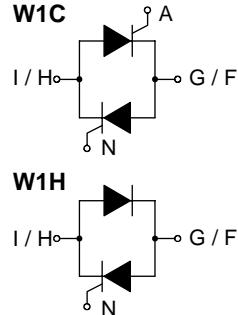


## AC Controller Modules

**I<sub>RMS</sub> = 140 A**  
**V<sub>RRM</sub> = 800-1600 V**

## Preliminary Data

V <sub>RSM</sub> V <sub>DSM</sub> V	V <sub>RRM</sub> V <sub>DRM</sub> V	Type
800	800	MMO 140-08io7
1200	1200	MMO 140-12io7
1600	1600	MMO 140-16io7
		MLO 140-08io7
		MLO 140-12io7
		MLO 140-16io7



Symbol	Conditions	Maximum Ratings		
I <sub>RMS</sub>	T <sub>C</sub> = 85°C, 50 - 400 Hz, (per single controller)	130	A	
I <sub>TRMS</sub>		90	A	
I <sub>TAVM</sub>	T <sub>C</sub> = 85°C; 180° sine, per Thyristor	58	A	
I <sub>TSM</sub>	T <sub>VJ</sub> = 45°C V <sub>R</sub> = 0	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	1150 1230	A A
	T <sub>VJ</sub> = 125°C V <sub>R</sub> = 0	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	1000 1070	A A
I <sup>2</sup> t	T <sub>VJ</sub> = 45°C V <sub>R</sub> = 0	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	6600 6280	A <sup>2</sup> s A <sup>2</sup> s
	T <sub>VJ</sub> = 125°C V <sub>R</sub> = 0	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	5000 4750	A <sup>2</sup> s A <sup>2</sup> s
(di/dt) <sub>cr</sub>	T <sub>VJ</sub> = 125°C f = 50 Hz, t <sub>p</sub> = 200 µs V <sub>D</sub> = $\frac{2}{3}$ V <sub>DRM</sub> I <sub>G</sub> = 0.45 A di <sub>G</sub> /dt = 0.45 A/µs	repetitive, I <sub>T</sub> = 60 A	150	A/µs
			500	A/µs
(dv/dt) <sub>cr</sub>	T <sub>VJ</sub> = 125°C; V <sub>DR</sub> = $\frac{2}{3}$ V <sub>DRM</sub> R <sub>GK</sub> = $\infty$ ; method 1 (linear voltage rise)		1000	V/µs
P <sub>GM</sub>	T <sub>VJ</sub> = 125°C I <sub>T</sub> = I <sub>TAVM</sub>	t <sub>p</sub> = 30 µs t <sub>p</sub> = 300 µs	10 5	W W
P <sub>GAVM</sub>			0.5	W
V <sub>RGM</sub>			10	V
T <sub>VJ</sub>			-40...+150	°C
T <sub>VJM</sub>			150	°C
T <sub>stg</sub>			-40...+125	°C
V <sub>ISOL</sub>	50/60 Hz, RMS I <sub>ISOL</sub> ≤ 1 mA	t = 1 min t = 1 s	2500 3000	V~ V~
M <sub>d</sub>	Mounting torque (M4)		1.5...2.0/14...18	Nm/lb.in.
Weight	typ.		18	g

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			
$I_D, I_R$	$T_{VJ} = 125^\circ C; V_R = V_{RRM}; V_D = V_{DRM}$	$\leq$	5	mA	
$V_T$	$I_T = 200 A; T_{VJ} = 25^\circ C$	$\leq$	1.75	V	
$V_{TO}$	For power-loss calculations only	0.85		V	
$r_T$		5.2		$m\Omega$	
$V_{GT}$	$V_D = 6 V$	$T_{VJ} = 25^\circ C$	$\leq$	1.5	V
		$T_{VJ} = -40^\circ C$	$\leq$	1.6	V
$I_{GT}$	$V_D = 6 V$	$T_{VJ} = 25^\circ C$	$\leq$	100	mA
		$T_{VJ} = -40^\circ C$	$\leq$	200	mA
$V_{GD}$	$T_{VJ} = 125^\circ C; V_D = \frac{2}{3} V_{DRM}$	$\leq$	0.2	V	
$I_{GD}$		$\leq$	10	mA	
$I_L$	$T_{VJ} = 25^\circ C; t_p = 10 \mu s$	$\leq$	450	mA	
	$I_G = 0.45 A; di_G/dt = 0.45 A/\mu s$				
$I_H$	$T_{VJ} = 25^\circ C; V_D = 6 V; R_{GK} = \infty$	$\leq$	200	mA	
$t_{gd}$	$T_{VJ} = 25^\circ C; V_D = \frac{1}{2} V_{DRM}$	$\leq$	2	$\mu s$	
	$I_G = 0.45 A; di_G/dt = 0.45 A/\mu s$				
$R_{thJC}$	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		$m/s^2$	

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

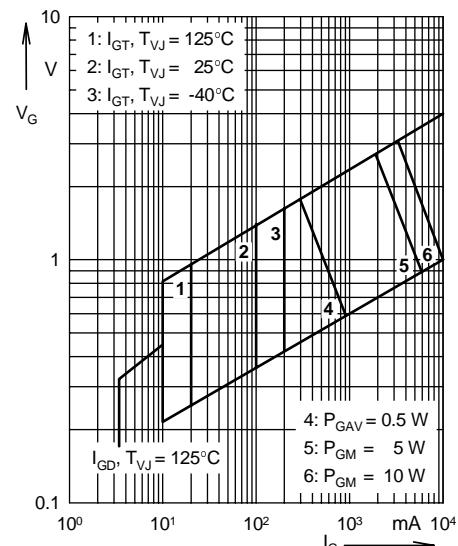
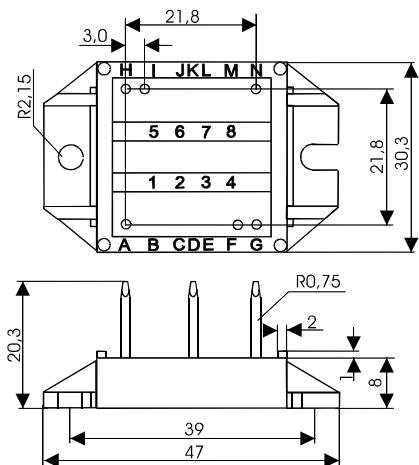


Fig. 1 Gate trigger characteristics

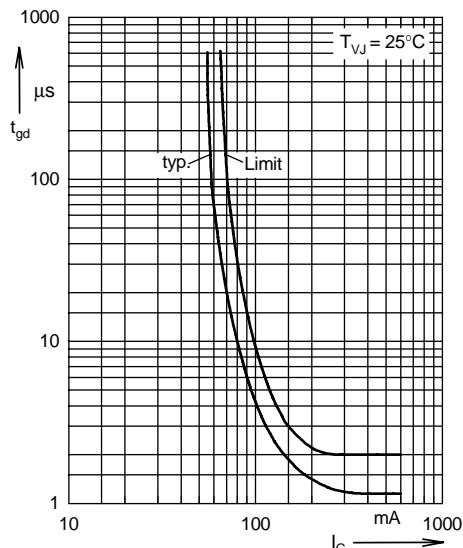


Fig. 2 Gate trigger delay time