

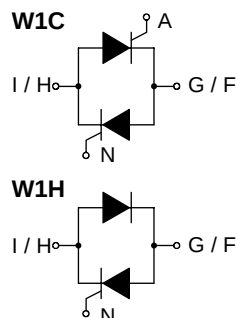
AC Controller Modules

$$I_{RMS} = 140 \text{ A}$$

$$V_{RRM} = 800-1600 \text{ V}$$

Preliminary Data

V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V	Type	
800	800	MMO 140-08io7	MLO 140-08io7
1200	1200	MMO 140-12io7	MLO 140-12io7
1600	1600	MMO 140-16io7	MLO 140-16io7



Symbol	Conditions	Maximum Ratings	
I_{RMS}	$T_C = 85^\circ\text{C}$, 50 - 400 Hz, (per single controller)	130	A
I_{TRMS}		90	A
I_{TAVM}	$T_C = 85^\circ\text{C}$; 180° sine, per Thyristor	58	A
I_{TSM}	$T_{VJ} = 45^\circ\text{C}$ $V_R = 0$	$t = 10 \text{ ms}$ (50 Hz), sine	1150 A
		$t = 8.3 \text{ ms}$ (60 Hz), sine	1230 A
	$T_{VJ} = 125^\circ\text{C}$ $V_R = 0$	$t = 10 \text{ ms}$ (50 Hz), sine	1000 A
		$t = 8.3 \text{ ms}$ (60 Hz), sine	1070 A
I^2t	$T_{VJ} = 45^\circ\text{C}$ $V_R = 0$	$t = 10 \text{ ms}$ (50 Hz), sine	6600 A ² s
		$t = 8.3 \text{ ms}$ (60 Hz), sine	6280 A ² s
	$T_{VJ} = 125^\circ\text{C}$ $V_R = 0$	$t = 10 \text{ ms}$ (50 Hz), sine	5000 A ² s
		$t = 8.3 \text{ ms}$ (60 Hz), sine	4750 A ² s
$(di/dt)_{cr}$	$T_{VJ} = 125^\circ\text{C}$ $f = 50 \text{ Hz}$, $t_p = 200 \mu\text{s}$	repetitive, $I_T = 60 \text{ A}$	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
$(dv/dt)_{cr}$	$T_{VJ} = 125^\circ\text{C}$; $V_{DR} = \frac{2}{3} V_{DRM}$ $R_{GK} = \infty$; method 1 (linear voltage rise)		1000 V/ μs
P_{GM}	$T_{VJ} = 125^\circ\text{C}$ $I_T = I_{TAVM}$	$t_p = 30 \mu\text{s}$	10 W
		$t_p = 300 \mu\text{s}$	5 W
P_{GAVM}			0.5 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 $I_{ISOL} \leq 1 \text{ mA}$	$t = 1 \text{ min}$	2500 V~
		$t = 1 \text{ s}$	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	$T_{VJ} = 125^\circ\text{C}; V_R = V_{RRM}; V_D = V_{DRM}$	≤ 5 mA
V_T	$I_T = 200$ A; $T_{VJ} = 25^\circ\text{C}$	≤ 1.75 V
V_{T0}	For power-loss calculations only	0.85 V
r_T		5.2 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}	$T_{VJ} = 125^\circ\text{C}; V_D = \frac{2}{3} V_{DRM}$	≤ 0.2 V
I_{GD}		≤ 10 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}	$T_{VJ} = 25^\circ\text{C}; V_D = \frac{1}{2} V_{DRM}$ $I_G = 0.45$ A; $di_G/dt = 0.45$ A/ μs	≤ 2 μs
R_{thJC}	per thyristor; DC	0.7 K/W
	per module	0.35 K/W
R_{thCH}	per thyristor; sine 180° el	typ. 0.12 K/W
	per module	typ. 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 ²

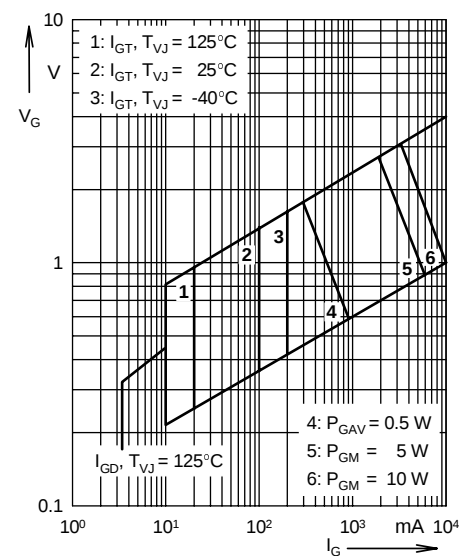


Fig. 1 Gate trigger characteristics

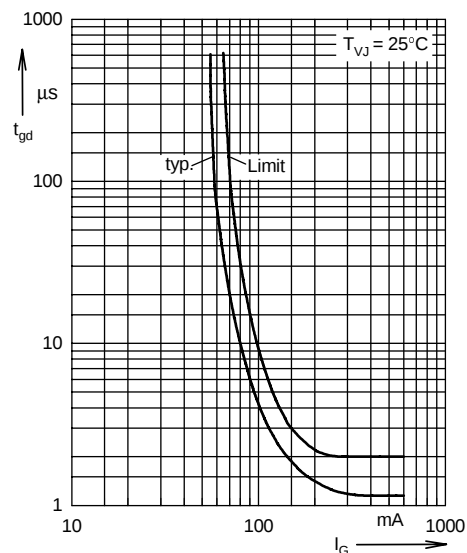


Fig. 2 Gate trigger delay time

Dimensions in mm (1 mm = 0.0394")

