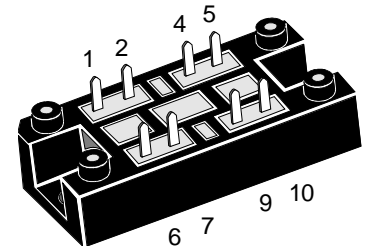
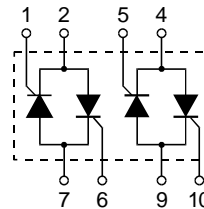


AC Controller Modules

$I_{RMS} = 2x\ 45\ A$
 $V_{RRM} = 800-1600\ V$

| V_{RSM} | V_{RRM} | Type |
|-----------|-----------|--------------|
| V_{DSM} | V_{DRM} | |
| V | V | |
| 800 | 800 | VW2x45-08io1 |
| 1200 | 1200 | VW2x45-12io1 |
| 1400 | 1400 | VW2x45-14io1 |
| 1600 | 1600 | VW2x45-16io1 |



| Symbol | Test Conditions | Maximum Ratings | Features |
|----------------|--|---|---|
| I_{RMS} | $T_C = 85^\circ C$, (per phase) | 45 A | <ul style="list-style-type: none"> • Thyristor controller for AC (circuit W2C acc. to IEC) for mains frequency • Soldering connections for PCB mounting • Isolation voltage 3600 V~ • Planar passivated chips • UL applied |
| I_{TRMS} | $T_{VJ} = T_{VJM}$ | 32 A | |
| I_{TAVM} | $T_C = 85^\circ C$; (180° sine ; per thyristor) | 20 A | |
| I_{TSM} | $T_{VJ} = 45^\circ C$; $V_R = 0$ | t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine | 300 A 320 A |
| | $T_{VJ} = T_{VJM}$; $V_R = 0$ | t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine | 270 A 290 A |
| I^2t | $T_{VJ} = 45^\circ C$; $V_R = 0$ | t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine | 450 A ² s 430 A ² s |
| | $T_{VJ} = T_{VJM}$; $V_R = 0$ | t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine | 360 A ² s 350 A ² s |
| $(di/dt)_{cr}$ | $T_{VJ} = T_{VJM}$; f = 50 Hz, $t_p = 200\ \mu s$ $V_D = 2/3 V_{DRM}$ | repetitive, $I_T = 45\ A$ | 100 A/ μs |
| | $I_G = 0.45\ A$; $di_G/dt = 0.45\ A/\mu s$ | non repetitive, $I_T = I_{TAVM}$ | 500 A/ μs |
| $(dv/dt)_{cr}$ | $T_{VJ} = T_{VJM}$; $R_{GK} = \infty$; method 1 (linear voltage rise) | $V_{DR} = 2/3 V_{DRM}$ | 1000 V/ μs |
| P_{GM} | $T_{VJ} = T_{VJM}$ | $t_p = 30\ \mu s$ | 10 W |
| | $I_T = I_{TAVM}$ | $t_p = 300\ \mu s$ | 5 W |
| P_{GAVM} | | | 0.5 W |
| V_{RGM} | | | 10 V |
| T_{VJ} | | | -40...+125 °C |
| T_{VJM} | | | 125 °C |
| T_{stg} | | | -40...+125 °C |
| V_{ISOL} | 50/60 Hz, RMS | t = 1 min | 3000 V~ |
| | $I_{ISOL} \leq 1\ mA$ | t = 1 s | 3600 V~ |
| M_d | Mounting torque (M5) | | 2-2.5/18-22 Nm/lb.in. |
| Weight | typ. | | 35 g |

Features

- Thyristor controller for AC (circuit W2C acc. to IEC) for mains frequency
- Soldering connections for PCB mounting
- Isolation voltage 3600 V~
- Planar passivated chips
- UL applied

Applications

- Switching and control of three phase AC circuits
- Softstart AC motor controller
- Solid state switches
- Light and temperature control

Advantages

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

Data according to IEC 60747 refer to a single thyristor/diode unless otherwise stated. IXYS reserves the right to change limits, test conditions and dimensions

| Symbol | Test Conditions | Characteristic Values |
|------------|--|------------------------|
| I_D, I_R | $T_{VJ} = T_{VJM}; V_R = V_{RRM}; V_D = V_{DRM}$ | ≤ 5 mA |
| V_T | $I_T = 45$ A; $T_{VJ} = 25^\circ\text{C}$ | ≤ 1.52 V |
| V_{T0} | For power-loss calculations only | 0.85 V |
| r_T | | 15 m Ω |
| V_{GT} | $V_D = 6$ V; $T_{VJ} = 25^\circ\text{C}$ | ≤ 1.5 V |
| | $T_{VJ} = -40^\circ\text{C}$ | ≤ 1.6 V |
| I_{GT} | $V_D = 6$ V; $T_{VJ} = 25^\circ\text{C}$ | ≤ 100 mA |
| | $T_{VJ} = -40^\circ\text{C}$ | ≤ 200 mA |
| V_{GD} | $T_{VJ} = T_{VJM}; V_D = 2/3 V_{DRM}$ | ≤ 0.2 V |
| I_{GD} | | ≤ 5 mA |
| I_L | $T_{VJ} = 25^\circ\text{C}; t_p = 10$ μs $I_G = 0.45$ A; $di_G/dt = 0.45$ A/ μs | ≤ 450 mA |
| I_H | $T_{VJ} = 25^\circ\text{C}; V_D = 6$ V; $R_{GK} = \infty$ | ≤ 200 mA |
| t_{gd} | $T_{VJ} = 25^\circ\text{C}; V_D = 1/2 V_{DRM}$ $I_G = 0.45$ A; $di_G/dt = 0.45$ A/ μs | ≤ 2 μs |
| t_q | $T_{VJ} = T_{VJM}; I_T = 20$ A, $t_p = 200$ μs ; $di/dt = -10$ A/ μs $V_R = 100$ V; $dv/dt = 15$ V/ μs ; $V_D = 2/3 V_{DRM}$ | typ. 150 μs |
| R_{thJC} | per thyristor; DC | 1.25 K/W |
| | per module | 0.31 K/W |
| R_{thJK} | per thyristor; DC | 1.55 K/W |
| | per module | 0.39 K/W |
| d_s | Creeping distance on surface | 12.7 mm |
| d_A | Creepage distance in air | 9.4 mm |
| a | Max. allowable acceleration | 50 m/s ² |

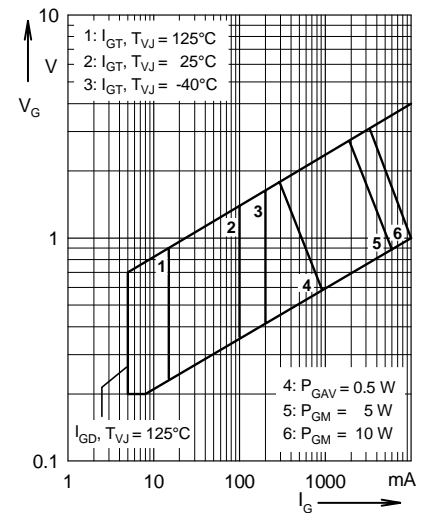


Fig. 1 Gate trigger characteristics

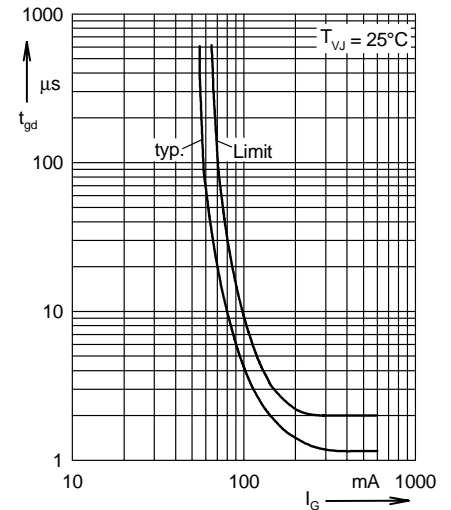


Fig. 2 Gate trigger delay time

Dimensions in mm (1 mm = 0.0394")

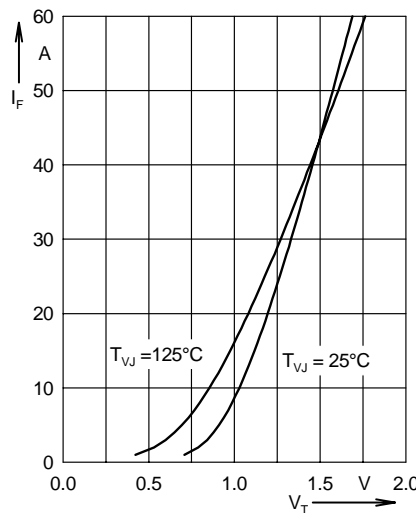
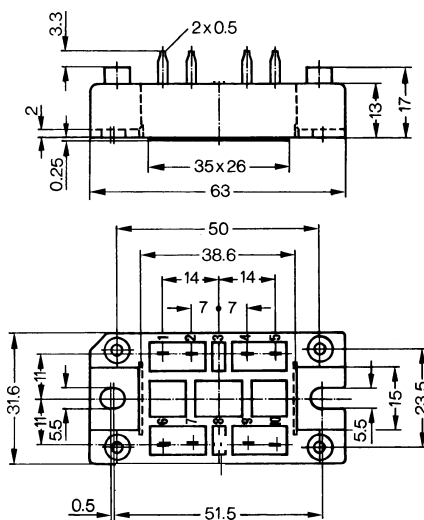


Fig. 3 Forward current versus voltage drop per leg

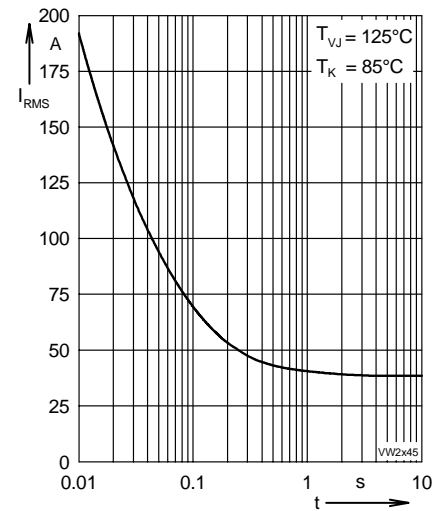


Fig. 4 Rated RMS current versus time (360° conduction)

