

AC Controller Modules

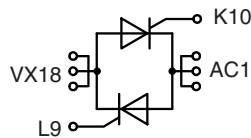
ECO-PAC 2

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

$$V_{RRM} = 800 - 1800 \text{ V}$$

Preliminary Data

V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V	Type
900	800	MMO230-08io7
1300	1200	MMO230-12io7
1500	1400	MMO230-14io7
1700	1600	MMO230-16io7
1900	1800	MMO230-18io7



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}	$T_{VJ} = 45^\circ\text{C}$; $V_R = 0 \text{ V}$; $t = 10 \text{ ms}$ (50 Hz), sine	2250	A
	$t = 8.3 \text{ ms}$ (60 Hz), sine	2400	A
	$T_{VJ} = 125^\circ\text{C}$; $V_R = 0 \text{ V}$; $t = 10 \text{ ms}$ (50 Hz), sine	2000	A
	$t = 8.3 \text{ ms}$ (60 Hz), sine	2150	A
I^2dt	$T_{VJ} = 45^\circ\text{C}$; $V_R = 0 \text{ V}$; $t = 10 \text{ ms}$ (50 Hz), sine	25300	A^2s
	$t = 8.3 \text{ ms}$ (60 Hz), sine	23900	A^2s
$(di/dt)_{cr}$	$T_{VJ} = 125^\circ\text{C}$; $f = 50 \text{ Hz}$; $t_p = 200 \mu\text{s}$; $V_D = \frac{2}{3}V_{DRM}$; $I_G = 0.45 \text{ A}$; $di_G/dt = 0.45 \text{ A}/\mu\text{s}$; repetitive, $I_T = 250 \text{ A}$	150	$\text{A}/\mu\text{s}$
	non repetitive, $I_T = I_{TAVM}$	500	$\text{A}/\mu\text{s}$
$(dv/dt)_{cr}$	$T_{VJ} = 125^\circ\text{C}$; $V_{DR} = \frac{2}{3}V_{DRM}$; $R_{GK} = \infty$, method 1 (linear voltage rise)	1000	$\text{V}/\mu\text{s}$
P_{GM}	$T_{VJ} = 125^\circ\text{C}$; $t_p = 30 \text{ ms}$	≤ 10	W
	$I_T = I_{TAVM}$; $t_p = 300 \text{ ms}$	≤ 5	W
P_{GAVM}		0.5	W
V_{RGM}		10	V
T_{VJ}		-40 ... + 125	$^\circ\text{C}$
T_{VJM}		125	$^\circ\text{C}$
T_{stg}		-40 ... + 125	$^\circ\text{C}$
V_{ISOL}	50/60 Hz, RMS; $I_{ISOL} \leq 1 \text{ mA}$; $t = 1 \text{ min}$	3000	V ~
	$t = 1 \text{ s}$	3600	V ~
M_d	Mounting torque (M4)	1.5 - 2.0	Nm
		14 - 18	lb.in.
Weight	typ.	26	g

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

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

20080806a

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

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
I_D, I_R	$T_{VJ} = 125^{\circ}\text{C}; V_R = V_{RRM}; V_D = V_{DRM}$			5 mA
V_T	$I_T = 300 \text{ A}; T_{VJ} = 25^{\circ}\text{C}$			1.5 V
V_{TO} r_T	For power-loss calculations only			0.8 V 2.4 mΩ
V_{GT}	$V_D = 6 \text{ V};$ $T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = -40^{\circ}\text{C}$			1.5 V 1.6 V
I_{GT}	$V_D = 6 \text{ V};$ $T_{VJ} = 25^{\circ}\text{C}$ $T_{VJ} = -40^{\circ}\text{C}$			150 mA 200 mA
V_{GD} I_{GD}	$T_{VJ} = 125^{\circ}\text{C}; V_D = \frac{2}{3}V_{DRM}$ $T_{VJ} = 125^{\circ}\text{C}; V_D = \frac{2}{3}V_{DRM}$			0.2 V 10 mA
I_L	$T_{VJ} = 25^{\circ}\text{C}; t_p = 10 \text{ ms}$ $I_G = 0.45 \text{ A}; di_G/dt = 0.45 \text{ A}/\mu\text{s}$			450 mA
I_H	$T_{VJ} = 25^{\circ}\text{C}; V_D = 6 \text{ V}; R_{GK} = \infty$			200 mA
t_{gd}	$T_{VJ} = 25^{\circ}\text{C}; V_D = \frac{1}{2} V_{DRM}$ $I_G = 0.45 \text{ A}; di_G/dt = 0.45 \text{ A}/\mu\text{s}$			2 μs
R_{thJC} R_{thCH}	per Thyristor; DC per module per Thyristor; DC per module		0,2 0,1	0.26 K/W 0.13 K/W K/W K/W
d_s d_A a	Creeping distance on surface Creeping distance in air Max. allowable acceleration			11.2 mm 5.0 mm 50 m/s ²

2 - 2