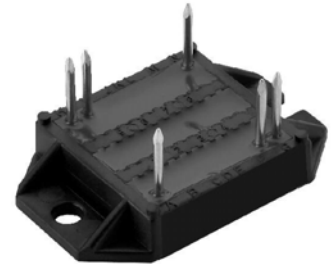
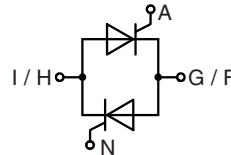


# AC Controller Modules

**$I_{RMS} = 175\text{ A}$**   
 **$V_{RRM} = 800\text{-}1600\text{ V}$**

## Preliminary Data

$V_{RSM}$ $V_{DSM}$ V	$V_{RRM}$ $V_{DRM}$ V	Type
800	800	MMO 175-08io7
1200	1200	MMO 175-12io7
1600	1600	MMO 175-16io7



Symbol	Conditions	Maximum Ratings		
$I_{RMS}$	$T_C = 85^\circ\text{C}$ , 50 - 400 Hz, (per single controller)	175	A	
$I_{TRMS}$		125	A	
$I_{TAVM}$	$T_C = 85^\circ\text{C}$ ; 180° sine	80	A	
$I_{TSM}$	$T_{VJ} = 45^\circ\text{C}$ $V_R = 0$	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	1500 1600	A A
	$T_{VJ} = 125^\circ\text{C}$ $V_R = 0$	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	1350 1450	A A
$I^2t$	$T_{VJ} = 45^\circ\text{C}$ $V_R = 0$	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	11200 10750	$\text{A}^2\text{s}$ $\text{A}^2\text{s}$
	$T_{VJ} = 125^\circ\text{C}$ $V_R = 0$	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	9100 8830	$\text{A}^2\text{s}$ $\text{A}^2\text{s}$
$(di/dt)_{cr}$	$T_{VJ} = 125^\circ\text{C}$ f = 50 Hz, $t_p = 200\ \mu\text{s}$	repetitive, $I_T = 80\text{ A}$	150	$\text{A}/\mu\text{s}$
	$V_D = \frac{2}{3} V_{DRM}$ $I_G = 0.45\text{ A}$ $di_G/dt = 0.45\text{ A}/\mu\text{s}$	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	$\text{V}/\mu\text{s}$
$P_{GM}$	$T_{VJ} = 125^\circ\text{C}$	$t_p = 30\ \mu\text{s}$	10	W
	$I_T = I_{TAVM}$	$t_p = 300\ \mu\text{s}$	5	W
$P_{GAVM}$			0.5	W
$V_{RGM}$			10	V
$T_{VJ}$			-40...+150	$^\circ\text{C}$
$T_{VJM}$			150	$^\circ\text{C}$
$T_{stg}$			-40...+125	$^\circ\text{C}$
$V_{ISOL}$	50/60 Hz, RMS	t = 1 min	2500	V~
	$I_{ISOL} \leq 1\text{ mA}$	t = 1 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.

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
$V_T$	$I_T = 200 \text{ A}; T_{VJ} = 25^\circ\text{C}$	$\leq$	1.57 V
$V_{T0}$	For power-loss calculations only		0.85 V
$r_T$			3.7 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 $\leq$ 1.6 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
$I_{GD}$		$\leq$	10 mA
$I_L$	$T_{VJ} = 25^\circ\text{C}; t_p = 10 \mu\text{s}$ $I_G = 0.45 \text{ A}; di_G/dt = 0.45 \text{ A}/\mu\text{s}$	$\leq$	450 mA
$I_H$	$T_{VJ} = 25^\circ\text{C}; V_D = 6 \text{ V}; R_{GK} = \infty$	$\leq$	200 mA
$t_{gd}$	$T_{VJ} = 25^\circ\text{C}; V_D = \frac{1}{2} V_{DRM}$ $I_G = 0.45 \text{ A}; di_G/dt = 0.45 \text{ A}/\mu\text{s}$	$\leq$	2 $\mu\text{s}$
$R_{thJC}$	per thyristor; DC		0.5 K/W
	per module		0.25 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 <sup>2</sup>

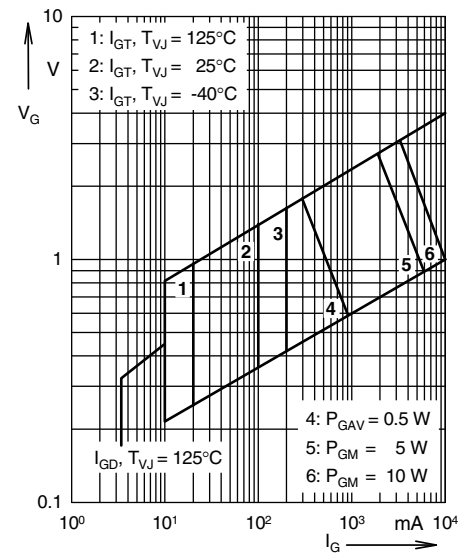


Fig. 1 Gate trigger characteristics

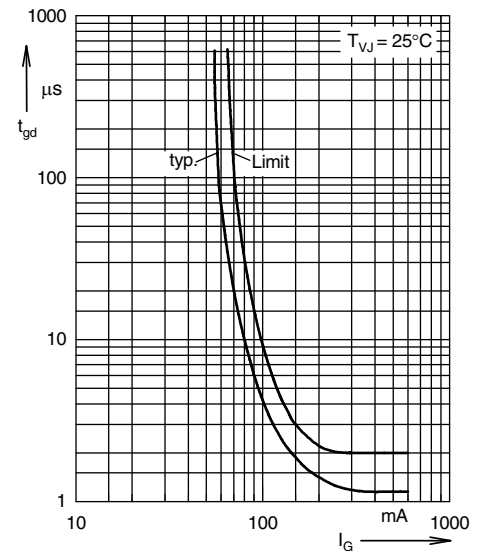


Fig. 2 Gate trigger delay time

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