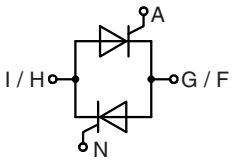
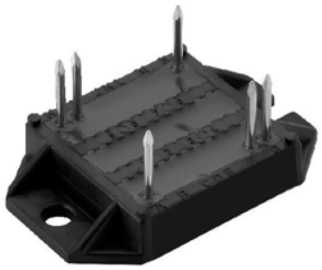
AC Controller Modules

I_{RMS} = 175 A
V_{RRM} = 800-1600 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°C, 50 - 400 Hz, (per single controller)		175	A
I_{TRMS}			125	A
I_{TAVM}	T_C = 85°C; 180° sine		80	A
I_{TSM}	T_{VJ} = 45°C	t = 10 ms (50 Hz), sine	1500	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	1600	A
	T_{VJ} = 125°C	t = 10 ms (50 Hz), sine	1350	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	1450	A
I^2t	T_{VJ} = 45°C	t = 10 ms (50 Hz), sine	11200	A^2s
	V_R = 0	t = 8.3 ms (60 Hz), sine	10750	A^2s
	T_{VJ} = 125°C	t = 10 ms (50 Hz), sine	9100	A^2s
	V_R = 0	t = 8.3 ms (60 Hz), sine	8830	A^2s
$(di/dt)_{cr}$	T_{VJ} = 125°C f = 50 Hz, t_P = 200 µs	repetitive, I_T = 80 A	150	A/µs
	V_D = $^2/_3$ V_{DRM} I_G = 0.45 A di_G/dt = 0.45 A/µs	non repetitive, I_T = I_{TAVM}	500	A/µs
$(dv/dt)_{cr}$	T_{VJ} = 125°C; V_{DR} = $^2/_3$ V_{DRM} R_{GK} = ∞; method 1 (linear voltage rise)		1000	V/µs
P_{GM}	T_{VJ} = 125°C	t_p = 30 µs	10	W
	I_T = I_{TAVM}	t_p = 300 µs	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	t = 1 min	2500	V~
	I_{ISOL} ≤ 1 mA	t = 1 s	3000	V~
M_d	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.

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

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

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Symbol	Conditions		Characteristic Values		
I_D, I_R	T_{VJ} = 125°C; $V_R = V_{RRM}$; $V_D = V_{DRM}$		≤	5	mA
V_T	I_T = 200 A; T_{VJ} = 25°C		≤	1.57	V
V_{T0}	For power-loss calculations only			0.85	V
r_T				3.7	mΩ
V_{GT}	V_D = 6 V	T_{VJ} = 25°C	≤	1.5	V
		T_{VJ} = -40°C	≤	1.6	V
I_{GT}	V_D = 6 V	T_{VJ} = 25°C	≤	100	mA
		T_{VJ} = -40°C	≤	200	mA
V_{GD}	T_{VJ} = 125°C; $V_D = ^2/_3 V_{DRM}$		≤	0.2	V
I_{GD}			≤	10	mA
I_L	T_{VJ} = 25°C; t_P = 10 µs I_G = 0.45 A; di_G/dt = 0.45 A/µs		≤	450	mA
I_H	T_{VJ} = 25°C; V_D = 6 V; R_{GK} = ∞		≤	200	mA
t_{gd}	T_{VJ} = 25°C; V_D = ½ V_{DRM} I_G = 0.45 A; di_G/dt = 0.45 A/µs		≤	2	µs
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^2

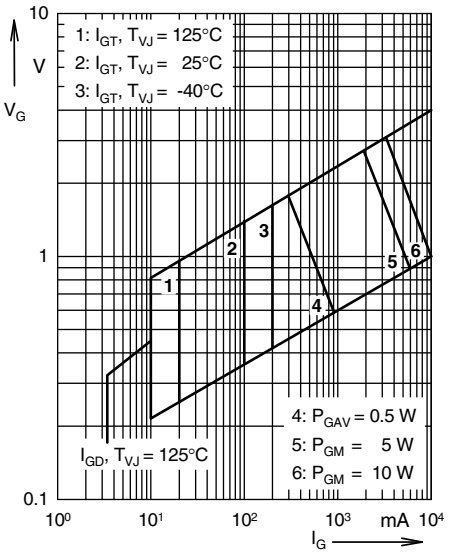


Fig. 1 Gate trigger characteristics

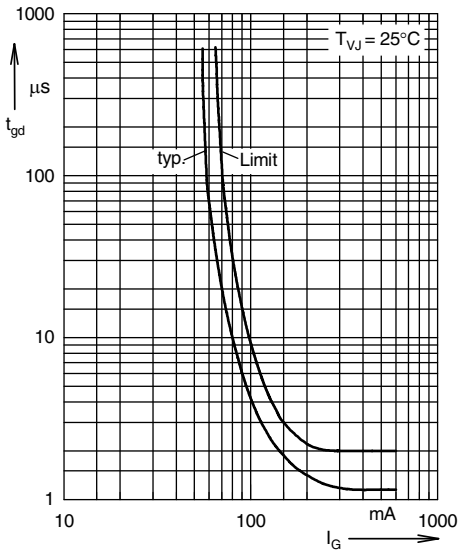
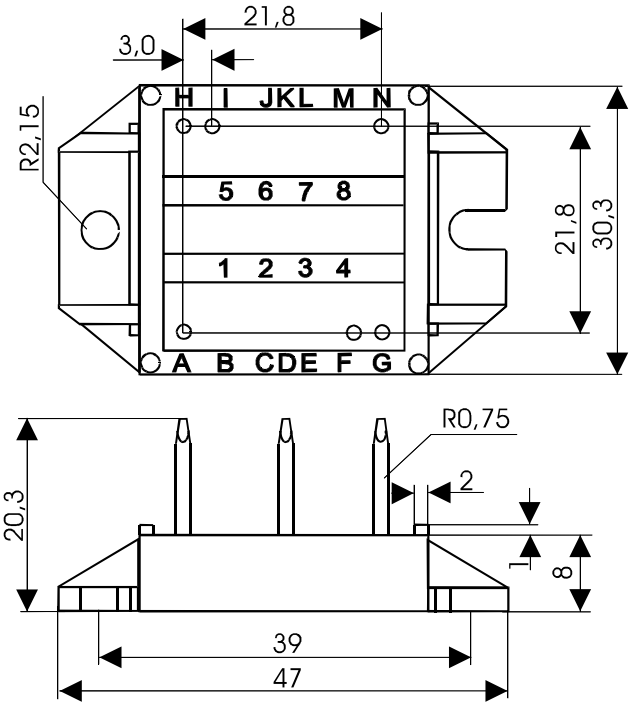


Fig. 2 Gate trigger delay time

Dimensions in mm (1 mm = 0.0394")



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