

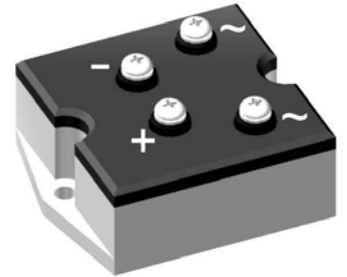
Standard Rectifier Module

| 1~ Rectifier | |
|-----------------|---------|
| V_{RRM} | = 800 V |
| I_{DAV} | = 45 A |
| I_{FSM} | = 750 A |

1~ Rectifier Bridge

Part number

VBO50-08NO7



 E72873



Features / Advantages:

- Package with DCB ceramic
- Improved temperature and power cycling
- Planar passivated chips
- Very low forward voltage drop
- Very low leakage current

Applications:

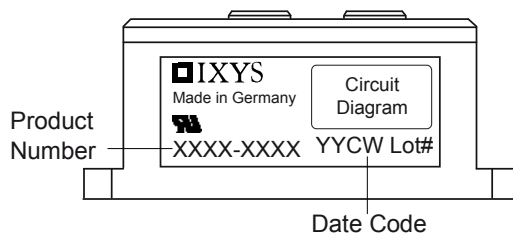
- Diode for main rectification
- For one phase bridge configurations
- Supplies for DC power equipment
- Input rectifiers for PWM inverter
- Battery DC power supplies
- Field supply for DC motors

Package: PWS-B

- Industry standard outline
- RoHS compliant
- Easy to mount with two screws
- Base plate: Aluminium internally DCB isolated
- Advanced power cycling

| Rectifier | | | | Ratings | | |
|------------|--|-------------------------------------|-------------------------|---------|------|-------------------|
| Symbol | Definition | Conditions | min. | typ. | max. | Unit |
| V_{RSM} | max. non-repetitive reverse blocking voltage | $T_{VJ} = 25^{\circ}C$ | | | 900 | V |
| V_{RRM} | max. repetitive reverse blocking voltage | $T_{VJ} = 25^{\circ}C$ | | | 800 | V |
| I_R | reverse current | $V_R = 800 V$ | $T_{VJ} = 25^{\circ}C$ | | 100 | μA |
| | | $V_R = 800 V$ | $T_{VJ} = 150^{\circ}C$ | | 1.5 | mA |
| V_F | forward voltage drop | $I_F = 20 A$ | $T_{VJ} = 25^{\circ}C$ | | 1.03 | V |
| | | | | | 1.14 | V |
| | | $I_F = 40 A$ | $T_{VJ} = 125^{\circ}C$ | | 0.92 | V |
| | | | | | 1.06 | V |
| I_{DAV} | bridge output current | $T_C = 85^{\circ}C$ | $T_{VJ} = 150^{\circ}C$ | | 45 | A |
| | | rectangular $d = 0.5$ | | | | |
| V_{FO} | threshold voltage | | $T_{VJ} = 150^{\circ}C$ | | 0.76 | V |
| r_F | slope resistance | | | | 6.9 | m Ω |
| R_{thJC} | thermal resistance junction to case | | | | 2.7 | K/W |
| R_{thCH} | thermal resistance case to heatsink | | | 0.4 | | K/W |
| P_{tot} | total power dissipation | | $T_C = 25^{\circ}C$ | | 46 | W |
| I_{FSM} | max. forward surge current | $t = 10 \text{ ms; (50 Hz), sine}$ | $T_{VJ} = 45^{\circ}C$ | | 750 | A |
| | | $t = 8,3 \text{ ms; (60 Hz), sine}$ | $V_R = 0 V$ | | 810 | A |
| | | $t = 10 \text{ ms; (50 Hz), sine}$ | $T_{VJ} = 150^{\circ}C$ | | 640 | A |
| | | $t = 8,3 \text{ ms; (60 Hz), sine}$ | $V_R = 0 V$ | | 690 | A |
| I^2t | value for fusing | $t = 10 \text{ ms; (50 Hz), sine}$ | $T_{VJ} = 45^{\circ}C$ | | 2.82 | kA ² s |
| | | $t = 8,3 \text{ ms; (60 Hz), sine}$ | $V_R = 0 V$ | | 2.73 | kA ² s |
| | | $t = 10 \text{ ms; (50 Hz), sine}$ | $T_{VJ} = 150^{\circ}C$ | | 2.05 | kA ² s |
| | | $t = 8,3 \text{ ms; (60 Hz), sine}$ | $V_R = 0 V$ | | 1.98 | kA ² s |
| C_J | junction capacitance | $V_R = 400 V; f = 1 \text{ MHz}$ | $T_{VJ} = 25^{\circ}C$ | | 10 | pF |

| Package PWS-B | | | Ratings | | | |
|----------------|--|----------------------|---------|------|------|------|
| Symbol | Definition | Conditions | min. | typ. | max. | Unit |
| I_{RMS} | RMS current | per terminal | | | 100 | A |
| T_{stg} | storage temperature | | -40 | | 125 | °C |
| T_{VJ} | virtual junction temperature | | -40 | | 150 | °C |
| Weight | | | | 193 | | g |
| M_D | mounting torque | | 4.25 | | 5.75 | Nm |
| M_T | terminal torque | | 2.5 | | 3.5 | Nm |
| $d_{Spp/App}$ | creepage distance on surface striking distance through air | terminal to terminal | 11.0 | | | mm |
| $d_{Spb/Appb}$ | | terminal to backside | 7.5 | | | mm |
| V_{ISOL} | isolation voltage | t = 1 second | 3000 | | | V |
| | | t = 1 minute | 2500 | | | V |

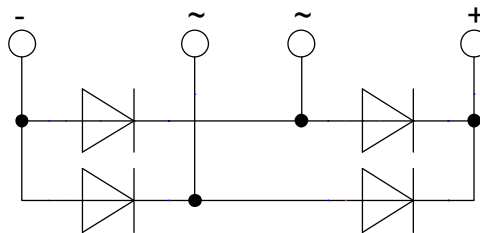
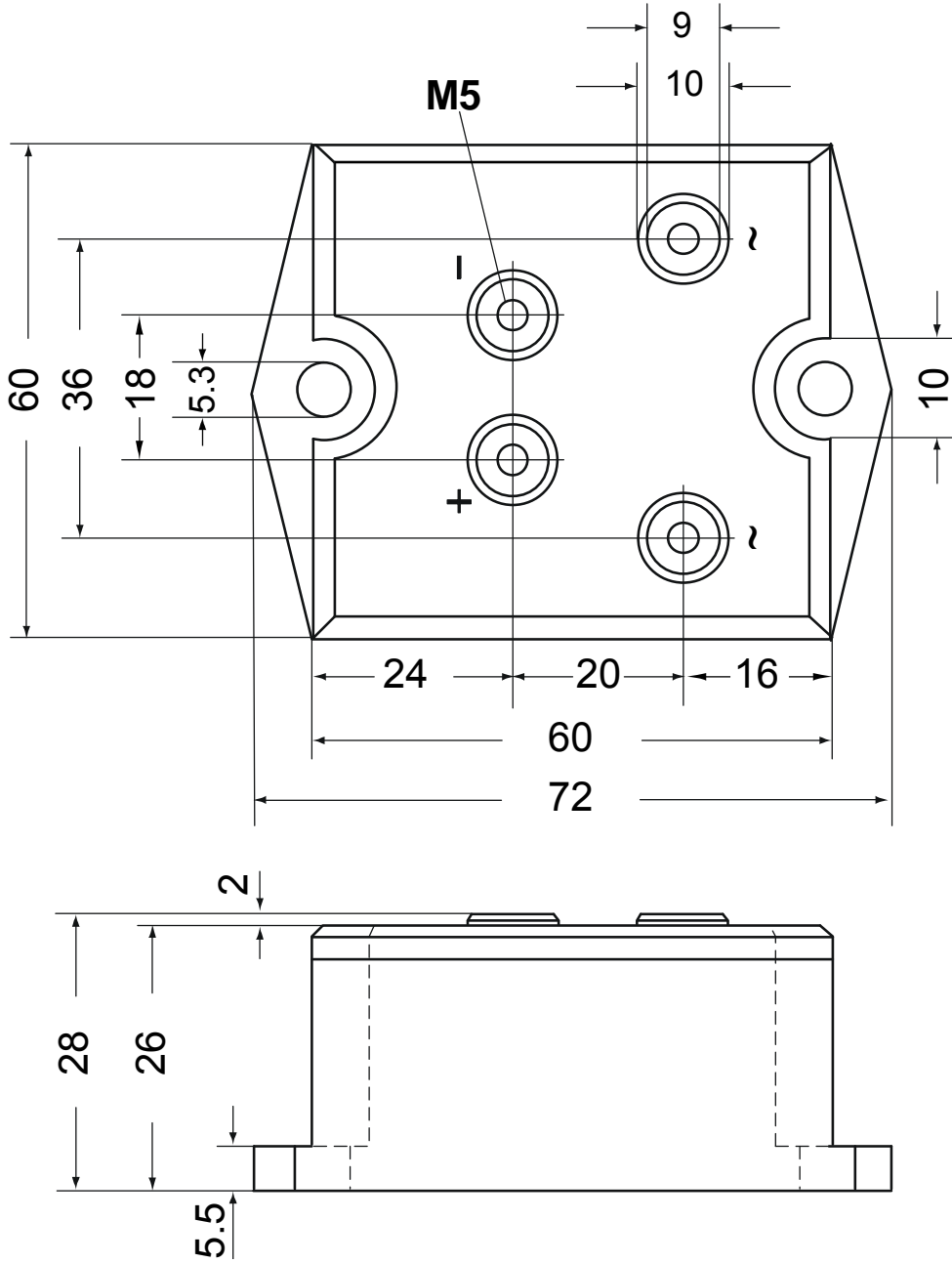


| Ordering | Part Number | Marking on Product | Delivery Mode | Quantity | Code No. |
|----------|-------------|--------------------|---------------|----------|----------|
| Standard | VBO50-08NO7 | VBO50-08NO7 | Box | 10 | 472263 |

Equivalent Circuits for Simulation * on die level $T_{VJ} = 150^\circ\text{C}$

| Symbol | Definition | Value | Unit |
|--------|--------------------|-------|------|
| V_0 | threshold voltage | 0.76 | V |
| R_0 | slope resistance * | 5.7 | mΩ |

Outlines PWS-B



Rectifier

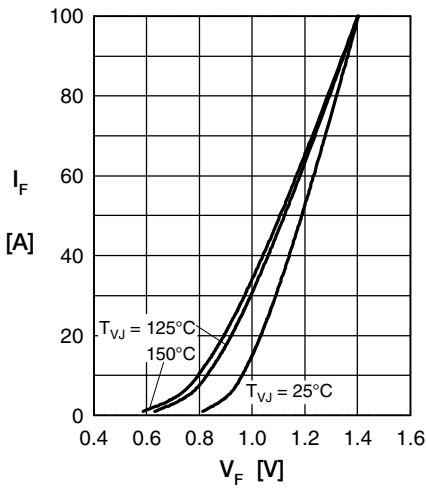


Fig. 1 Forward current vs. voltage drop per diode

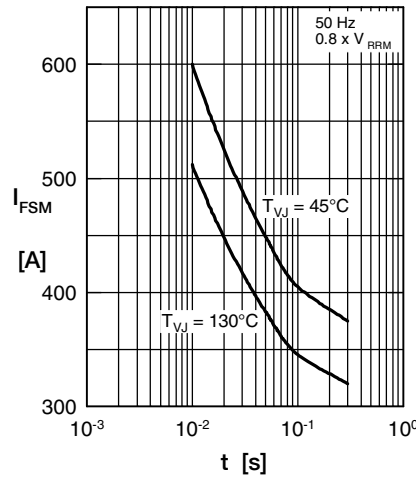


Fig. 2 Surge overload current vs. time per diode

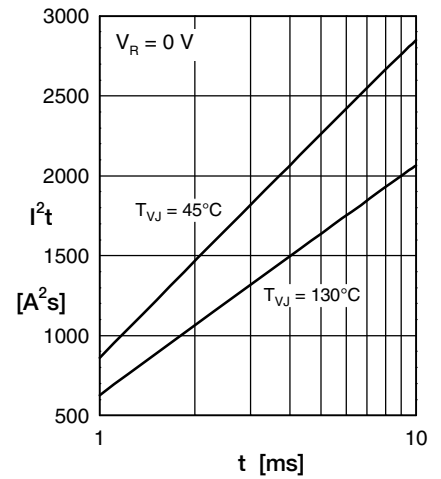


Fig. 3 I^2t vs. time per diode

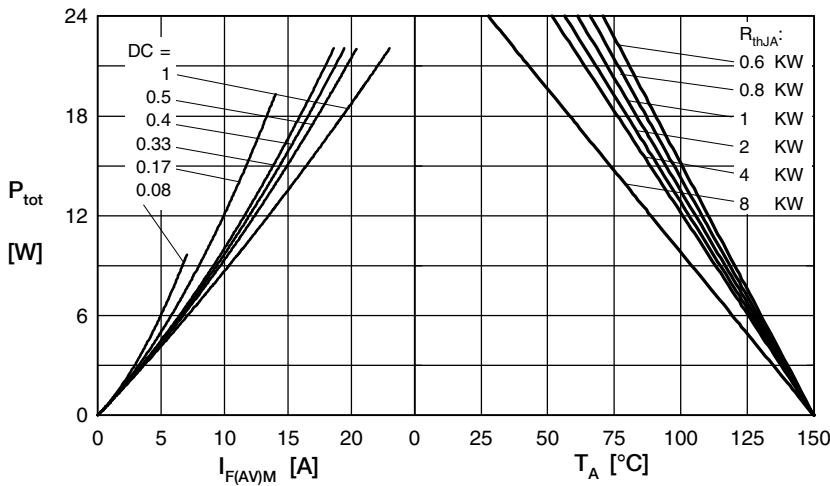


Fig. 4 Power dissipation vs. forward current and ambient temperature per diode

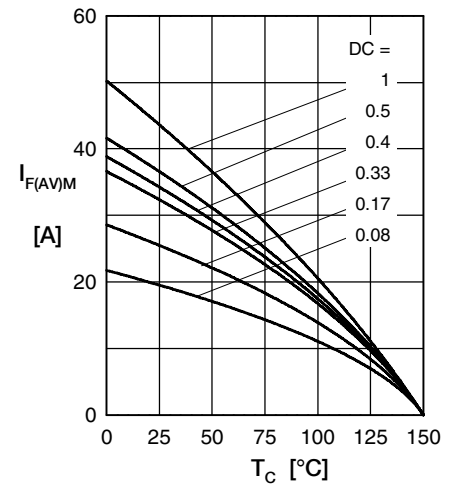


Fig. 5 Max. forward current vs. case temperature per diode

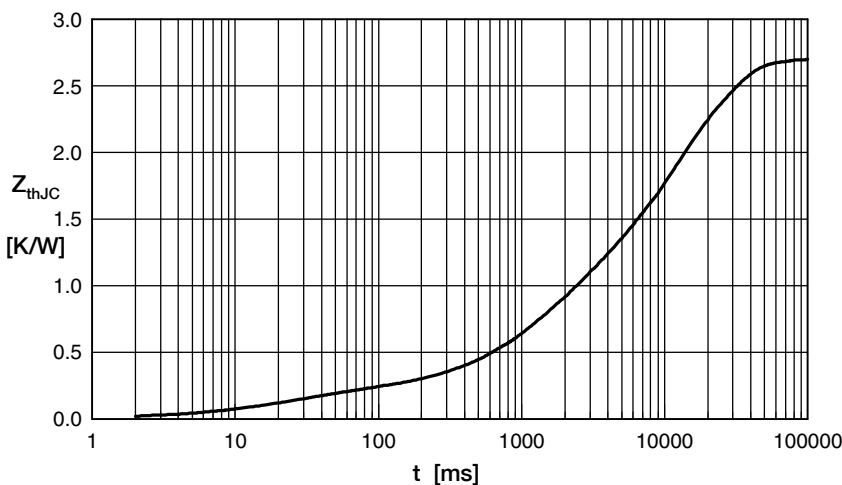


Fig. 6 Transient thermal impedance junction to case vs. time per diode

Constants for Z_{thJC} calculation:

| i | R_{th} (K/W) | t_i (s) |
|---|----------------|-----------|
| 1 | 0.040 | 0.010 |
| 2 | 0.150 | 0.030 |
| 3 | 0.610 | 1.350 |
| 4 | 1.900 | 14.00 |

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Bridge Rectifiers](#) category:

Click to view products by [IXYS](#) manufacturer:

Other Similar products are found below :

[G3SBA60-E351](#) [GBJ1504-BP](#) [GBU10B-BP](#) [GBU15J-BP](#) [GBU15K-BP](#) [GBU4A-BP](#) [GBU4D-BP](#) [GBU6B-E3/45](#) [GSIB680-E3/45](#) [DB101-BP](#) [DBA100G](#) [DBA150G](#) [DBA20G](#) [DBA250G](#) [DBA40G](#) [DBD10G-TM-E](#) [DBF10G](#) [DBF250G](#) [DBG150G](#) [DBG250G](#) [DF10SA-E345](#) [RMB2S](#) [RCG](#) [APT30DF100HJ](#) [APT60DF20HJ](#) [B2S-E3/80](#) [BU1506-E351](#) [BU15085S-E345](#) [BU1508-E3/45](#) [BU1510-E3/45](#) [RS404GL-BP](#) [RS405GL-BP](#) [G3SBA20-E3/51](#) [G5SBA20-E3/51](#) [G5SBA60-E3/51](#) [GBJ1502-BP](#) [GBL02-E351](#) [GBL10-E3/45](#) [GBU10J-BP](#) [GBU4J-BP](#) [GBU4K-BP](#) [GBU8B-E3/45](#) [GBU8D-BP](#) [GBU8J-BP](#) [GSIB1520-E3/45](#) [MB1510](#) [MB352W](#) [MB6M-G](#) [B2M-E345](#) [B40C7000A](#) [B500C7000A](#)