

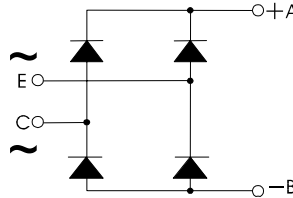
## Single Phase Rectifier Bridges

### PSB 162

$I_{dAV}$  = 122 A  
 $V_{RRM}$  = 800-1800 V

Preliminary Data Sheet

| $V_{RSM}$<br>V | $V_{RRM}$<br>V | Type       |
|----------------|----------------|------------|
| 800            | 800            | PSB 162/08 |
| 1200           | 1200           | PSB 162/12 |
| 1400           | 1400           | PSB 162/14 |
| 1600           | 1600           | PSB 162/16 |
| 1800           | 1800           | PSB 162/18 |



| Symbol        | Test Conditions   | Maximum Ratings                |
|---------------|---|--------------------------------|
| $I_{dAV}$     | $T_C = 100^\circ\text{C}$ , module                                    | 122 A                          |
| $I_{FSM}$     | $T_{VJ} = 45^\circ\text{C}$<br>$V_R = 0$<br>$t = 10$ ms (50 Hz), sine | 1800 A                         |
|               | $t = 8.3$ ms (60 Hz), sine  | 1950 A                         |
|               | $T_{VJ} = T_{VJM}$<br>$V_R = 0$<br>$t = 10$ ms (50 Hz), sine          | 1600 A                         |
|               | $t = 8.3$ ms (60 Hz), sine  | 1800 A                         |
| $\int i^2 dt$ | $T_{VJ} = 45^\circ\text{C}$<br>$V_R = 0$<br>$t = 10$ ms (50 Hz), sine | 16200 $\text{A}^2\text{s}$     |
|               | $t = 8.3$ ms (60 Hz), sine  | 16200 $\text{A}^2\text{s}$     |
|               | $T_{VJ} = T_{VJM}$<br>$V_R = 0$<br>$t = 10$ ms (50 Hz), sine          | 12800 $\text{A}^2\text{s}$     |
|               | $t = 8.3$ ms (60 Hz), sine  | 13400 $\text{A}^2\text{s}$     |
| $T_{VJ}$      |   | -40 ... + 150 $^\circ\text{C}$ |
| $T_{VJM}$     |   | 150 $^\circ\text{C}$           |
| $T_{stg}$     |   | -40 ... + 125 $^\circ\text{C}$ |
| $V_{ISOL}$    | 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 (M6)  | 5 Nm                           |
|               | Terminal connection torque (M6)                                       | 5 Nm                           |
| Weight        | typ.  | 270 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

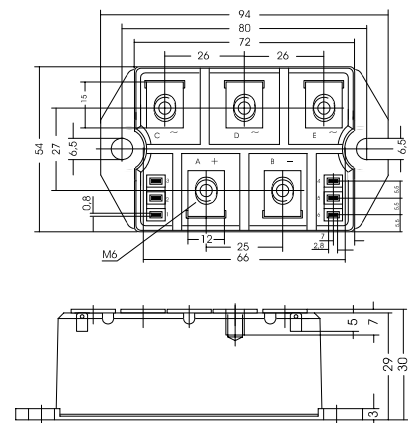
- Supplies for DC power equipment
- Input rectifiers for PWM inverter
- Battery DC power supplies
- Field supply for DC motors

### 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>$T_{VJ} = 25^\circ\text{C}$ | $\leq 0.3$ mA        |
|            | $V_R = V_{RRM}$<br>$T_{VJ} = T_{VJM}$          | $\leq 5$ mA          |
| $V_F$      | $I_F = 150$ A<br>$T_{VJ} = 25^\circ\text{C}$   | $\leq 1.65$ V        |
| $V_{TO}$   | For power-loss calculations only               | 0.8 V                |
| $r_T$      | $T_{VJ} = T_{VJM}$                             | 3 $\text{m}\Omega$   |
| $R_{thJC}$ | per diode; DC current                          | 0.65 K/W             |
|            | per module                                     | 0.16 K/W             |
| $R_{thJK}$ | per diode; DC current                          | 0.83 K/W             |
|            | per module                                     | 0.21 K/W             |
| $d_s$      | Creeping distance on surface                   | 10 mm                |
| $d_A$      | Creeping distance in air                       | 9.4 mm               |
| $a$        | Max. allowable acceleration                    | 50 $\text{m/s}^2$    |

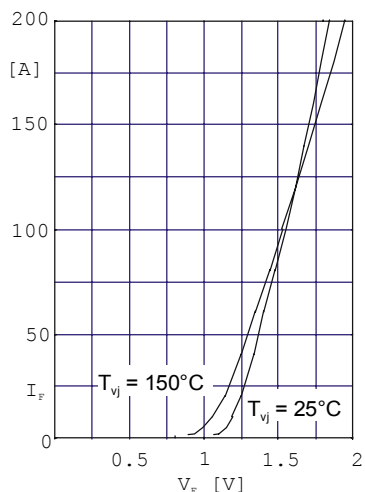


Fig. 1 Forward current versus voltage drop per diode

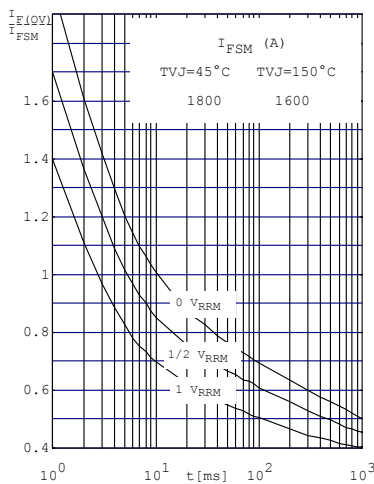


Fig. 2 Surge overload current per diode  $I_{FSM}$ : Crest value.  $t$ : duration

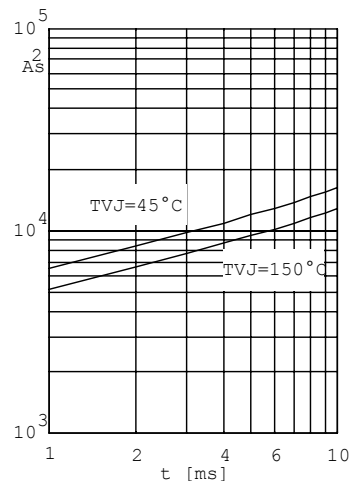


Fig. 3  $\int i^2 dt$  versus time (1-10ms) per diode (or thyristor)

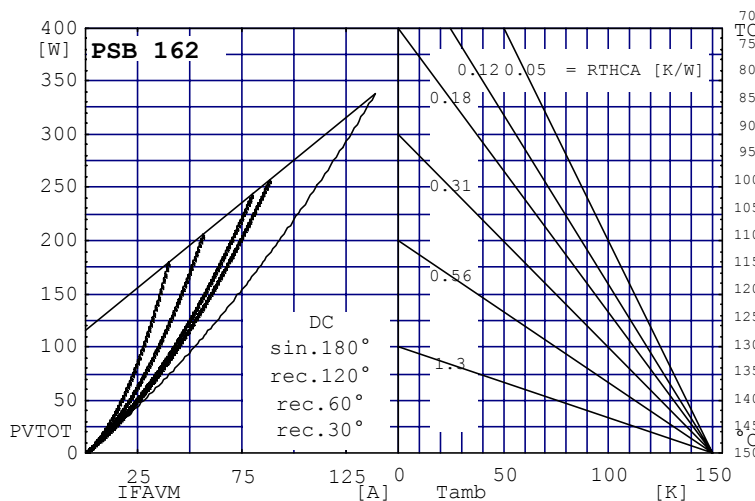


Fig. 4 Power dissipation versus direct output current and ambient temperature

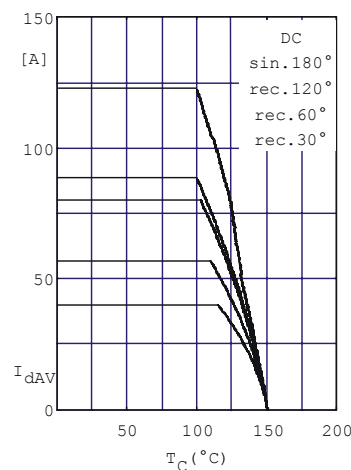


Fig. 5 Maximum forward current at case temperature

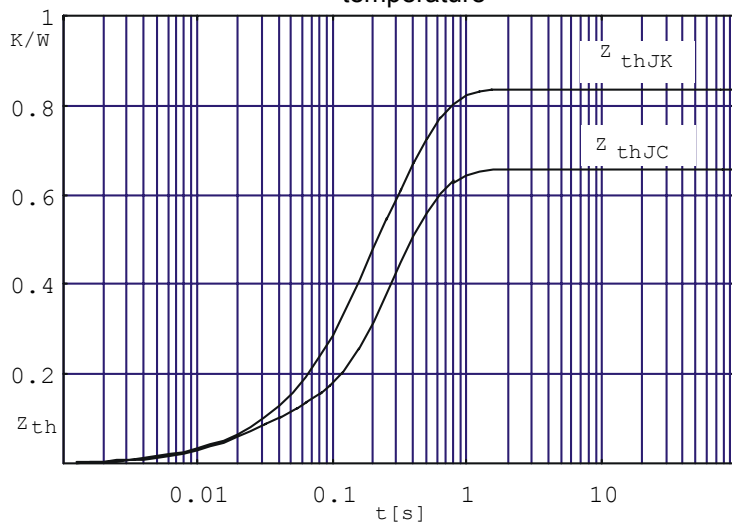


Fig. 6 Transient thermal impedance per diode (or thyristor), calculated

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