

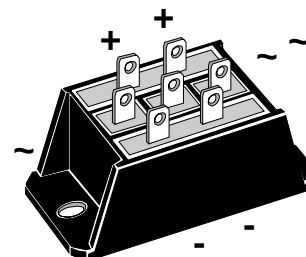
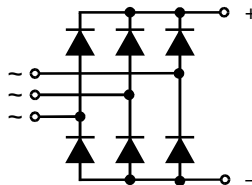
# Three Phase Rectifier Bridge

$$I_{dAV} = 37 \text{ A}$$

$$V_{RRM} = 800-1800 \text{ V}$$

| $V_{RSM}$<br>V | $V_{RRM}$<br>V | Type          |
|----------------|----------------|---------------|
| 900            | 800            | VUO 30-08NO3  |
| 1300           | 1200           | VUO 30-12NO3  |
| 1500           | 1400           | VUO 30-14NO3  |
| 1700           | 1600           | VUO 30-16NO3  |
| 1900           | 1800           | VUO 30-18NO3* |

\* delivery time on request



| Symbol       | Test Conditions                            | Maximum Ratings                                         |
|--------------|--------------------------------------------|---------------------------------------------------------|
| $I_{dAV}$ ①  | $T_C = 85^\circ\text{C}$ , module          | 37 A                                                    |
| $I_{dAVM}$ ① | module                                     | 50 A                                                    |
| $I_{FSM}$    | $T_{VJ} = 45^\circ\text{C}$ ;<br>$V_R = 0$ | $t = 10 \text{ ms}$ (50 Hz), sine 300 A                 |
|              |                                            | $t = 8.3 \text{ ms}$ (60 Hz), sine 330 A                |
|              | $T_{VJ} = T_{VJM}$<br>$V_R = 0$            | $t = 10 \text{ ms}$ (50 Hz), sine 270 A                 |
|              |                                            | $t = 8.3 \text{ ms}$ (60 Hz), sine 290 A                |
| $I^2t$       | $T_{VJ} = 45^\circ\text{C}$<br>$V_R = 0$   | $t = 10 \text{ ms}$ (50 Hz), sine 450 A <sup>2</sup> s  |
|              |                                            | $t = 8.3 \text{ ms}$ (60 Hz), sine 460 A <sup>2</sup> s |
|              | $T_{VJ} = T_{VJM}$<br>$V_R = 0$            | $t = 10 \text{ ms}$ (50 Hz), sine 365 A <sup>2</sup> s  |
|              |                                            | $t = 8.3 \text{ ms}$ (60 Hz), sine 355 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                              | $t = 1 \text{ min}$ 3000 V~                             |
|              | $I_{ISOL} \leq 1 \text{ mA}$               | $t = 1 \text{ s}$ 3600 V~                               |
| $M_d$        | Mounting torque                            | (M5) 2-2.5 Nm<br>(10-32 UNF) 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
- 1/4" fast-on terminals
- UL registered E 72873

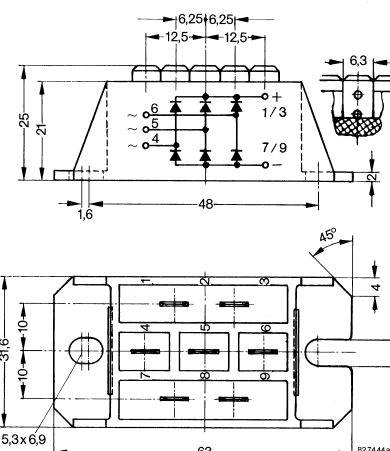
## Applications

- 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")



| Symbol     | Test Conditions                                        | Characteristic Values |
|------------|--------------------------------------------------------|-----------------------|
| $I_R$      | $V_R = V_{RRM}$ ;<br>$T_{VJ} = 25^\circ\text{C}$       | 0.3 mA                |
|            | $V_R = V_{RRM}$ ;<br>$T_{VJ} = T_{VJM}$                | 5 mA                  |
| $V_F$      | $I_F = 150 \text{ A}$ ;<br>$T_{VJ} = 25^\circ\text{C}$ | 2.55 V                |
| $V_{T0}$   | For power-loss calculations only                       | 0.9 V                 |
| $r_T$      |                                                        | 11 mΩ                 |
| $R_{thJC}$ | per diode, DC current                                  | 2.4 K/W               |
|            | per module                                             | 0.4 K/W               |
| $R_{thJH}$ | per diode, DC current                                  | 3.0 K/W               |
|            | per module                                             | 0.5 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

IXYS reserves the right to change limits, test conditions and dimensions.

**Use output terminals in parallel connection!**

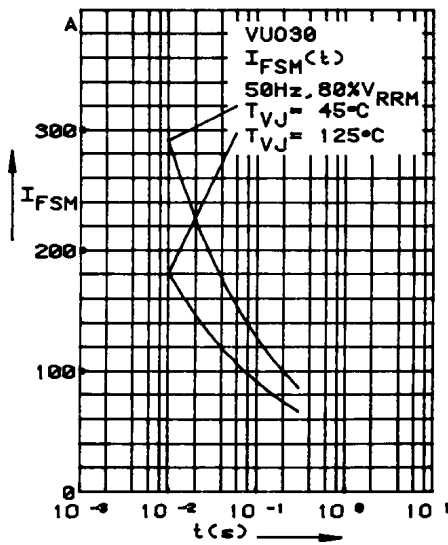


Fig. 1 Surge overload current  
 $I_{FSM}$ : Crest value,  $t$ : duration

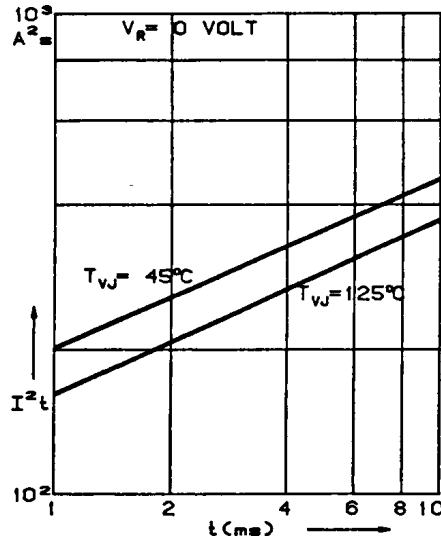


Fig. 2  $I^2t$  versus time (1-10 ms)

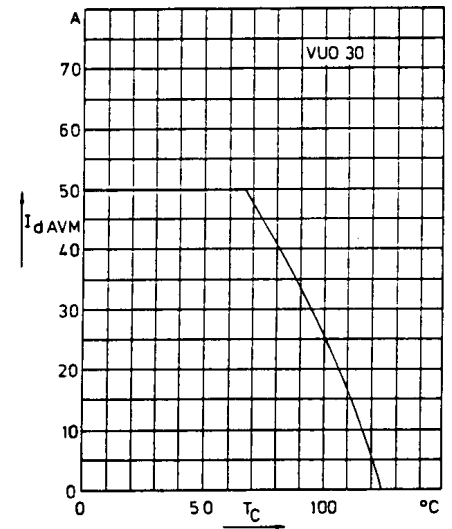


Fig. 3 Max. forward current at case temperature

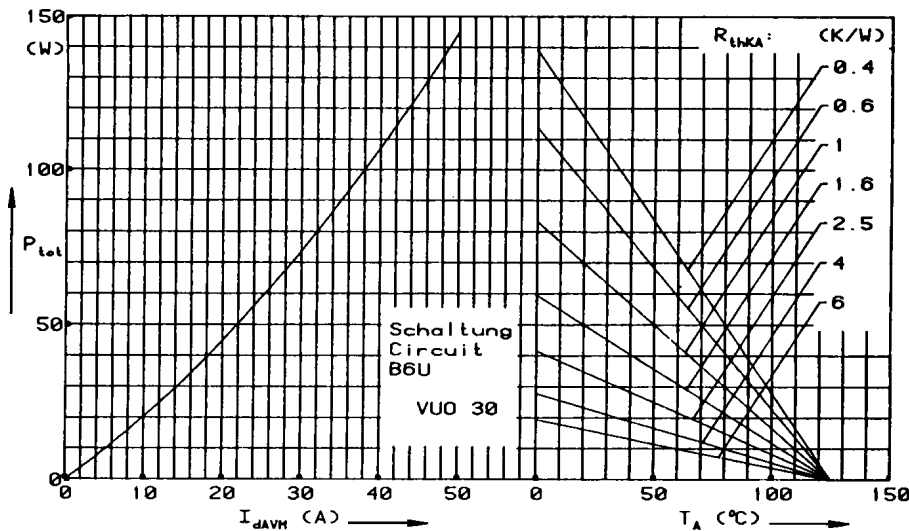


Fig. 4 Power dissipation versus forward current and ambient temperature

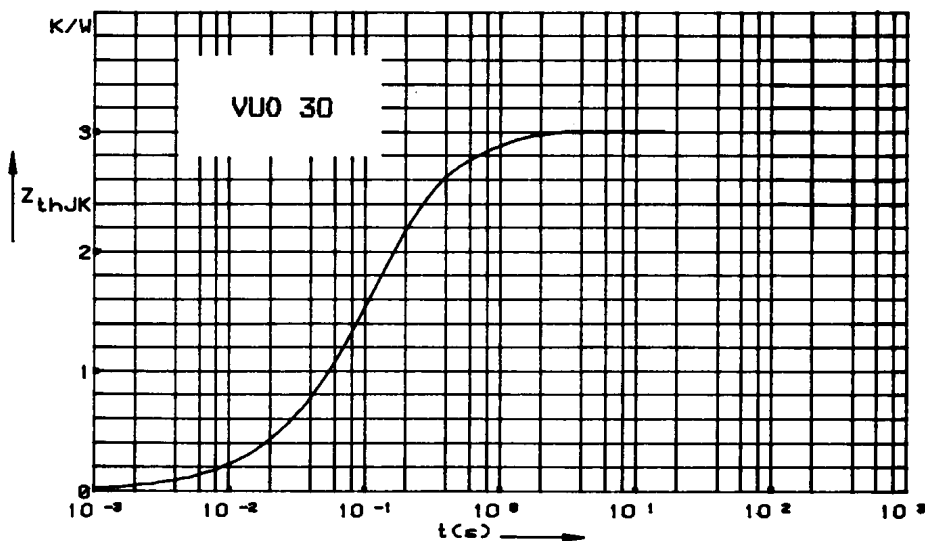


Fig. 5 Transient thermal impedance junction to heatsink per diode

Constants for  $Z_{thJK}$  calculation:

| i | $R_{thi}$ (K/W) | $t_i$ (s) |
|---|-----------------|-----------|
| 1 | 0.489           | 0.0717    |
| 2 | 0.544           | 0.1241    |
| 3 | 1.376           | 0.1214    |
| 4 | 0.6             | 0.620     |