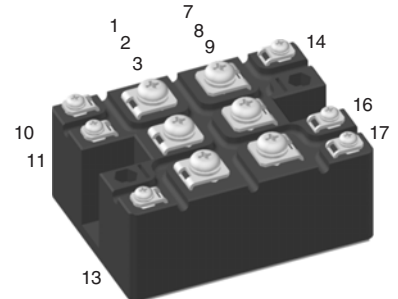
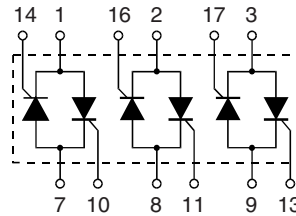


# Three Phase AC Controller Modules

**$I_{RMS} = 40\text{ A}$**   
 **$V_{RRM} = 1200-1600\text{ V}$**

Preliminary data

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



Symbol	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	
$I_{TSM}$	$T_{VJ} = 45^\circ\text{C}$ $V_R = 0$	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	400 A 450 A
	$T_{VJ} = T_{VJM}$ $V_R = 0$	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	360 A 390 A
$I^2t$	$T_{VJ} = 45^\circ\text{C}$ $V_R = 0$	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	800 A <sup>2</sup> s 850 A <sup>2</sup> s
	$T_{VJ} = T_{VJM}$ $V_R = 0$	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	650 A <sup>2</sup> s 640 A <sup>2</sup> s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ f = 50 Hz, $t_p = 200\ \mu\text{s}$ $V_D = \frac{2}{3} V_{DRM}$ $I_G = 0.3\text{ A}$ $di_G/dt = 0.3\text{ A}/\mu\text{s}$	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)	$V_{DR} = \frac{2}{3} V_{DRM}$	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

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

## 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

Symbol	Conditions	Characteristic Values	
$I_D, I_R$	$T_{VJ} = T_{VJM}; V_R = V_{RRM}; V_D = V_{DRM}$	$\leq$	5 mA
$V_T$	$I_T = 80 \text{ A}; T_{VJ} = 25^\circ\text{C}$	$\leq$	1.65 V
$V_{T0}$	For power-loss calculations only		0.85 V
$r_T$			15 m $\Omega$
$V_{GT}$	$V_D = 6 \text{ V}$	$T_{VJ} = 25^\circ\text{C}$	$\leq$ 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
$V_{GD}$	$T_{VJ} = T_{VJM}$	$V_D = \frac{2}{3} V_{DRM}$	$\leq$ 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
$t_{gd}$	$T_{VJ} = 25^\circ\text{C}; V_D = \frac{1}{2} V_{DRM}$ $I_G = 0.3 \text{ A}; di_G/dt = 0.3 \text{ A}/\mu\text{s}$	$\leq$	2 $\mu\text{s}$
$t_q$	$T_{VJ} = T_{VJM}; I_T = 20 \text{ A}, t_p = 200 \mu\text{s}; di/dt = -10 \text{ A}/\mu\text{s}$ $V_R = 100 \text{ V}; dv/dt = 15 \text{ V}/\mu\text{s}; V_D = \frac{2}{3} V_{DRM}$	typ.	150 $\mu\text{s}$
$R_{thJC}$	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 <sup>2</sup>

