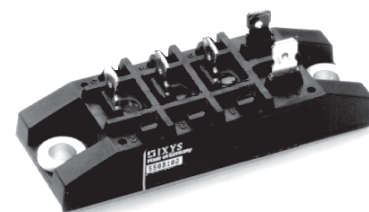
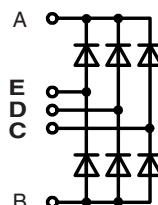


## Three Phase Rectifier Bridge

$$I_{dAV} = 70 \text{ A}$$

$$V_{RRM} = 1600 \text{ V}$$

| $V_{RSM}$ | $V_{RRM}$ | Types        |
|-----------|-----------|--------------|
| V         | V         |              |
| 1700      | 1600      | VUO 70-16NO7 |



| Symbol      | Conditions                                     | Maximum Ratings                    |                       |
|-------------|------------------------------------------------|------------------------------------|-----------------------|
| $I_{dAV}^*$ | $T_C = 100^\circ\text{C}$ , module             | 70                                 | A                     |
| $I_{FSM}$   | $T_{VJ} = 45^\circ\text{C}$                    | $t = 10 \text{ ms}$ (50 Hz), sine  | 550 A                 |
|             | $V_R = 0$                                      | $t = 8.3 \text{ ms}$ (60 Hz), sine | 600 A                 |
|             | $T_{VJ} = T_{VJM}$                             | $t = 10 \text{ ms}$ (50 Hz), sine  | 500 A                 |
|             | $V_R = 0$                                      | $t = 8.3 \text{ ms}$ (60 Hz), sine | 550 A                 |
| $I^2t$      | $T_{VJ} = 45^\circ\text{C}$                    | $t = 10 \text{ ms}$ (50 Hz), sine  | 1520 A <sup>2</sup> s |
|             | $V_R = 0$                                      | $t = 8.3 \text{ ms}$ (60 Hz), sine | 1520 A <sup>2</sup> s |
|             | $T_{VJ} = T_{VJM}$                             | $t = 10 \text{ ms}$ (50 Hz), sine  | 1250 A <sup>2</sup> s |
|             | $V_R = 0$                                      | $t = 8.3 \text{ ms}$ (60 Hz), sine | 1250 A <sup>2</sup> 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 $t = 1 \text{ min}$              | 2500                               | V~                    |
|             | $I_{ISOL} \leq 1 \text{ mA}$ $t = 1 \text{ s}$ | 3000                               | V~                    |
| $M_d$       | Mounting torque (M5)<br>(10-32 UNF)            | 5 $\pm 15\%$                       | Nm                    |
|             |                                                | 44 $\pm 15\%$                      | lb.in.                |
| Weight      | typ.                                           | 110                                | g                     |

### Features

- Package with copper base plate
- Isolation voltage 3000 V~
- Planar passivated chips
- Low forward voltage drop
- ¼" fast-on power terminals

### Applications

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

### Advantages

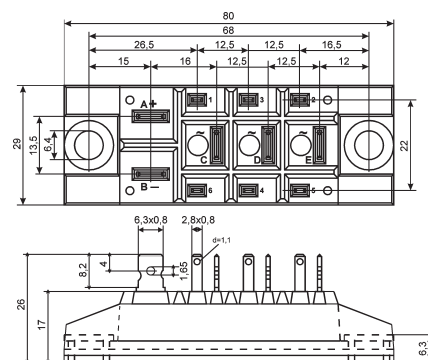
- Easy to mount with two screws
- Space and weight savings
- Improved temperature and power cycling capability
- Small and light weight

| Symbol     | Conditions                                        | Characteristic Values |                     |
|------------|---------------------------------------------------|-----------------------|---------------------|
| $I_R$      | $V_R = V_{RRM}$ $T_{VJ} = 25^\circ\text{C}$       | $\leq$                | 0.5 mA              |
|            | $V_R = V_{RRM}$ $T_{VJ} = T_{VJM}$                | $\leq$                | 10 mA               |
| $V_F$      | $I_F = 150 \text{ A}$ $T_{VJ} = 25^\circ\text{C}$ | $\leq$                | 1.7 V               |
| $V_{T0}$   | For power-loss calculations only                  |                       | 0.8 V               |
| $r_T$      |                                                   |                       | 8 mΩ                |
| $R_{thJC}$ | per diode; DC current                             |                       | 1.45 K/W            |
|            | per module                                        |                       | 0.242 K/W           |
| $R_{thJH}$ | per diode, DC current                             |                       | 1.9 K/W             |
|            | per module                                        |                       | 0.317 K/W           |
| $d_s$      | Creeping distance on surface                      |                       | 16.1 mm             |
| $d_A$      | Creepage distance in air                          |                       | 7.5 mm              |
| $a$        | Max. allowable acceleration                       |                       | 50 m/s <sup>2</sup> |

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

\* for resistive load at bridge output

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



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

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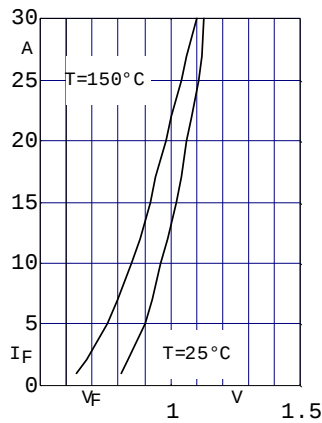


Fig. 1 Forward current versus voltage drop per diode

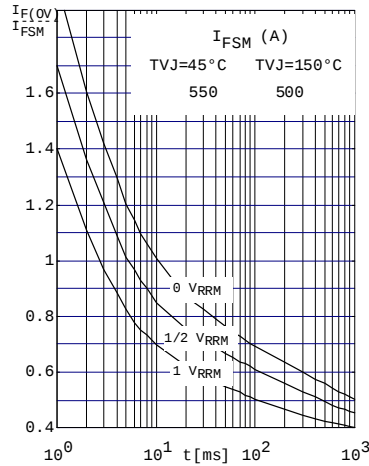


Fig. 2 Surge overload current per diode  
 $I_{FSM}$ : Crest value.  $t$ : duration

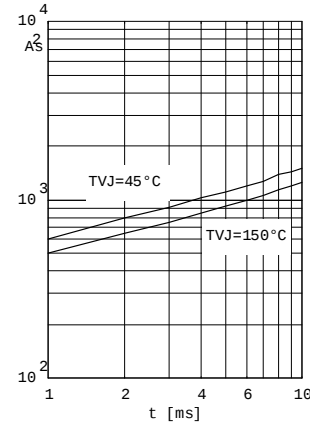


Fig. 3  $I^2dt$  versus time (1-10ms) per diode or thyristor

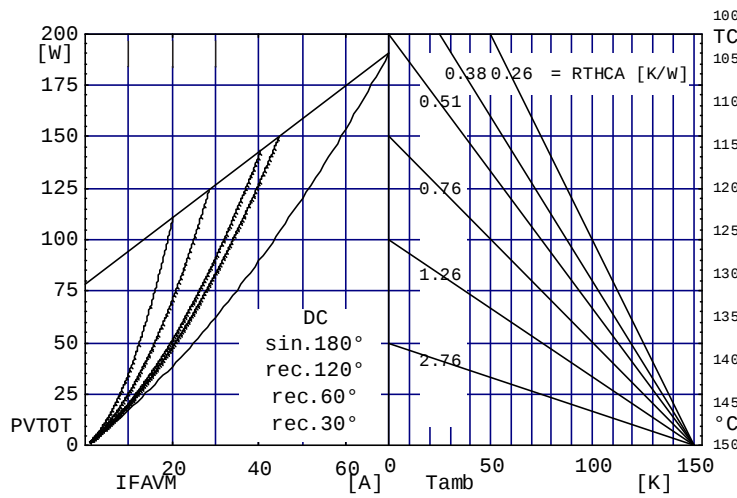


Fig. 4 Power dissipation versus direct output current and ambient temperature

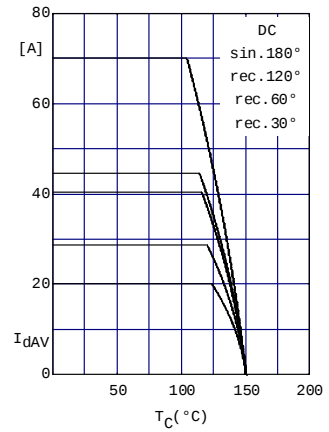


Fig. 5 Maximum forward current at case temperature

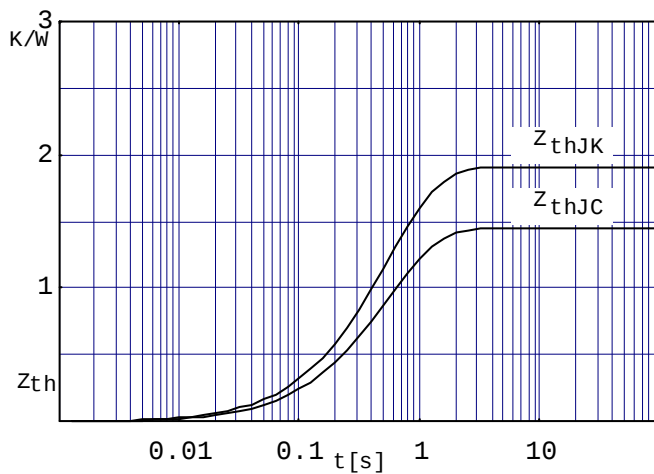


Fig. 6 Transient thermal impedance per diode/thyristor, calculated