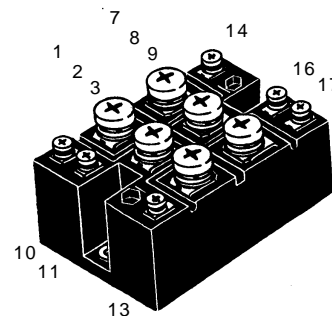
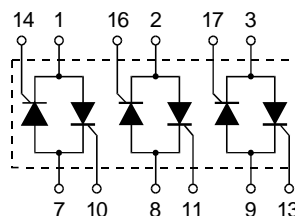


# Three Phase AC Controller Modules

**$I_{RMS} = 50\text{ A}$**   
 **$V_{RRM} = 800\text{-}1600\text{ V}$**

Preliminary data

$V_{RSM}$	$V_{RRM}$	Type
$V_{DSM}$	$V_{DRM}$	
V	V	
800	800	VWO 50-08io7
1200	1200	VWO 50-12io7
1400	1400	VWO 50-14io7
1600	1600	VWO 50-16io7



Symbol	Test Conditions	Maximum Ratings
$I_{RMS}$	$T_C = 85^\circ\text{C}$ , 50 - 400 Hz (per phase)	50 A
$I_{TRMS}$	$T_{VJ} = T_{VJM}$	36 A
$I_{TAVM}$	$T_C = 85^\circ\text{C}$ ; (180° sine)	23 A
$I_{TSM}$	$T_{VJ} = 45^\circ\text{C}$ ; $V_R = 0$	t = 10 ms (50 Hz), sine 520 A
		t = 8.3 ms (60 Hz), sine 560 A
$I_{\beta t}$	$T_{VJ} = T_{VJM}$ ; $V_R = 0$	t = 10 ms (50 Hz), sine 460 A
		t = 8.3 ms (60 Hz), sine 500 A
$I_{\beta t}$	$T_{VJ} = 45^\circ\text{C}$ ; $V_R = 0$	t = 10 ms (50 Hz), sine 1350 A <sup>2</sup> s
		t = 8.3 ms (60 Hz), sine 1320 A <sup>2</sup> s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ ; f = 50 Hz, $t_p = 200\ \mu\text{s}$ $V_D = 2/3 V_{DRM}$ $I_G = 0.3\text{ A}$	repetitive, $I_T = 150\text{ A}$ 100 A/ $\mu\text{s}$
		non repetitive, $I_T = I_{TAVM}$ 500 A/ $\mu\text{s}$
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$ ; $R_{GK} = \infty$ ; method 1 (linear voltage rise)	$V_{DR} = 2/3 V_{DRM}$ 1000 V/ $\mu\text{s}$
$P_{GM}$	$T_{VJ} = T_{VJM}$	$t_p = 30\ \mu\text{s}$ 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...+125 °C
$T_{VJM}$		125 °C
$T_{stg}$		-40...+125 °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 (M5)	5/44±15 % Nm/lb.in.
	Terminal connection torque (M3; M5)	1.5/13±15 % Nm/lb.in.
Weight	typ.	180 g

## Features

- 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

## 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
- High power density

Data according to IEC 60747 refer to a single thyristor/diode unless otherwise stated. IXYS reserves the right to change limits, test conditions and dimensions

Symbol	Test Conditions	Characteristic Values
$I_D, I_R$	$T_{VJ} = T_{VJM}; V_R = V_{RRM}; V_D = V_{DRM}$	$\leq 5$ mA
$V_T$	$I_T = 80$ A; $T_{VJ} = 25^\circ\text{C}$	$\leq 1.65$ V
$V_{T0}$	For power-loss calculations only	0.85 V
$r_T$		11 m $\Omega$
$V_{GT}$	$V_D = 6$ V; $T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = -40^\circ\text{C}$	$\leq 1.0$ V $\leq 1.6$ V
$I_{GT}$	$V_D = 6$ V; $T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = -40^\circ\text{C}$	$\leq 100$ mA $\leq 150$ mA
$V_{GD}$	$T_{VJ} = T_{VJM}; V_D = 2/3 V_{DRM}$	$\leq 0.2$ V
$I_{GD}$		$\leq 5$ mA
$I_L$	$T_{VJ} = 25^\circ\text{C}; t_p = 10$ $\mu\text{s}$ $I_G = 0.3$ A; $di_G/dt = 0.3$ A/ $\mu\text{s}$	$\leq 200$ mA
$I_H$	$T_{VJ} = 25^\circ\text{C}; V_D = 6$ V; $R_{GK} = \infty$	$\leq 150$ mA
$t_{gd}$	$T_{VJ} = 25^\circ\text{C}; V_D = 1/2 V_{DRM}$ $I_G = 0.3$ A; $di_G/dt = 0.3$ A/ $\mu\text{s}$	$\leq 2$ $\mu\text{s}$
$t_q$	$T_{VJ} = T_{VJM}; I_T = 20$ A, $t_p = 200$ $\mu\text{s}$ ; $di/dt = -10$ A/ $\mu\text{s}$ $V_R = 100$ V; $dv/dt = 15$ V/ $\mu\text{s}$ ; $V_D = 2/3 V_{DRM}$	typ. 150 $\mu\text{s}$
$R_{thJC}$	per thyristor; sine 180°el per module	1.20 K/W 0.20 K/W
$R_{thJK}$	per thyristor; sine 180°el per module	1.31 K/W 0.218 K/W
$d_s$	Creeping distance on surface	8.0 mm
$d_A$	Creepage distance in air	4.5 mm
$a$	Max. allowable acceleration	50 m/s <sup>2</sup>

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