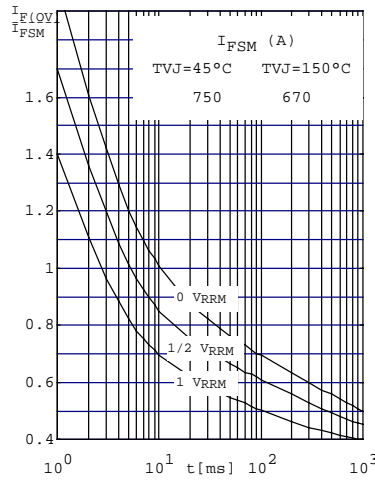


Fig. 2 Surge overload current per diode I_{FSM} : Crest value. t : duration

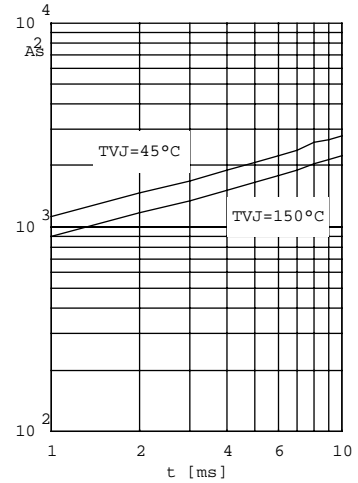


Fig. 3 $\int i^2 dt$ versus time (1-10ms) per diode (or thyristor)

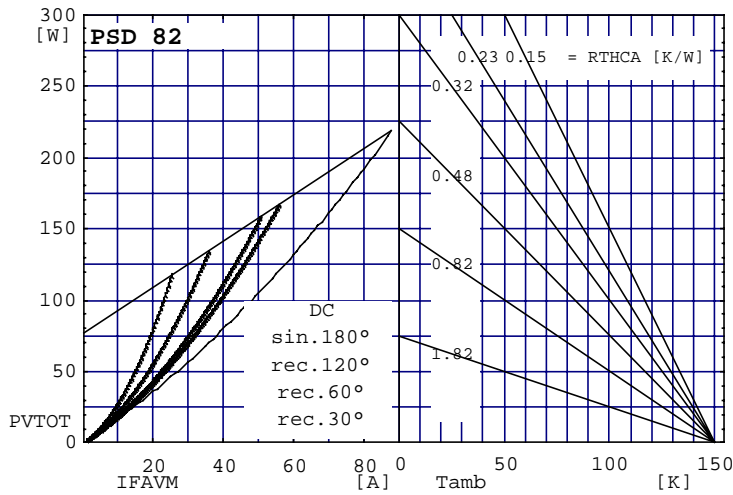


Fig. 4 Power dissipation versus direct output current and ambient temperature

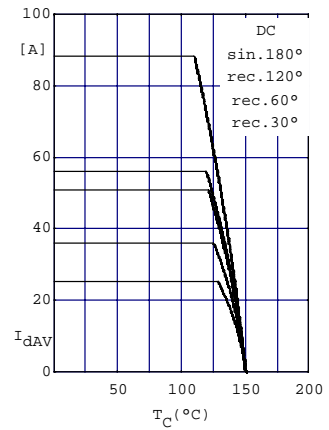


Fig.5 Maximum forward current at case temperature

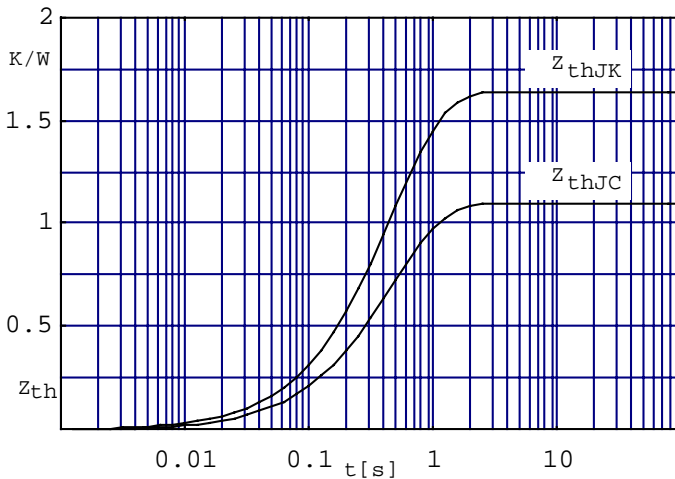


Fig. 6 Transient thermal impedance per diode (or Thyristor), calculated