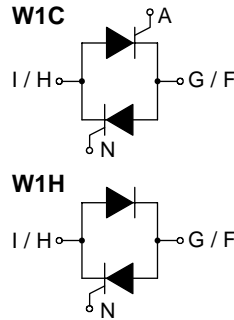


# AC Controller Modules

**$I_{RMS} = 112 A$**   
 **$V_{RRM} = 800-1400 V$**

## Preliminary Data

$V_{RSM}$ $V_{DSM}$ V	$V_{RRM}$ $V_{DRM}$ V	Type	
800	800	MMO 110-08io7	MLO 110-08io7
1200	1200	MMO 110-12io7	MLO 110-12io7
1400	1400	MMO 110-14io7	MLO 110-14io7



Symbol	Conditions	Maximum Ratings	
$I_{RMS}$	$T_C = 85^\circ C$ , 50 - 400 Hz, module	112	A
$I_{TRMS}$		81	A
$I_{TAVM}$	$T_C = 85^\circ C$ ; (180° sine)	51	A
$I_{TSM}$	$T_{VJ} = 45^\circ C$ $V_R = 0$	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	1000 A 1070 A
	$T_{VJ} = 125^\circ C$ $V_R = 0$	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	870 A 930 A
$I^2t$	$T_{VJ} = 45^\circ C$ $V_R = 0$	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	5000 A <sup>2</sup> s 4810 A <sup>2</sup> s
	$T_{VJ} = 125^\circ C$ $V_R = 0$	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	3780 A <sup>2</sup> s 3630 A <sup>2</sup> s
$(di/dt)_{cr}$	$T_{VJ} = 125^\circ C$ f = 50 Hz, $t_p = 200 \mu s$ $V_D = \frac{2}{3} V_{DRM}$ $I_G = 0.45 A$ $di_G/dt = 0.45 A/\mu s$	repetitive, $I_T = 50 A$	100 A/ $\mu s$
		non repetitive, $I_T = I_{TAVM}$	500 A/ $\mu s$
$(dv/dt)_{cr}$	$T_{VJ} = 125^\circ C$ ; $V_{DR} = \frac{2}{3} V_{DRM}$ $R_{GK} = \infty$ ; method 1 (linear voltage rise)		1000 V/ $\mu s$
$P_{GM}$	$T_{VJ} = 125^\circ C$ $I_T = I_{TAVM}$	$t_p = 30 \mu s$ $t_p = 300 \mu s$	10 W 5 W
			0.5 W
$P_{GAVM}$			10 W
$V_{RGM}$			10 V
$T_{VJ}$			-40...+150 °C
$T_{VJM}$			150 °C
$T_{stg}$			-40...+125 °C
$V_{ISOL}$	50/60 Hz, RMS $I_{ISOL} \leq 1 mA$	t = 1 min t = 1 s	2500 V~ 3000 V~
$M_d$	Mounting torque (M4)		1.5...2.0/14...18 Nm/lb.in.
Weight	typ.		18 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
- Lead suitable for PC board solering

## 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 to a single thyristor/diode unless otherwise stated. IXYS reserves the right to change limits, test conditions and dimensions.

Symbol	Conditions	Characteristic Values	
$I_D, I_R$	$T_{VJ} = 125^\circ\text{C}; V_R = V_{RRM}; V_D = V_{DRM}$	$\leq$	5 mA
$V_T$	$I_T = 150 \text{ A}; T_{VJ} = 25^\circ\text{C}$	$\leq$	1.57 V
$V_{T0}$	For power-loss calculations only		0.85 V
$r_T$			5.6 m $\Omega$
$V_{GT}$	$V_D = 6 \text{ V}$	$T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = -40^\circ\text{C}$	$\leq$ 1.5 V $\leq$ 1.9 V
$I_{GT}$	$V_D = 6 \text{ V}$	$T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = -40^\circ\text{C}$	$\leq$ 100 mA $\leq$ 200 mA
$V_{GD}$	$T_{VJ} = 125^\circ\text{C}; V_D = \frac{2}{3} V_{DRM}$	$\leq$	0.2 V
$I_{GD}$		$\leq$	1 mA
$I_L$	$T_{VJ} = 25^\circ\text{C}; t_p = 10 \mu\text{s}$ $I_G = 0.45 \text{ A}; di_G/dt = 0.45 \text{ A}/\mu\text{s}$	$\leq$	200 mA
$I_H$	$T_{VJ} = 25^\circ\text{C}; V_D = 6 \text{ V}; R_{GK} = \infty$	$\leq$	100 mA
$t_{gd}$	$T_{VJ} = 25^\circ\text{C}; V_D = \frac{1}{2} V_{DRM}$ $I_G = 0.45 \text{ A}; di_G/dt = 0.45 \text{ A}/\mu\text{s}$	$\leq$	2 $\mu\text{s}$
$R_{thJC}$	per thyristor; DC per module		0.8 K/W 0.4 K/W
$R_{thCH}$	per thyristor; sine 180° el per module	typ. typ.	0.12 K/W 0.06 K/W
$d_s$	Creeping distance on surface		11.2 mm
$d_A$	Creepage distance in air		17.0 mm
$a$	Max. allowable acceleration		50 m/s <sup>2</sup>

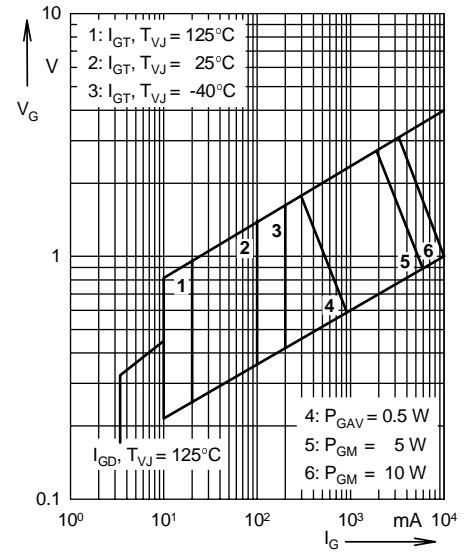


Fig. 1 Gate trigger characteristics

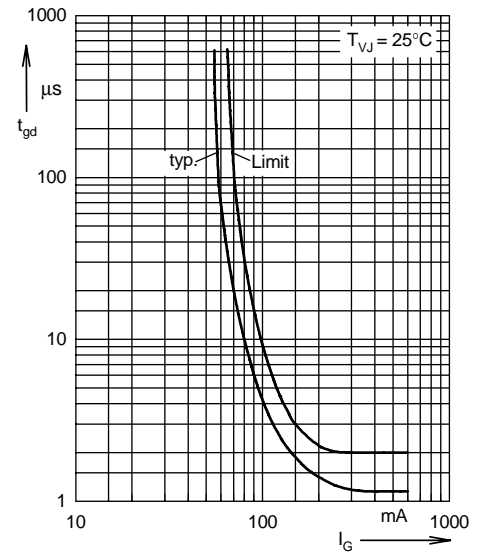


Fig. 2 Gate trigger delay time

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