

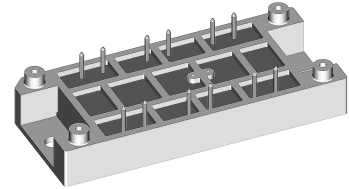
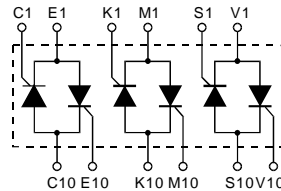
Three Phase AC Controller Modules

$$I_{RMS} = 3 \times 143 \text{ A}$$

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

Preliminary data

V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V	Type
800	800	VWO 140-08io1
1200	1200	VWO 140-12io1
1400	1400	VWO 140-14io1
1600	1600	VWO 140-16io1



Symbol	Test Conditions	Maximum Ratings	Features
I_{RMS}	$T_C = 85^\circ\text{C}$, 50 - 400 Hz (per phase)	101 A	<ul style="list-style-type: none"> • Thyristor controller for AC (circuit W3C acc. to IEC) for mains frequency • Package with DCB base plate • Isolation voltage 3600 V~ • Planar passivated chips • UL applied
I_{RMS}	$T_C = 85^\circ\text{C}$, 50 - 400 Hz (per phase) for 10 sec.	143 A	
I_{TAVM}	$T_C = 85^\circ\text{C}$; (180° sine)	46 A	
I_{TSM}	$T_{VJ} = 45^\circ\text{C}$; $V_R = 0$	t = 10 ms (50 Hz), sine 1150 A	
		t = 8.3 ms (60 Hz), sine 1240 A	
I_{TSM}	$T_{VJ} = 125^\circ\text{C}$; $V_R = 0$	t = 10 ms (50 Hz), sine 1040 A	
		t = 8.3 ms (60 Hz), sine 1120 A	
I^2t	$T_{VJ} = 45^\circ\text{C}$; $V_R = 0$	t = 10 ms (50 Hz), sine 6610 A ² s	
		t = 8.3 ms (60 Hz), sine 6460 A ² s	
$(di/dt)_{cr}$	$T_{VJ} = 125^\circ\text{C}$; 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, $I_T = 45 \text{ A}$ 150 A/ μs	
		non repetitive, $I_T = I_{TAVM}$ 500 A/ μs	
$(dv/dt)_{cr}$	$T_{VJ} = 125^\circ\text{C}$; $R_{GK} = \infty$; method 1 (linear voltage rise)	$V_{DR} = 2/3 V_{DRM}$ 1000 V/ μs	
P_{GM}	$T_{VJ} = 125^\circ\text{C}$	$t_p = 30 \mu\text{s}$ 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}	for 10 sec.	150 °C	
T_{stg}		-40...+125 °C	
V_{ISOL}	50/60 Hz, RMS	t = 1 min 3000 V~	
	$I_{ISOL} \leq 1 \text{ mA}$	t = 1 s 3600 V~	
M_d	Mounting torque (M5)	2-2.5 Nm.	
		18-22 lb.in.	
Weight	typ.	80 g	

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

Symbol	Test Conditions	Characteristic Values	
I_D, I_R	$T_{VJ} = 125^\circ\text{C}; V_R = V_{RRM}; V_D = V_{DRM}$	\leq	5 mA
V_T	$I_T = 140 \text{ A}; T_{VJ} = 25^\circ\text{C}$	\leq	1.5 V
V_{T0}	For power-loss calculations only		0.85 V
r_T			5.2 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}	$T_{VJ} = 125^\circ\text{C}; V_D = 2/3 V_{DRM}$	\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	$T_{VJ} = 125^\circ\text{C}; I_T = 20 \text{ A}, t_p = 200 \mu\text{s}; di/dt = -10 \text{ A}/\mu\text{s}$ typ. $V_R = 100 \text{ V}; dv/dt = 15 \text{ V}/\mu\text{s}; V_D = 2/3 V_{DRM}$		150 μs
R_{thJC}	per thyristor; sine 180°el		0.6 K/W
	per module		0.1 K/W
R_{thJK}	per thyristor; sine 180°el		0.7 K/W
	per module		0.117 K/W
d_s	Creeping distance on surface		12.7 mm
d_A	Creepage distance in air		9.4 mm
a	Max. allowable acceleration		50 m/s ²

Dimensions in mm (1 mm = 0.0394")
