

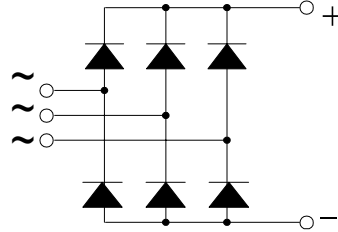
## Three Phase Rectifier Bridges

### PSD 35

$I_{dAVM} = 38 \text{ A}$   
 $V_{RRM} = 800-1800 \text{ V}$

Preliminary Data Sheet

| $V_{RSM}$<br>V | $V_{RRM}$<br>V | Type      |
|----------------|----------------|-----------|
| 800            | 800            | PSD 35/08 |
| 1200           | 1200           | PSD 35/12 |
| 1400           | 1400           | PSD 35/14 |
| 1600           | 1600           | PSD 35/16 |
| 1800           | 1800           | PSD 35/18 |



| Symbol        | Test Conditions   | Maximum Ratings                |
|---------------|---|--------------------------------|
| $I_{dAVM}$    | $T_C = 85^\circ\text{C}$ , module   | 38 A                           |
| $I_{FSM}$     | $T_{VJ} = 45^\circ\text{C}$<br>$V_R = 0$<br>$t = 10 \text{ ms}$ (50 Hz), sine | 400 A                          |
|               | $t = 8.3 \text{ ms}$ (60 Hz), sine  | 440 A                          |
|               | $T_{VJ} = T_{VJM}$<br>$V_R = 0$<br>$t = 10 \text{ ms}$ (50 Hz), sine          | 360 A                          |
|               | $t = 8.3 \text{ ms}$ (60 Hz), sine  | 400 A                          |
| $\int i^2 dt$ | $T_{VJ} = 45^\circ\text{C}$<br>$V_R = 0$<br>$t = 10 \text{ ms}$ (50 Hz), sine | 800 $\text{A}^2 \text{ s}$     |
|               | $t = 8.3 \text{ ms}$ (60 Hz), sine  | 810 $\text{A}^2 \text{ s}$     |
|               | $T_{VJ} = T_{VJM}$<br>$V_R = 0$<br>$t = 10 \text{ ms}$ (50 Hz), sine          | 650 $\text{A}^2 \text{ s}$     |
|               | $t = 8.3 \text{ ms}$ (60 Hz), sine  | 670 $\text{A}^2 \text{ s}$     |
| $T_{VJ}$      |   | -40 ... + 150 $^\circ\text{C}$ |
| $T_{VJM}$     |   | 150 $^\circ\text{C}$           |
| $T_{stg}$     |   | -40 ... + 150 $^\circ\text{C}$ |
| $V_{ISOL}$    | 50/60 HZ, RMS<br>$t = 1 \text{ min}$  | 2500 V ~                       |
|               | $I_{ISOL} \leq 1 \text{ mA}$<br>$t = 1 \text{ s}$                             | 3000 V ~                       |
| $M_d$         | Mounting torque (M4)  | 1.5 Nm                         |
|               | Terminal connection torque (M4)   | 1.5 Nm                         |
| Weight        | typ.  | 110 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

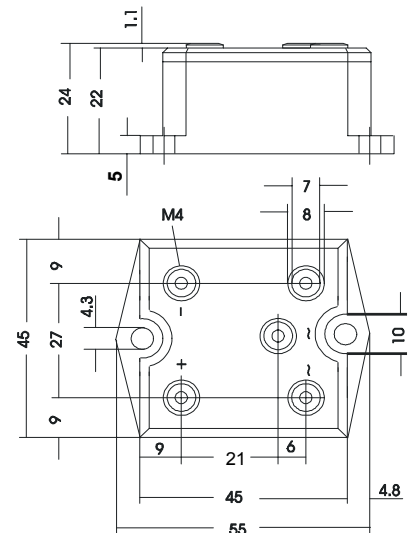
### Advantages

- 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>$T_{VJ} = 25^\circ\text{C}$       | $\leq 0.3 \text{ mA}$ |
|            | $V_R = V_{RRM}$<br>$T_{VJ} = T_{VJM}$                | $\leq 5.0 \text{ mA}$ |
| $V_F$      | $I_F = 150 \text{ A}$<br>$T_{VJ} = 25^\circ\text{C}$ | $\leq 2.2 \text{ V}$  |
| $V_{TO}$   | For power-loss calculations only                     | 0.85 V                |
| $r_T$      | $T_{VJ} = T_{VJM}$                                   | 12 $\text{m}\Omega$   |
| $R_{thJC}$ | per diode; DC current                                | 4.2 $\text{K/W}$      |
|            | per module   | 0.7 $\text{K/W}$      |
| $R_{thJK}$ | per diode; DC current                                | 4.8 $\text{K/W}$      |
|            | per module   | 0.8 $\text{K/W}$      |
| $d_S$      | Creeping distance on surface                         | 6.2 mm                |
| $d_A$      | Creeping distance in air                             | 6.2 mm                |
| $a$        | Max. allowable acceleration                          | 50 $\text{m/s}^2$     |



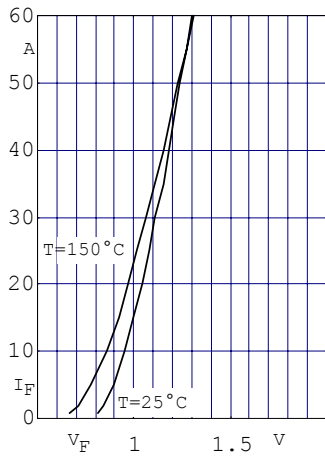


Fig. 1 Forward current versus voltage drop per diode

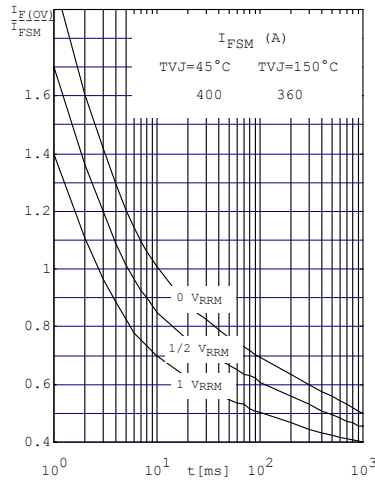


Fig. 2 Surge overload current per diode  $I_{FSM}$ : Crest value.  $t$ : duration

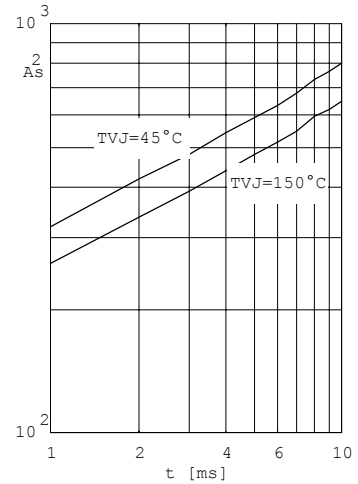


Fig. 3  $\int i^2 dt$  versus time (1-10ms) per diode (or thyristor)

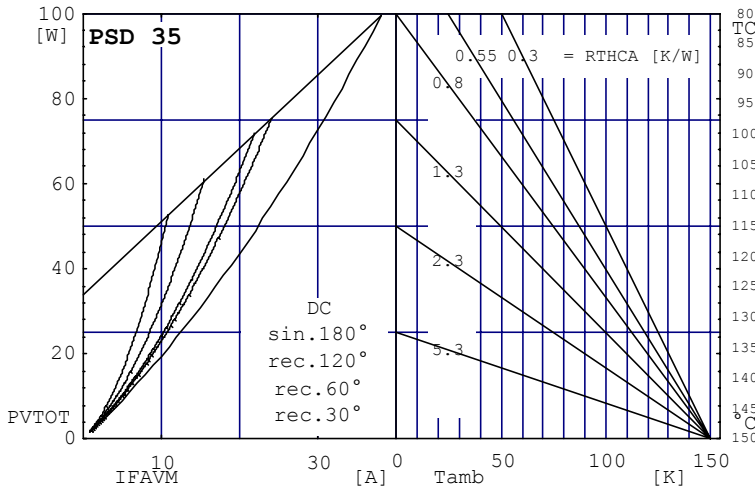


Fig. 4 Power dissipation versus direct output current and ambient temperature

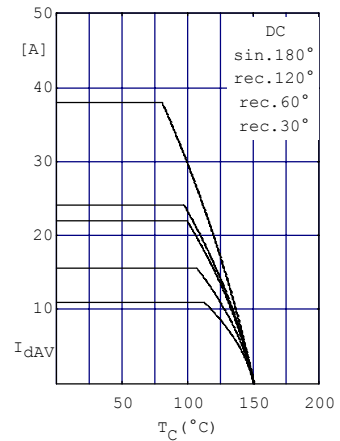


Fig. 5 Maximum forward current at case temperature

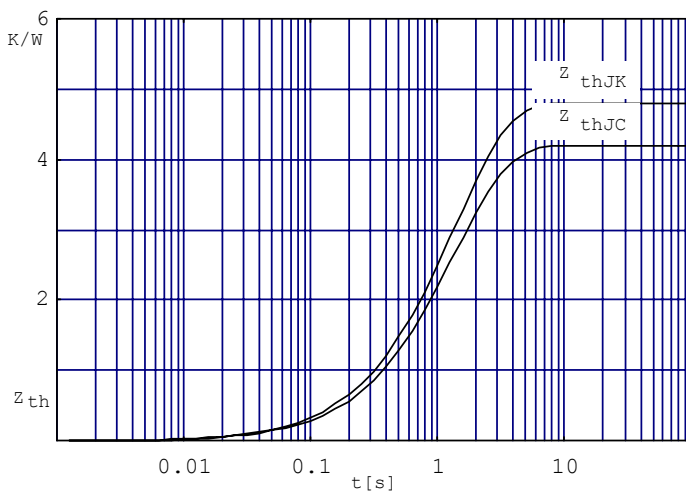


Fig. 6 Transient thermal impedance per diode (or thyristor), calculated