

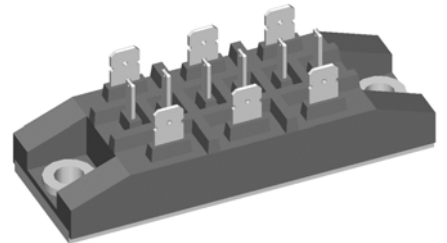
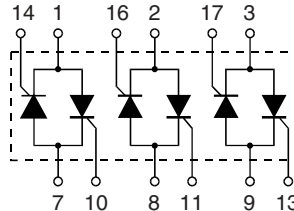
Three Phase AC Controller Modules

$$I_{RMS} = 3 \times 60 \text{ A}$$

$$V_{RRM} = 1200-1600 \text{ V}$$

Preliminary data

V_{RSM}	V_{RRM}	Type
V_{DSM}	V_{DRM}	
V	V	
1200	1200	VWO 60-12io7
1400	1400	VWO 60-14io7
1600	1600	VWO 60-16io7



Symbol	Conditions	Maximum Ratings	Features	
I_{RMS}	$T_K = 85^\circ\text{C}$, 50 - 400 Hz (per phase)	60 A	<ul style="list-style-type: none"> • Thyristor controller for AC (circuit W3C acc. to IEC) for mains frequency • Package with metal base plate • Isolation voltage 3000 V~ • Planar passivated chips • UL applied • 1/4" fast-on power terminals 	
I_{TRMS}	$T_{VJ} = T_{VJM}$	43 A		
I_{TAVM}	$T_K = 85^\circ\text{C}$; (180° sine)	27 A		
I_{TSM}	$T_{VJ} = 45^\circ\text{C}$; $V_R = 0$	t = 10 ms (50 Hz), sine		550 A
		t = 8.3 ms (60 Hz), sine		600 A
I^2t	$T_{VJ} = T_{VJM}$; $V_R = 0$	t = 10 ms (50 Hz), sine		500 A
		t = 8.3 ms (60 Hz), sine		550 A
I^2t	$T_{VJ} = 45^\circ\text{C}$; $V_R = 0$	t = 10 ms (50 Hz), sine		1520 A ² s
		t = 8.3 ms (60 Hz), sine		1520 A ² s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$; f = 50 Hz, $t_p = 200 \mu\text{s}$ $V_D = 2/3 V_{DRM}$ $I_G = 0.45 \text{ A}$ $di_G/dt = 0.45 \text{ A}/\mu\text{s}$	repetitive, $I_T = 25 \text{ A}$		150 A/ μs
		non repetitive, $I_T = I_{TAVM}$	500 A/ μs	
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; $R_{GK} = \infty$; method 1 (linear voltage rise)	$V_{DR} = 2/3 V_{DRM}$	1000 V/ μs	
P_{GM}	$T_{VJ} = T_{VJM}$; $I_T = I_{TAVM}$	$t_p = 30 \mu\text{s}$	10 W	
		$t_p = 300 \mu\text{s}$	5 W	
P_{GAVM}			0.5 W	
V_{RGM}			10 V	
T_{VJ}			-40...+125 °C	
T_{VJM}			125 °C	
T_{stg}			-40...+125 °C	
V_{ISOL}	50/60 Hz, RMS $I_{ISOL} \leq 1 \text{ mA}$	t = 1 min	2500 V~	
		t = 1 s	3000 V~	
M_d	Mounting torque (M5) (10-32 UNF)		5 ± 15 % Nm	
			44 ± 15 % lb.in.	
Weight	typ.		110 g	



Applications

- Switching and control of three phase AC circuits
- Softstart AC motor controller
- Solid state switches
- Light and temperature control

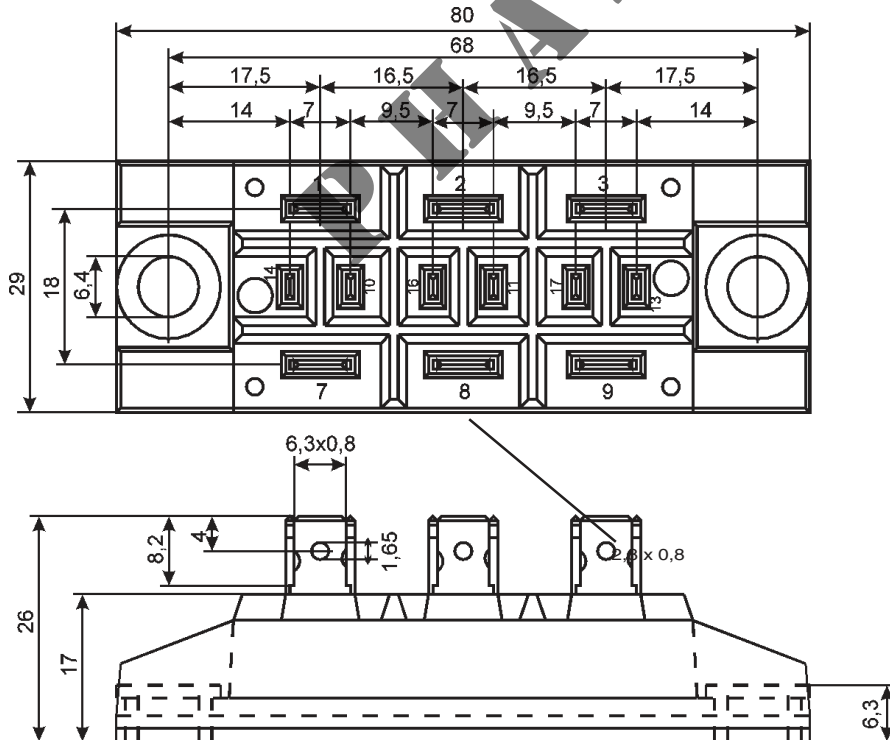
Advantages

- Easy to mount with two screws
- Space and weight savings
- Improved temperature and power cycling capability
- High power density
- Light weight and compact

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Data according to IEC 60747 refer to a single thyristor/diode unless otherwise stated.

Symbol	Conditions	Characteristic Values	
I_D, I_R	$T_{VJ} = T_{VJM}; V_R = V_{RRM}; V_D = V_{DRM}$	\leq	5 mA
V_T	$I_T = 45 \text{ A}; T_{VJ} = 25^\circ\text{C}$	\leq	1.45 V
V_{T0}	For power-loss calculations only		0.85 V
r_T			11 m Ω
V_{GT}	$V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$	\leq	1.5 V
	$T_{VJ} = -40^\circ\text{C}$	\leq	1.6 V
I_{GT}	$V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$	\leq	100 mA
	$T_{VJ} = -40^\circ\text{C}$	\leq	200 mA
V_{GD}	$T_{VJ} = T_{VJM}; V_D = 2/3 V_{DRM}$	\leq	0.2 V
I_{GD}		\leq	5 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}	$T_{VJ} = 25^\circ\text{C}; V_D = 1/2 V_{DRM}$ $I_G = 0.45 \text{ A}; di_G/dt = 0.45 \text{ A}/\mu\text{s}$	\leq	2 μs
t_q	$T_{VJ} = T_{VJM}; I_T = 20 \text{ A}, t_p = 200 \mu\text{s}; di/dt = -10 \text{ A}/\mu\text{s}$ $V_R = 100 \text{ V}; dv/dt = 15 \text{ V}/\mu\text{s}; V_D = 2/3 V_{DRM}$	typ.	150 μs
R_{thJC}	per thyristor; sine 180°el		0.9 K/W
	per module		0.15 K/W
R_{thJK}	per thyristor; sine 180°el		1.1 K/W
	per module		0.183 K/W
d_s	Creeping distance on surface		16.1 mm
d_A	Creepage distance in air		6.0 mm
a	Max. allowable acceleration		50 m/s ²

Dimensions in mm (1 mm = 0.0394")


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

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