

Single Phase Rectifier Bridge

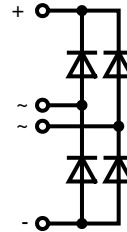
Standard and Avalanche Types

$$I_{dAV} = 31 \text{ A}$$

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

| V_{RSM} V | V_{BRmin} ① V | V_{RRM} V | Standard Types | Avalanche Types |
|----------------|--------------------|----------------|-------------------|--------------------|
| 900 | | 800 | VBO 20-08NO2 | |
| 1300 | 1230 | 1200 | VBO 20-12NO2 | VBO 20-12AO2 |
| 1500 | 1430 | 1400 | VBO 20-14NO2 | VBO 20-14AO2 |
| 1700 | 1630 | 1600 | VBO 20-16NO2 | VBO 20-16AO2 |

① For Avalanche Types only



| Symbol | Conditions | Maximum Ratings | |
|---------------|---|------------------------------|----------------------|
| I_{dAV} ② | $T_C = 85^\circ\text{C}$, module | 31 | A |
| I_{dAVM} | module | 40 | A |
| P_{RSM} | $T_{VJ} = T_{VJM}$ | 3.4 | kW |
| I_{FSM} | $T_{VJ} = 45^\circ\text{C}$; $V_R = 0$ | $t = 10 \text{ ms}$ (50 Hz) | 300 A |
| | | $t = 8.3 \text{ ms}$ (60 Hz) | 315 A |
| | $T_{VJ} = T_{VJM}$; $V_R = 0$ | $t = 10 \text{ ms}$ (50 Hz) | 250 A |
| | | $t = 8.3 \text{ ms}$ (60 Hz) | 265 A |
| I^2t | $T_{VJ} = 45^\circ\text{C}$; $V_R = 0$ | $t = 10 \text{ ms}$ (50 Hz) | 450 A ² s |
| | | $t = 8.3 \text{ ms}$ (60 Hz) | 420 A ² s |
| | $T_{VJ} = T_{VJM}$; $V_R = 0$ | $t = 10 \text{ ms}$ (50 Hz) | 312 A ² s |
| | | $t = 8.3 \text{ ms}$ (60 Hz) | 290 A ² 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 $I_{ISOL} \leq 1 \text{ mA}$ | $t = 1 \text{ min}$ | 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
- 1/4" fast-on terminals
- UL registered E 72873

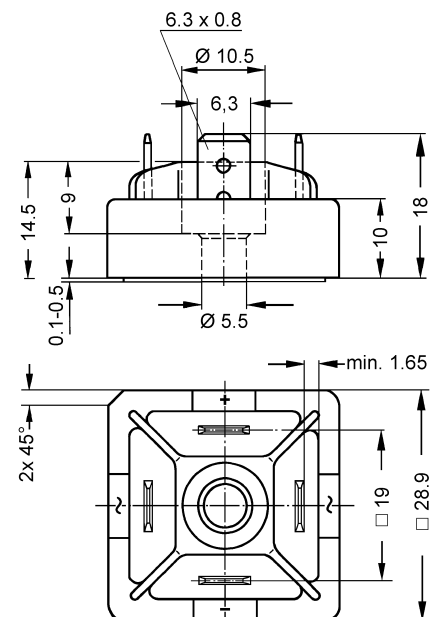
Applications

- 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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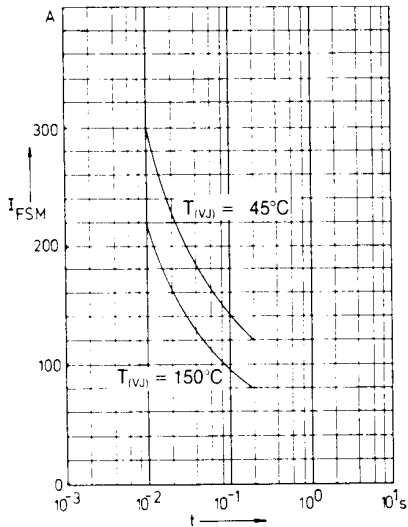


Fig. 1 Surge overload current per diode
 I_{FSM} : Crest value, t : duration

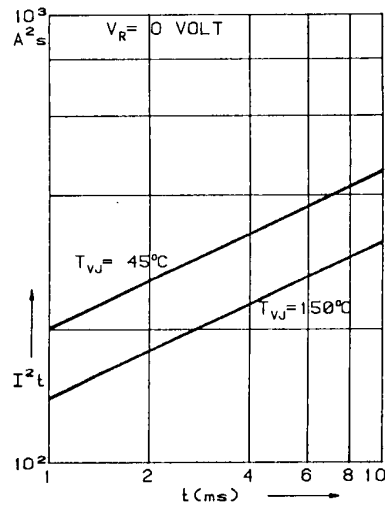


Fig. 2 I^2t versus time (1-10 ms)
 per diode

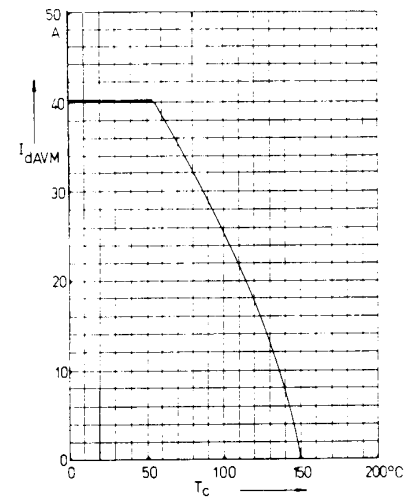


Fig. 3 Max. forward current at case temperature

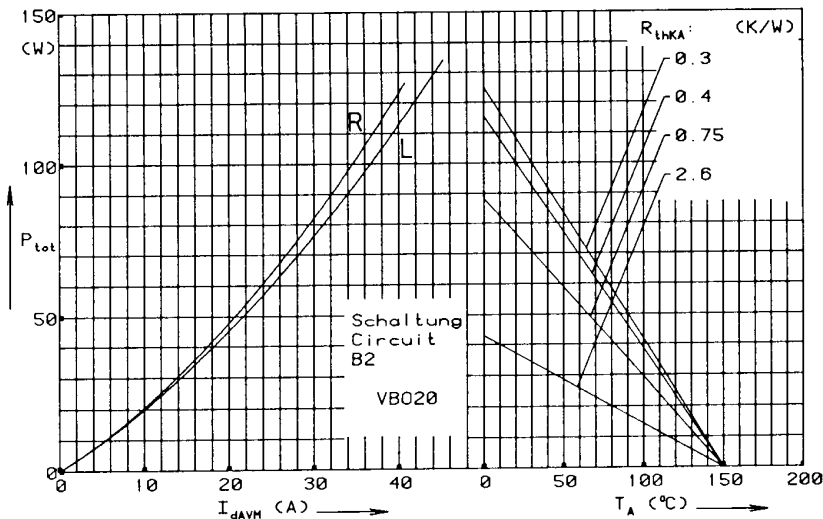


Fig. 4 Power dissipation versus direct output current and ambient temperature

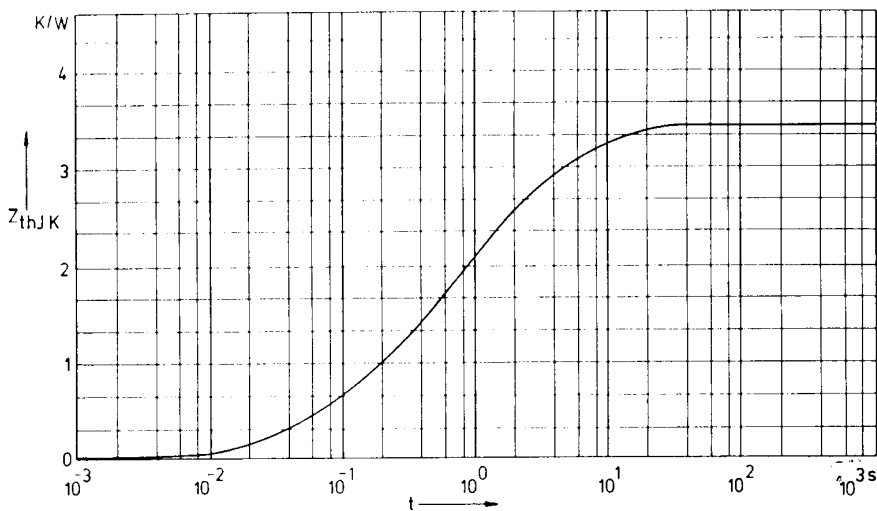


Fig. 5 Transient thermal impedance junction to heatsink per diode

Constants for Z_{thJK} calculation:

| i | R_{thi} (K/W) | t_i (s) |
|-----|-----------------|-----------|
| 1 | 0.775 | 0.0788 |
| 2 | 1.390 | 0.504 |
| 3 | 1.255 | 3.701 |

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