

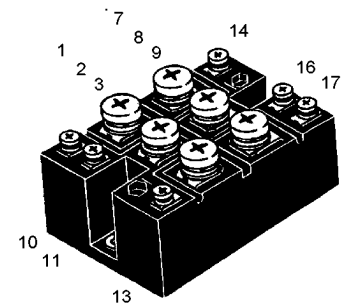
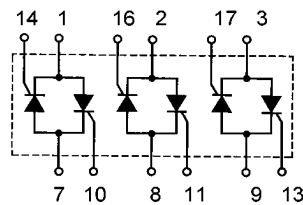
Three Phase AC Controller Modules

$$I_{RMS} = 40 \text{ A}$$

$$V_{RRM} = 800 - 1600 \text{ V}$$

Preliminary data

V_{RSM}	V_{RRM}	Type
V_{DSM}	V_{DRM}	
V	V	
800	800	VWO 40-08io7
1200	1200	VWO 40-12io7
1400	1400	VWO 40-14io7
1600	1600	VWO 40-16io7



Symbol	Test Conditions	Maximum Ratings
I_{RMS}	$T_C = 85^\circ\text{C}$, 50 - 400 Hz (per phase)	40 A
I_{TRMS}	$T_{VJ} = T_{VJM}$	29 A
I_{TAVM}	$T_C = 85^\circ\text{C}$; (180° sine)	18 A
I_{TSM}	$T_{VJ} = 45^\circ\text{C}$; $t = 10 \text{ ms}$ (50 Hz), sine	400 A
	$V_R = 0$; $t = 8.3 \text{ ms}$ (60 Hz), sine	450 A
	$T_{VJ} = T_{VJM}$; $t = 10 \text{ ms}$ (50 Hz), sine	360 A
	$V_R = 0$; $t = 8.3 \text{ ms}$ (60 Hz), sine	390 A
I^2t	$T_{VJ} = 45^\circ\text{C}$; $t = 10 \text{ ms}$ (50 Hz), sine	800 A ² s
	$V_R = 0$; $t = 8.3 \text{ ms}$ (60 Hz), sine	850 A ² s
	$T_{VJ} = T_{VJM}$; $t = 10 \text{ ms}$ (50 Hz), sine	650 A ² s
	$V_R = 0$; $t = 8.3 \text{ ms}$ (60 Hz), sine	640 A ² s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$; $f = 50 \text{ Hz}$, $t_p = 200 \mu\text{s}$	repetitive, $I_T = 150 \text{ A}$ 100 A/ μs
	$V_D = 2/3 V_{DRM}$; $I_G = 0.3 \text{ A}$; $di_G/dt = 0.3 \text{ A}/\mu\text{s}$	non repetitive, $I_T = I_{TAVM}$ 500 A/ μs
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; $V_{DR} = 2/3 V_{DRM}$; $R_{GK} = \infty$; method 1 (linear voltage rise)	1000 V/ μs
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; $t = 1 \text{ min}$	2500 V~
	$I_{ISOL} \leq 1 \text{ mA}$; $t = 1 \text{ s}$	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

L167 (8/96)

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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	$I_T = 80 \text{ A}; T_{VJ} = 25^\circ\text{C}$	$\leq$	1.65 V
V_{T0}	For power-loss calculations only ($T_{VJ} = 125^\circ\text{C}$)	0.85	V
r_T		15	mΩ
V_{GT}	$V_D = 6 \text{ V}; T_{VJ} = 25^\circ\text{C}$	$\leq$	1.0 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
	$T_{VJ} = -40^\circ\text{C}$	$\leq$	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	$T_{VJ} = 25^\circ\text{C}; t_p = 10 \mu\text{s}$ $I_G = 0.3 \text{ A}; di_G/dt = 0.3 \text{ A}/\mu\text{s}$	$\leq$	200 mA
I_H	$T_{VJ} = 25^\circ\text{C}; V_D = 6 \text{ V}; R_{GK} = \infty$	$\leq$	150 mA
t_{gd}	$T_{VJ} = 25^\circ\text{C}; V_D = 1/2 V_{DRM}$ $I_G = 0.3 \text{ A}; di_G/dt = 0.3 \text{ A}/\mu\text{s}$	$\leq$	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	1.43	K/W
	per module	0.238	K/W
R_{thJK}	per thyristor; sine 180°el	1.53	K/W
	per module	0.255	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 ²

Dimensions in mm (1 mm = 0.0394")

