

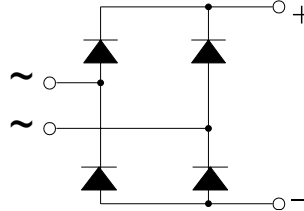
## Single Phase Rectifier Bridges

### PSB 75

$I_{dAVM} = 70A$   
 $V_{RRM} = 800-1800 V$

Preliminary Data Sheet

| $V_{RSM}$<br>V | $V_{RRM}$<br>V | Type      |
|----------------|----------------|-----------|
| 800            | 800            | PSB 75/08 |
| 1200           | 1200           | PSB 75/12 |
| 1400           | 1400           | PSB 75/14 |
| 1600           | 1600           | PSB 75/16 |
| 1800           | 1800           | PSB 75/18 |



| Symbol        | Test Conditions   | Maximum Ratings          |
|---------------|---|--------------------------|
| $I_{dAVM}$    | $T_C = 85^\circ C$ , module                                     | 70 A                     |
| $I_{FSM}$     | $T_{VJ} = 45^\circ C$<br>$V_R = 0$<br>$t = 10$ ms (50 Hz), sine | 1000 A                   |
|               | $t = 8.3$ ms (60 Hz), sine                                      | 1100 A                   |
|               | $T_{VJ} = T_{VJM}$<br>$V_R = 0$<br>$t = 10$ ms (50 Hz), sine    | 850 A                    |
|               | $t = 8.3$ ms (60 Hz), sine                                      | 1000 A                   |
| $\int i^2 dt$ | $T_{VJ} = 45^\circ C$<br>$V_R = 0$<br>$t = 10$ ms (50 Hz), sine | 5000 $A^2 s$             |
|               | $t = 8.3$ ms (60 Hz), sine                                      | 5000 $A^2 s$             |
|               | $T_{VJ} = T_{VJM}$<br>$V_R = 0$<br>$t = 10$ ms (50 Hz), sine    | 4000 $A^2 s$             |
|               | $t = 8.3$ ms (60 Hz), sine                                      | 4100 $A^2 s$             |
| $T_{VJ}$      |   | -40 ... + 150 $^\circ C$ |
| $T_{VJM}$     |   | 150 $^\circ C$           |
| $T_{stg}$     |   | -40 ... + 150 $^\circ C$ |
| $V_{ISOL}$    | 50/60 HZ, RMS<br>$t = 1$ min                                    | 2500 V ~                 |
|               | $I_{ISOL} \leq 1$ mA<br>$t = 1$ s                               | 3000 V ~                 |
| $M_d$         | Mounting torque (M5)  | 5 Nm                     |
|               | Terminal connection torque (M5)                                 | 5 Nm                     |
| Weight        | typ.  | 235 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

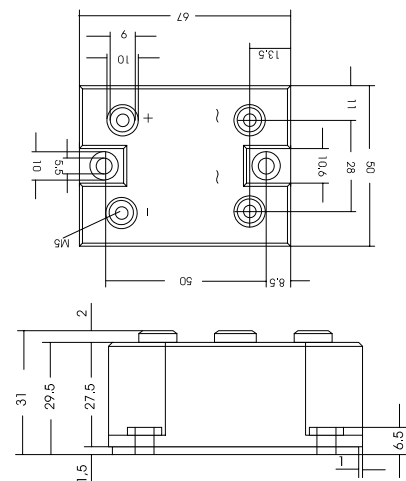
### Advantages

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

### Package, style and outline

Dimensions in mm (1mm = 0.0394")

| Symbol     | Test Conditions                          | Characteristic Value |
|------------|--|----------------------|
| $I_R$      | $V_R = V_{RRM}$<br>$T_{VJ} = 25^\circ C$ | $\leq 0.3$ mA        |
|            | $V_R = V_{RRM}$<br>$T_{VJ} = T_{VJM}$    | $\leq 8.0$ mA        |
| $V_F$      | $I_F = 150$ A<br>$T_{VJ} = 25^\circ C$   | $\leq 1.6$ V         |
| $V_{TO}$   | For power-loss calculations only         | 0.8 V                |
| $r_T$      | $T_{VJ} = T_{VJM}$                       | 8 $m\Omega$          |
| $R_{thJC}$ | per diode; DC current                    | 1.28 K/W             |
|            | per module                               | 0.32 K/W             |
| $R_{thJK}$ | per diode; DC current                    | 1.38 K/W             |
|            | per module                               | 0.345 K/W            |
| $d_S$      | Creeping distance on surface             | 17.6 mm              |
| $d_A$      | Creeping distance in air                 | 17.6 mm              |
| $a$        | Max. allowable acceleration              | 50 $m/s^2$           |



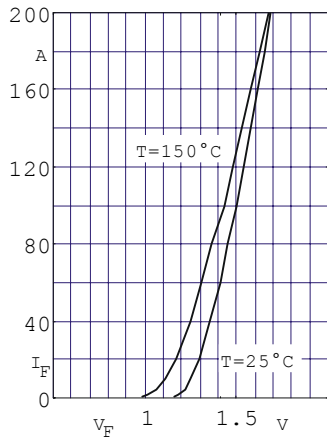


Fig. 1 Forward current versus voltage drop per diode

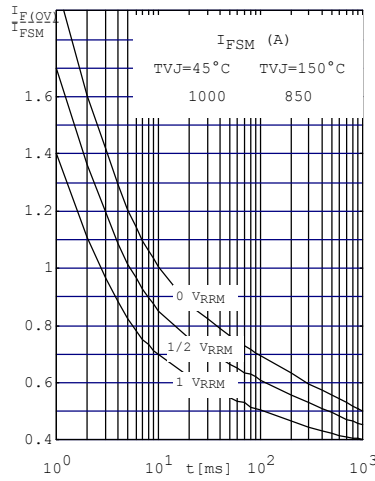


Fig. 2 Surge overload current per diode  $I_{FSM}$ : Crest value.  $t$ : duration

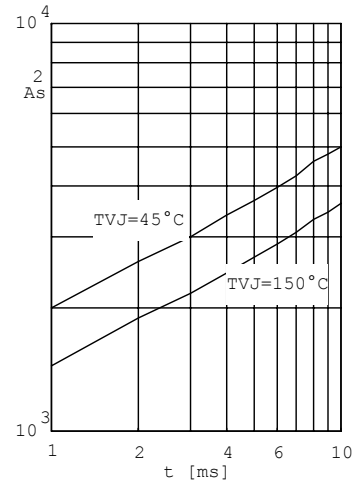


Fig. 3  $\int i^2 dt$  versus time (1-10ms) per diode (or thyristor)

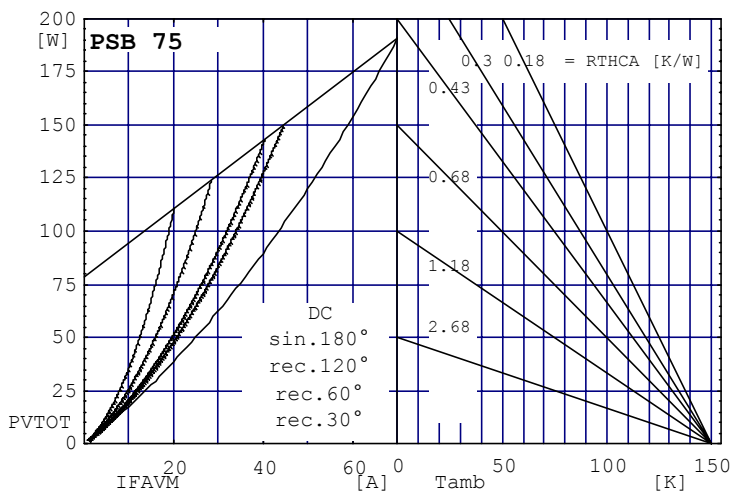


Fig. 4 Power dissipation versus direct output current and ambient temperature

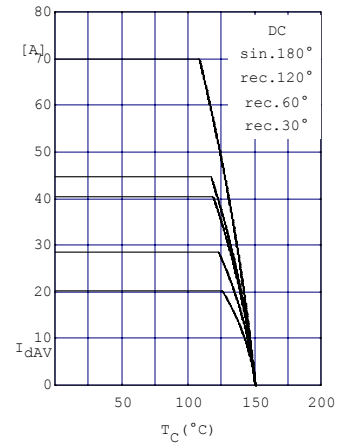


Fig. 5 Maximum forward current at case temperature

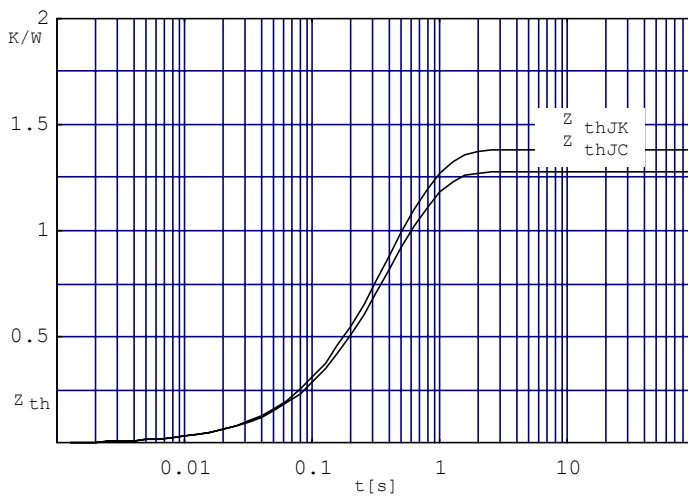


Fig. 6 Transient thermal impedance per diode (or thyristor), calculated