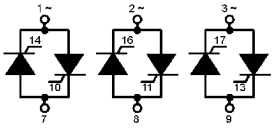
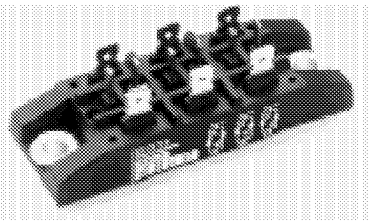
Three Phase AC Controller Modules

I_{RMS} = 3 x 39 A
V_{RRM} = 800 - 1600 V

Preliminary data

V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V	Type
800	800	VWO 36-08io7
1200	1200	VWO 36-12io7
1400	1400	VWO 36-14io7
1600	1600	VWO 36-16io7





Symbol	Test Conditions		Maximum Ratings	
I_{RMS}	T_K = 85°C, 50 - 400 Hz (per phase)		39	A
I_{TRMS}	$T_{VJ} = T_{VJM}$		28	A
I_{TAVM}	T_K = 85°C; (180° sine)		18	A
I_{TSM}	T_{VJ} = 45°C;	t = 10 ms (50 Hz), sine	320	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	350	A
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	280	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	310	A
I^2t	T_{VJ} = 45°C	t = 10 ms (50 Hz), sine	500	A^2s
	V_R = 0	t = 8.3 ms (60 Hz), sine	520	A^2s
	$T_{VJ} = T_{VJM}$	t = 10 ms (50 Hz), sine	390	A^2s
	V_R = 0	t = 8.3 ms (60 Hz), sine	400	A^2s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$; f =50 Hz, t_P =200 µs; V_D = 2/3 V_{DRM}; I_G = 0.3 A; di_G/dt = 0.3 A/µs	repetitive, I_T = 20 A	150	A/µs
		non repetitive, $I_T = I_{TAVM}$	500	A/µs
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; R_{GK} = ∞; method 1 (linear voltage rise)	V_{DR} = 2/3 V_{DRM}	1000	V/µs
P_{GM}	$T_{VJ} = T_{VJM}$	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...+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 mA	t = 1 s	3000	V~
M_d	Mounting torque (M5)		5 ± 15 %	Nm
		(10-32 UNF)	44 ± 15 %	lb.in.
Weight	typ.		110	g

Features

- Thyristor controller for AC (circuit W3C acc. to IEC) for mains requency
- Package with metal base plate
- Isolation voltage 3000 V~
- Planar passivated chips
- UL applied
- 1/4" fast-on power terminals

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

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

L173 (8/96)

Symbol	Test Conditions		Characteristic Values		
I_D, I_R	$T_{VJ} = T_{VJM}$; $V_R = V_{RRM}$; $V_D = V_{DRM}$		≤	5	mA
V_T	I_T = 45 A; T_{VJ} = 25°C		≤	1.45	V
V_{T0}	For power-loss calculations only (T_{VJ} = 125°C)			0.85	V
r_T				13	mΩ
V_{GT}	V_D = 6 V;	T_{VJ} = 25°C	≤	1.0	V
		T_{VJ} = -40°C	≤	1.2	V
I_{GT}	V_D = 6 V;	T_{VJ} = 25°C	≤	65	mA
		T_{VJ} = -40°C	≤	80	mA
V_{GD}	$T_{VJ} = T_{VJM}$;	V_D = 2/3 V_{DRM}	≤	0.2	V
I_{GD}			≤	5	mA
I_L	T_{VJ} = 25°C; t_P = 10 µs I_G = 0.3 A; di_G/dt = 0.3 A/µs		≤	150	mA
I_H	T_{VJ} = 25°C; V_D = 6 V; R_{GK} = ∞		≤	100	mA
t_{gd}	T_{VJ} = 25°C; V_D = 1/2 V_{DRM} I_G = 0.3 A; di_G/dt = 0.3 A/µs		≤	2	µs
t_q	$T_{VJ} = T_{VJM}$; I_T = 20 A, t_P = 200 µs; di/dt = -10 A/µs V_R = 100 V; dv/dt = 15 V/µs; V_D = 2/3 V_{DRM}		typ.	150	µs
R_{thJC}	per thyristor; sine 180°el			1.3	K/W
	per module			0.216	K/W
R_{thJK}	per thyristor; sine 180°el			1.5	K/W
	per module			0.25	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")