

Single Phase Rectifier Bridge

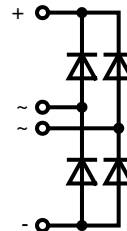
Standard and Avalanche Types

$$I_{dAV} = 18 \text{ A}$$

$$V_{RRM} = 800-1600 \text{ V}$$

| V_{RSM} V | V_{BRmin} ① V | V_{RRM} V | Standard Types | Avalanche Types |
|----------------|--------------------|----------------|-------------------|--------------------|
| 900 | | 800 | VBO 13-08NO2 | |
| 1300 | 1230 | 1200 | VBO 13-12NO2 | VBO 13-12AO2 |
| 1700 | 1630 | 1600 | VBO 13-16NO2 | VBO 13-16AO2 |

① For Avalanche Types only



| Symbol | Conditions | Maximum Ratings | |
|---------------|-----------------------------------------------|------------------------------|----------------------|
| I_{dAV} ② | $T_C = 85^\circ\text{C}$, module | 18 | A |
| I_{dAVM} | module | 30 | A |
| P_{RSM} | $T_{VJ} = T_{VJM}$ | 2.5 | kW |
| I_{FSM} | $T_{VJ} = 45^\circ\text{C}; V_R = 0$ | $t = 10 \text{ ms}$ (50 Hz) | 220 A |
| | | $t = 8.3 \text{ ms}$ (60 Hz) | 230 A |
| | $T_{VJ} = T_{VJM}; V_R = 0$ | $t = 10 \text{ ms}$ (50 Hz) | 180 A |
| | | $t = 8.3 \text{ ms}$ (60 Hz) | 190 A |
| I^2t | $T_{VJ} = 45^\circ\text{C}; V_R = 0$ | $t = 10 \text{ ms}$ (50 Hz) | 240 A ² s |
| | | $t = 8.3 \text{ ms}$ (60 Hz) | 220 A ² s |
| | $T_{VJ} = T_{VJM}; V_R = 0$ | $t = 10 \text{ ms}$ (50 Hz) | 160 A ² s |
| | | $t = 8.3 \text{ ms}$ (60 Hz) | 150 A ² s |
| T_{VJ} | | -40...+150 | °C |
| T_{VJM} | | 150 | °C |
| T_{stg} | | -40...+125 | °C |
| V_{ISOL} | 50/60 Hz, RMS $I_{ISOL} \leq 1 \text{ mA}$ | $t = 1 \text{ min}$ | 3000 V~ |
| | | $t = 1 \text{ s}$ | 3600 V~ |
| M_d | Mounting torque (M5) (10-32 UNF) | | 1.5-2 Nm |
| | | | 13-18 lb.in. |
| Weight | Typ. | 15 | g |

Features

- Avalanche rated parts available
- Package with DCB ceramic base plate
- Isolation voltage 3600 V~
- Planar passivated chips
- Low forward voltage drop
- ¼" fast-on terminals
- UL registered E 72873

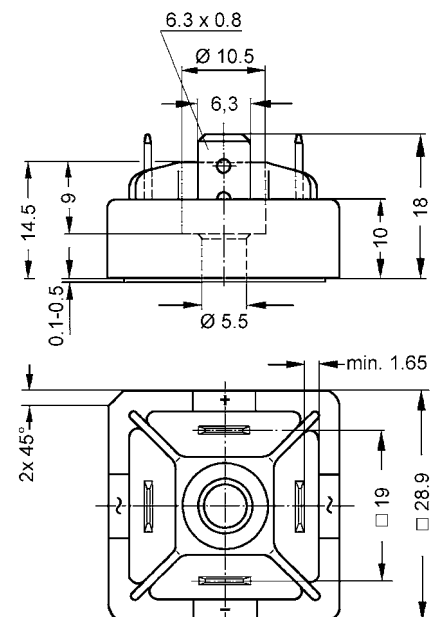
Applications

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

Advantages

- Easy to mount with one screw
- Space and weight savings
- Improved temperature & power cycling

Dimensions in mm (1 mm = 0.0394")



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

② for resistive load at bridge output

③ with isolated fast-on tabs.

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

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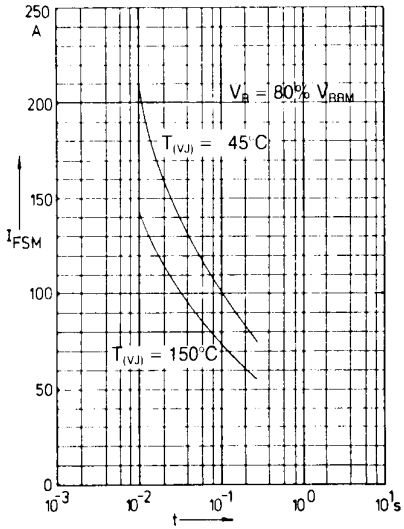


Fig. 1 Surge overload current per diode
 I_{FSM} : Crest value, t : duration

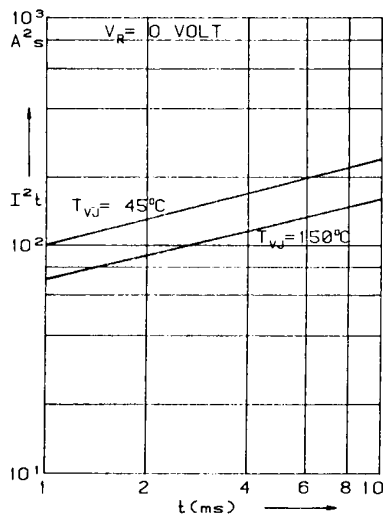


Fig. 2 I^2t versus time (1-10 ms) per diode

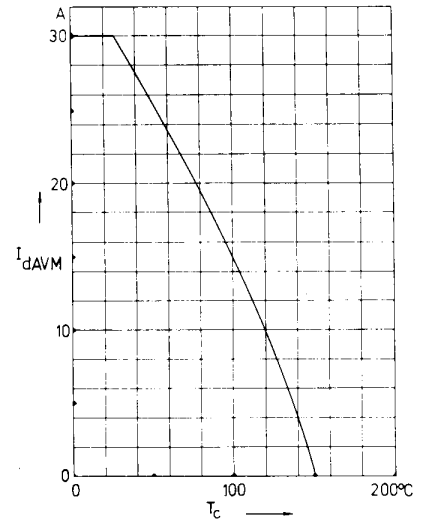


Fig. 3 Max. forward current at case temperature

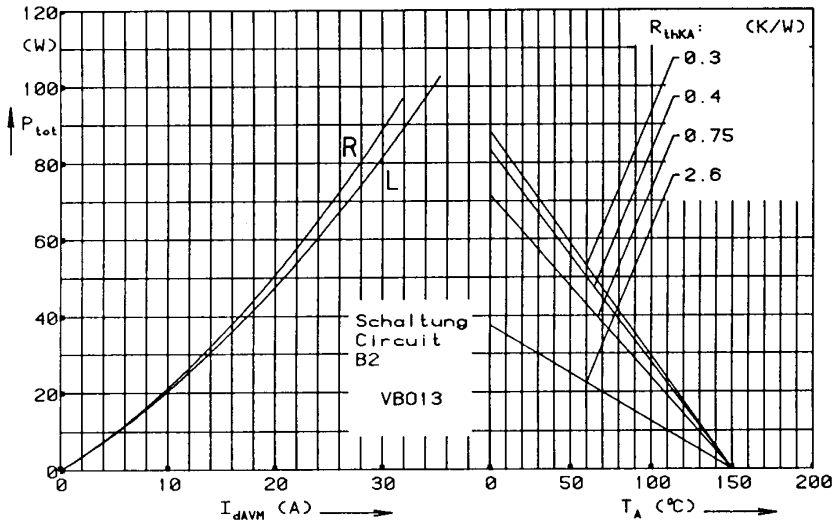


Fig. 4 Power dissipation versus direct output current and ambient temperature

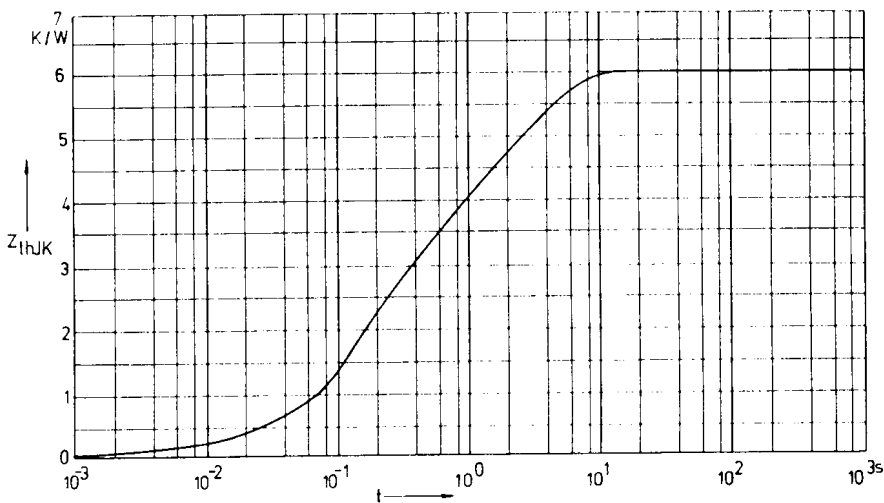


Fig. 5 Transient thermal impedance junction to heatsink per diode

Constants for $Z_{\theta JK}$ calculation:

| i | $R_{\theta i}$ (K/W) | t_i (s) |
|---|----------------------|-----------|
| 1 | 0.059 | 0.00217 |
| 2 | 2.714 | 0.159 |
| 3 | 3.227 | 2.34 |