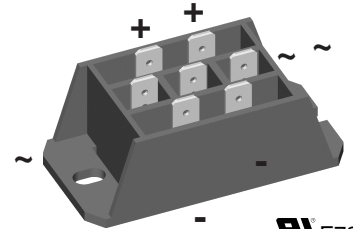
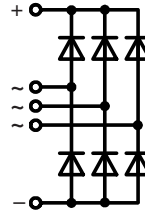


# Three Phase Rectifier Bridge

$I_{dAV} = 58 \text{ A}$   
 $V_{RRM} = 800-1800 \text{ V}$

| $V_{RSM}$<br>V | $V_{RRM}$<br>V | Type          |
|----------------|----------------|---------------|
| 900            | 800            | VUO 50-08NO3  |
| 1300           | 1200           | VUO 50-12NO3  |
| 1500           | 1400           | VUO 50-14NO3  |
| 1700           | 1600           | VUO 50-16NO3  |
| 1900           | 1800           | VUO 50-18NO3* |

\* delivery time on request



E72873

| Symbol       | Conditions                                    | Maximum Ratings                    |                       |
|--------------|---|------------------------------------|-----------------------|
| $I_{dAV}$ ①  | $T_C = 85^\circ\text{C}$ , module             | 58                                 | A                     |
| $I_{dAVM}$ ① | module  | 75                                 | A                     |
| $I_{FSM}$    | $T_{VJ} = 45^\circ\text{C}$ ;<br>$V_R = 0$    | $t = 10 \text{ ms}$ (50 Hz), sine  | 500 A                 |
|              |   | $t = 8.3 \text{ ms}$ (60 Hz), sine | 525 A                 |
| $I^2t$       | $T_{VJ} = T_{VJM}$ ;<br>$V_R = 0$             | $t = 10 \text{ ms}$ (50 Hz), sine  | 415 A                 |
|              |   | $t = 8.3 \text{ ms}$ (60 Hz), sine | 440 A                 |
| $I^2t$       | $T_{VJ} = 45^\circ\text{C}$ ;<br>$V_R = 0$    | $t = 10 \text{ ms}$ (50 Hz), sine  | 1250 A <sup>2</sup> s |
|              |   | $t = 8.3 \text{ ms}$ (60 Hz), sine | 1160 A <sup>2</sup> s |
| $T_{VJ}$     | $T_{VJ} = T_{VJM}$ ;<br>$V_R = 0$             | $t = 10 \text{ ms}$ (50 Hz), sine  | 860 A <sup>2</sup> s  |
|              |   | $t = 8.3 \text{ ms}$ (60 Hz), sine | 810 A <sup>2</sup> s  |
| $T_{VJ}$     |   | -40...+125                         | °C                    |
| $T_{VJM}$    |   | 125                                | °C                    |
| $T_{stg}$    |   | -40...+125                         | °C                    |
| $V_{ISOL}$   | 50/60 Hz, RMS<br>$I_{ISOL} \leq 1 \text{ mA}$ | $t = 1 \text{ min}$                | 3000 V~               |
|              |   | $t = 1 \text{ s}$                  | 3600 V~               |
| $M_d$        | Mounting torque (M5)<br>(10-32 UNF)           |                                    | 2-2.5 Nm              |
|              |   |                                    | 18-22 lb.in.          |
| Weight       | typ.  | 50                                 | g                     |

## Features

- Package with DCB ceramic base plate
- Isolation voltage 3600 V~
- Planar passivated chips
- Blocking voltage up to 1800 V
- low forward voltage drop
- ¼" fast-on terminals
- UL registered E 72873

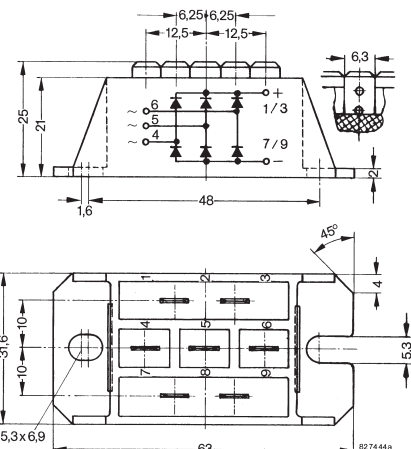
## Applications

- Supplies for DC power equipment
- Input rectifiers for PWM inverter
- Battery DC power supplies
- Rectifier for DC motors field current

## Advantages

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

## Dimensions in mm (1 mm = 0.0394")



**Use output terminals in parallel connection!**

| Symbol     | Conditions                             | Characteristic Values       |                  |
|------------|--|-----------------------------|------------------|
| $I_R$      | $V_R = V_{RRM}$ ;<br>$V_R = V_{RRM}$ ; | $T_{VJ} = 25^\circ\text{C}$ | 0.3 mA           |
|            |  | $T_{VJ} = T_{VJM}$          | 5 mA             |
| $V_F$      | $I_F = 150 \text{ A}$ ;                | $T_{VJ} = 25^\circ\text{C}$ | 1.9 V            |
| $V_{T0}$   | For power-loss calculations only       |                             | 0.9 V            |
| $r_T$      |  |                             | 6.0 mΩ           |
| $R_{thJC}$ | per diode, DC current                  | 1.62                        | K/W              |
|            | per module                             | 0.27                        | K/W              |
| $R_{thJH}$ | per diode, DC current                  | 2.22                        | K/W              |
|            | per module                             | 0.37                        | K/W              |
| $d_S$      | Creeping distance on surface           | 10                          | mm               |
| $d_A$      | Creepage distance in air               | 9.4                         | mm               |
| $a$        | Max. allowable acceleration            | 50                          | m/s <sup>2</sup> |

Data according to IEC 60747 and refer to a single diode unless otherwise stated.

① for resistive load at bridge output

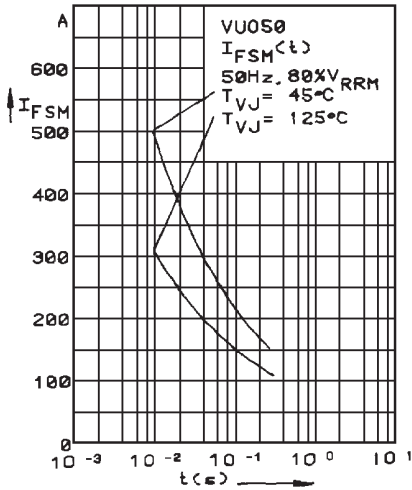


Fig. 1 Surge overload current  
 $I_{FSM}$ : Crest value,  $t$ : duration

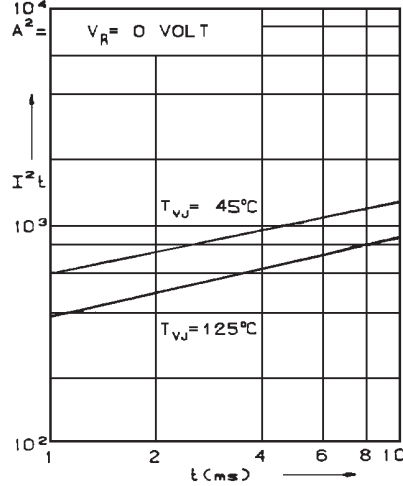


Fig. 2  $I^2t$  versus time (1-10 ms)

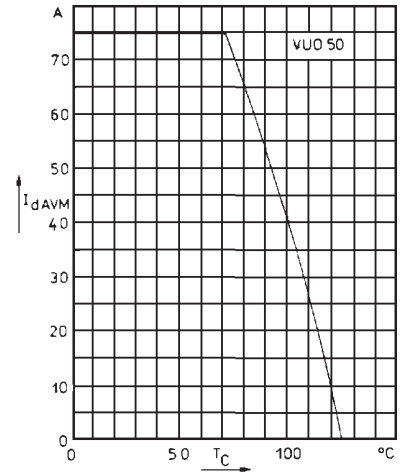


Fig. 3 Max. forward current at case temperature

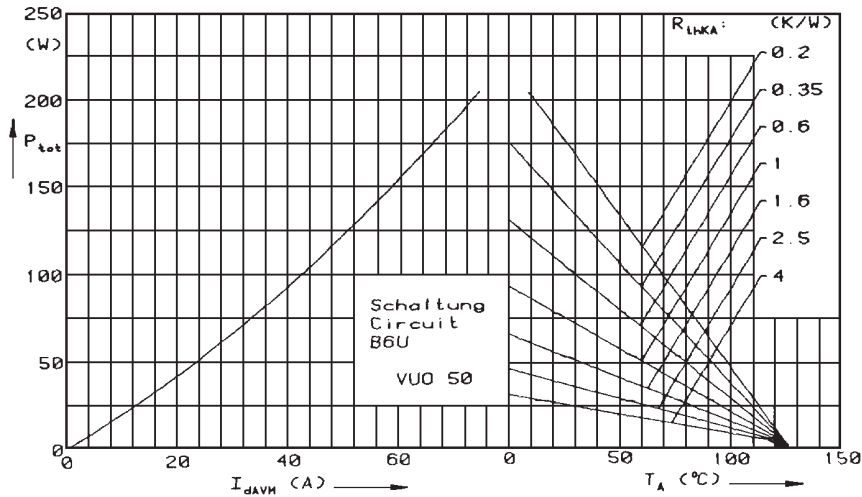


Fig. 4 Power dissipation versus forward current and ambient temperature

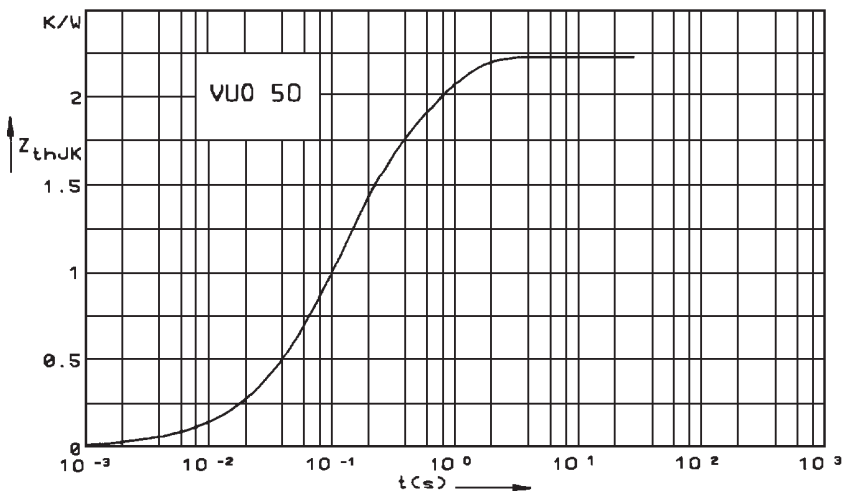


Fig. 5 Transient thermal impedance junction to heatsink per diode

Constants for  $Z_{thJK}$  calculation:

| i | $R_{thi}$ (K/W) | $t_i$ (s) |
|---|-----------------|-----------|
| 1 | 1.21            | 0.1015    |
| 2 | 0.1339          | 0.1026    |
| 3 | 0.2763          | 0.4919    |