

AC Controller Modules

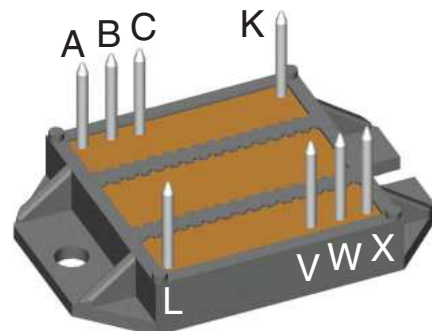
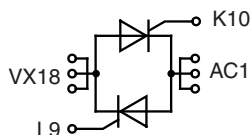
ECO-PAC 2

$$I_{RMS} = 230 \text{ A}$$

$$I_{TAVM} = 105 \text{ A}$$

$$V_{RRM} = 1200/1600 \text{ V}$$

| V_{RSM} | V_{RRM} | Typ |
|-----------|-----------|---------------|
| V_{DSM} | V_{DRM} | |
| V | V | |
| 1300 | 1200 | MMO 230-12io7 |
| 1700 | 1600 | MMO 230-16io7 |



Preliminary Data

| Symbol | Conditions | Maximum Ratings | |
|----------------|--|-----------------|------------------|
| I_{RMS} | $T_C = 85^\circ\text{C}$; 50-400 Hz (per single controller) | 230 | A |
| I_{TRMS} | | 180 | A |
| I_{TAVM} | $T_C = 85^\circ\text{C}$; 180° sine | 105 | A |
| I_{TSM} | $T_{VJ} = 45^\circ\text{C}$; $t = 10 \text{ ms}$ (50 Hz) | 2250 | A |
| | $V_R = 0$; $t = 8.3 \text{ ms}$ (60 Hz) | 2400 | A |
| I^2t | $T_{VJ} = 125^\circ\text{C}$; $t = 10 \text{ ms}$ (50 Hz) | 2000 | A |
| | $V_R = 0$; $t = 8.3 \text{ ms}$ (60 Hz) | 2150 | A |
| $(di/dt)_{cr}$ | $T_{VJ} = 45^\circ\text{C}$; $t = 10 \text{ ms}$ (50 Hz) | 25 300 | A ² s |
| | $V_R = 0$; $t = 8.3 \text{ ms}$ (60 Hz) | 23 900 | A ² s |
| $(di/dt)_{cr}$ | $T_{VJ} = 125^\circ\text{C}$; $t = 10 \text{ ms}$ (50 Hz) | 20 000 | A ² s |
| | $V_R = 0$; $t = 8.3 \text{ ms}$ (60 Hz) | 19 100 | A ² s |
| $(di/dt)_{cr}$ | $T_{VJ} = 125^\circ\text{C}$; $f = 50 \text{ Hz}$; $t_p = 200 \mu\text{s}$; repetitive, $I_T = 250 \text{ A}$ | 150 | A/ μs |
| | $V_D = \frac{2}{3} V_{DRM}$; $I_G = 0.45 \text{ A}$; $di_G/dt = 0.45 \text{ A}/\mu\text{s}$; non repetitive, $I_T = I_{TAVM}$ | 500 | A/ μs |
| $(dv/dt)_{cr}$ | $T_{VJ} = 125^\circ\text{C}$; $V_D = \frac{2}{3} V_{DRM}$; $R_{GK} = \infty$; method 1 (linear voltage rise) | 1000 | V/ μs |
| P_{GM} | $T_{VJ} = 125^\circ\text{C}$; $t_p = 30 \text{ ms}$ | ≤ 10 | W |
| | $I_T = I_{T(AV)M}$; $t_p = 300 \text{ ms}$ | ≤ 5 | W |
| P_{GAVM} | | 0.5 | W |
| V_{RGM} | | 10 | V |
| T_{VJ} | | -40...+125 | °C |
| T_{VJM} | for 10 sec. | 125 | °C |
| T_{stg} | | -40...+125 | °C |
| V_{ISOL} | 50/60 Hz, RMS; $t = 1 \text{ min}$ | 3000 | V~ |
| | $I_{ISOL} \leq 1 \text{ mA}$; $t = 1 \text{ s}$ | 3600 | V~ |
| M_d | Mounting torque (M4) | 1.5 - 2.0 | Nm |
| | | 14 - 18 | lb.in. |
| Weight | Typical including screws | 26 | g |

Features

- Thyristor controller for AC (circuit W1C acc. to IEC) for mains frequency
- Isolation voltage 3000 V~
- Planar glass passivated chips
- Low forward voltage drop
- Leads suitable for PC board soldering

Applications

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

Advantages

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

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

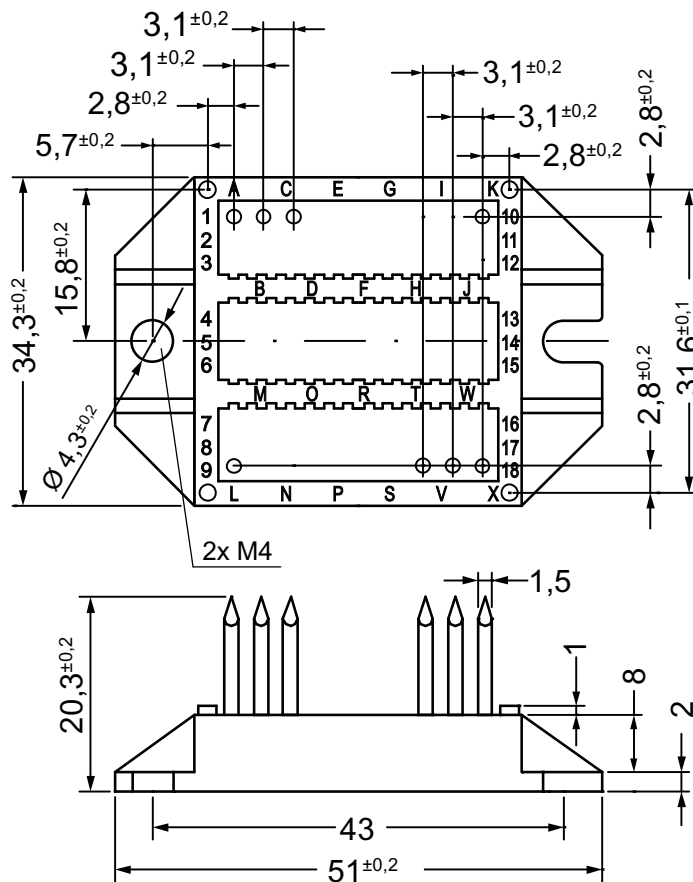
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IXYS reserves the right to change limits, test conditions and dimensions.

20200120c

| Symbol | Conditions | Characteristic Values | |
|------------|---|------------------------------|---------------------|
| | | typ. | max. |
| I_D, I_R | $V_R / V_D = V_{RRM} / V_{DRM}$ | $T_{VJ} = 125^\circ\text{C}$ | 5 mA |
| V_T | $I_T = 300\text{ A}$ | $T_{VJ} = 25^\circ\text{C}$ | 1.5 V |
| V_{T0} | For power-loss calculations only | | 0.8 V |
| r_t | | | 2.4 mΩ |
| V_{GT} | $V_D = 6\text{ V}$ | $T_{VJ} = 25^\circ\text{C}$ | 1.5 V |
| | | $T_{VJ} = -40^\circ\text{C}$ | 1.6 V |
| I_{GT} | $V_D = 6\text{ V}$ | $T_{VJ} = 25^\circ\text{C}$ | 150 mA |
| | | $T_{VJ} = -40^\circ\text{C}$ | 200 mA |
| V_{GD} | $V_D = \frac{2}{3} V_{DRM}$ | $T_{VJ} = 125^\circ\text{C}$ | 0.2 V |
| I_{GD} | | | 10 mA |
| I_L | $t_p = 10\ \mu\text{s};$ $I_G = 0.45\text{ A}; di_G/dt = 0.45\text{ A}/\mu\text{s}$ | $T_{VJ} = 25^\circ\text{C}$ | 450 mA |
| I_H | $V_D = 6\text{ V}; R_{GK} = \infty;$ | $T_{VJ} = 25^\circ\text{C}$ | 200 mA |
| t_{gd} | $V_D = \frac{1}{2} V_{DRM}$ $I_G = 0.45\text{ A}; di_G/dt = 0.45\text{ A}/\mu\text{s}$ | $T_{VJ} = 25^\circ\text{C}$ | 2 μs |
| R_{thJC} | per thyristor; DC current | | 0.26 K/W |
| R_{thCH} | | 0.20 | K/W |
| R_{thJC} | per module | | 0.13 K/W |
| R_{thCH} | | 0.10 | K/W |
| d_s | Creeping distance on surface | | 11.2 mm |
| d_A | Creepage distance in air | | 17.0 mm |
| a | Maximum allowable acceleration | | 50 m/s ² |



Dimensions in mm (1 mm = 0.0394")