

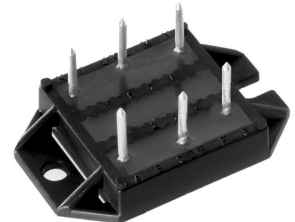
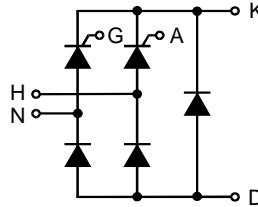
# Single Phase Rectifier Bridge

$$I_{dAV} = 32 \text{ A}$$

$$V_{RRM} = 600-1200 \text{ V}$$

Preliminary data

| $V_{RSM}$<br>$V_{DSM}$<br>V | $V_{RRM}$<br>$V_{DRM}$<br>V | Type         |
|-----------------------------|-----------------------------|--------------|
| 700                         | 600                         | VHF 25-06io7 |
| 900                         | 800                         | VHF 25-08io7 |
| 1300                        | 1200                        | VHF 25-12io7 |



| Symbol              | Test Conditions   | Maximum Ratings                  |                      |
|---------------------|---|----------------------------------|----------------------|
| $I_{dAV}$ ①         | $T_C = 85^\circ\text{C}$ , module   | 32                               | A                    |
| $I_{TAVM}/I_{FAVM}$ | $T_C = 85^\circ\text{C}$ ; (180° sine ; per thyristor)  | 16                               | A                    |
| $I_{TSM}/I_{FSM}$   | $T_{VJ} = 45^\circ\text{C}$ ;<br>$V_R = 0$  | t = 10 ms (50 Hz), sine          | 200 A                |
|                     |   | t = 8.3 ms (60 Hz), sine         | 210 A                |
| $I^2t$              | $T_{VJ} = T_{VJM}$<br>$V_R = 0$   | t = 10 ms (50 Hz), sine          | 180 A                |
|                     |   | t = 8.3 ms (60 Hz), sine         | 190 A                |
| $(di/dt)_{cr}$      | $T_{VJ} = T_{VJM}$<br>f = 50 Hz, $t_p = 200 \mu\text{s}$<br>$V_D = 2/3 V_{DRM}$<br>$I_G = 0.15 \text{ A}$<br>$di_G/dt = 0.15 \text{ A}/\mu\text{s}$ | repetitive, $I_T = 20 \text{ A}$ | 100 A/ $\mu\text{s}$ |
|                     |   | non repetitive, $I_T = I_{TAVM}$ | 500 A/ $\mu\text{s}$ |
| $(dv/dt)_{cr}$      | $T_{VJ} = T_{VJM}$ ;<br>$R_{GK} = \infty$ ; method 1 (linear voltage rise)  | $V_{DR} = 2/3 V_{DRM}$           | 500 V/ $\mu\text{s}$ |
| $V_{RGM}$           |   | 10                               | V                    |
| $P_{GM}$            | $T_{VJ} = T_{VJM}$<br>$I_T = I_{TAVM}$  | $t_p = 30 \mu\text{s}$           | $\leq 5 \text{ W}$   |
|                     |   | $t_p = 300 \mu\text{s}$          | $\leq 2.5 \text{ W}$ |
| $P_{GAVM}$          |   | 0.5                              | W                    |
| $T_{VJ}$            |   | -40...+125                       | °C                   |
| $T_{VJM}$           |   | 125                              | °C                   |
| $T_{stg}$           |   | -40...+125                       | °C                   |
| $V_{ISOL}$          | 50/60 Hz, RMS<br>$I_{ISOL} \leq 1 \text{ mA}$   | t = 1 min                        | 2500 V~              |
|                     |   | t = 1 s                          | 3000 V~              |
| $M_d$               | Mounting torque (M4)  | 1.5 - 2                          | Nm                   |
|                     |   | 14 - 18                          | lb.in.               |
| Weight              | typ.  | 18                               | g                    |

## Features

- Package with DCB ceramic base plate
- Isolation voltage 3000 V~
- Planar passivated chips
- Low forward voltage drop
- Leads suitable for PC board soldering

## Applications

- Supply for DC power equipment
- DC motor control

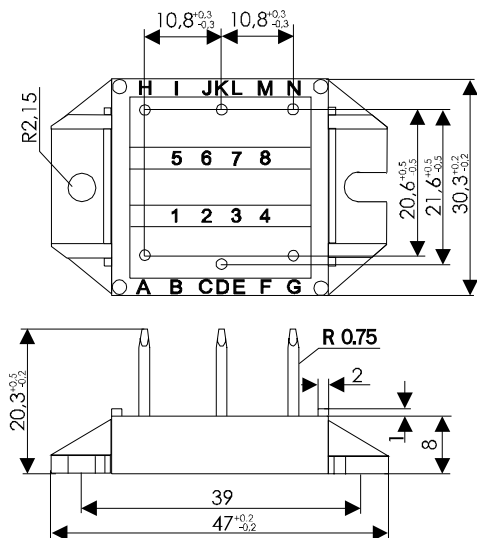
## Advantages

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

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

① for resistive load at bridge output. IXYS reserves the right to change limits, test conditions and dimensions.

| Symbol     | Test Conditions   | Characteristic Values |                     |
|------------|---|-----------------------|---------------------|
| $I_D, I_R$ | $T_{VJ} = T_{VJM}; V_R = V_{RRM}; V_D = V_{DRM}$  | $\leq$                | 5 mA                |
| $V_T$      | $I_T = 20 \text{ A}; T_{VJ} = 25^\circ\text{C}$   | $\leq$                | 1.6 V               |
| $V_{T0}$   | For power-loss calculations only ( $T_{VJ} = 125^\circ\text{C}$ )   |                       | 0.85 V              |
| $r_T$      |   |                       | 27 m $\Omega$       |
| $V_{GT}$   | $V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$  | $\leq$                | 1.5 V               |
|            | $T_{VJ} = -40^\circ\text{C}$  | $\leq$                | 2.5 V               |
| $I_{GT}$   | $V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$  | $\leq$                | 25 mA               |
|            | $T_{VJ} = -40^\circ\text{C}$  | $\leq$                | 50 mA               |
| $V_{GD}$   | $T_{VJ} = T_{VJM}; V_D = 2/3 V_{DRM}$   | $\leq$                | 0.2 V               |
| $I_{GD}$   |   | $\leq$                | 3 mA                |
| $I_L$      | $T_{VJ} = 25^\circ\text{C}; t_p = 10 \mu\text{s}$<br>$I_G = 0.1 \text{ A}; di_G/dt = 0.1 \text{ A}/\mu\text{s}$ | $\leq$                | 75 mA               |
| $I_H$      | $T_{VJ} = 25^\circ\text{C}; V_D = 6 \text{ V}; R_{GK} = \infty$   | $\leq$                | 50 mA               |
| $t_{gd}$   | $T_{VJ} = 25^\circ\text{C}; V_D = 1/2 V_{DRM}$<br>$I_G = 0.1 \text{ A}; di_G/dt = 0.1 \text{ A}/\mu\text{s}$    | $\leq$                | 2 $\mu\text{s}$     |
| $R_{thJC}$ | per thyristor; DC   |                       | 1.3 K/W             |
|            | per module  |                       | 0.22 K/W            |
| $R_{thJK}$ | per thyristor; DC   |                       | 1.8 K/W             |
|            | per module  |                       | 0.3 K/W             |
| $d_s$      | Creeping distance on surface  |                       | 11.2 mm             |
| $d_A$      | Creepage distance in air  |                       | 9.5 mm              |
| $a$        | Max. allowable acceleration   |                       | 50 m/s <sup>2</sup> |

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




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