

AC Controller Modules

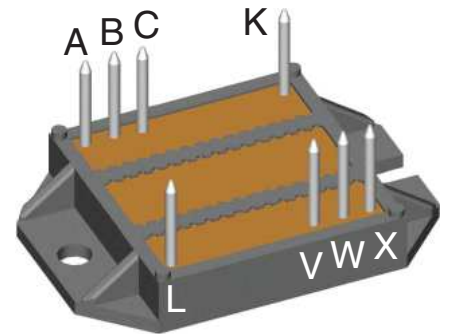
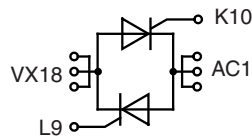
ECO-PAC 2

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

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

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

V_{RSM}	V_{RRM}	Typ
V_{DSM} V	V_{DRM} 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	
	$T_{VJ} = 125^\circ\text{C}$; $t = 10 \text{ ms}$ (50 Hz)	20 000	A ² s	
$(dv/dt)_{cr}$	$V_R = 0$; $t = 8.3 \text{ ms}$ (60 Hz)	19 100	A ² s	
	$T_{VJ} = 125^\circ\text{C}$; $f = 50 \text{ Hz}$; $t_p = 200 \mu\text{s}$; $V_D = 2/3 V_{DRM}$; $I_G = 0.45 \text{ A}$; $di_G/dt = 0.45 \text{ A}/\mu\text{s}$	repetitive, $I_T = 250 \text{ A}$	150	A/ μs
$(dv/dt)_{cr}$	$T_{VJ} = 125^\circ\text{C}$; $V_D = 2/3 V_{DRM}$; $R_{GK} = \infty$; method 1 (linear voltage rise)	non repetitive, $I_T = I_{TAVM}$	500	A/ μs
	$T_{VJ} = 125^\circ\text{C}$; $I_T = I_{T(AV)M}$	$t_p = 30 \text{ ms}$	≤ 10	W
P_{GM}		$t_p = 300 \text{ ms}$	≤ 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.

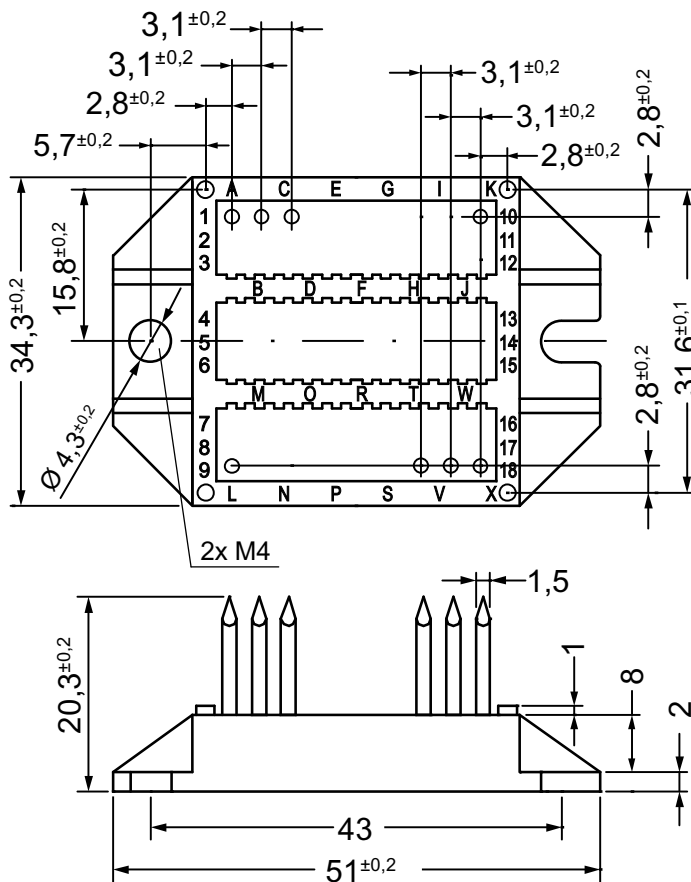
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IXYS reserves the right to change limits, test conditions and dimensions.

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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
I_{GT}	$V_D = 6\text{ V}$ $T_{VJ} = -40^\circ\text{C}$ $T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = -40^\circ\text{C}$		1.6 V 150 mA 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")