

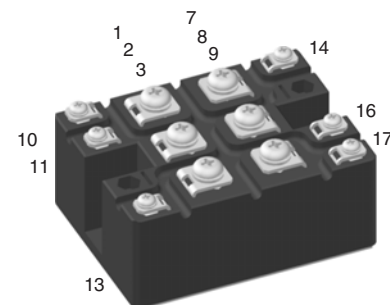
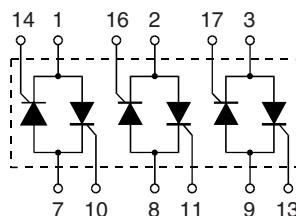
Three Phase AC Controller Modules

$$I_{RMS} = 50 \text{ A}$$

$$V_{RRM} = 1200-1600 \text{ V}$$

Preliminary data

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



Symbol	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
	$T_{VJ} = T_{VJM}$ $V_R = 0$ t = 10 ms (50 Hz), sine	460 A
	t = 8.3 ms (60 Hz), sine	500 A
I^2t	$T_{VJ} = 45^\circ\text{C}$ $V_R = 0$ t = 10 ms (50 Hz), sine	1350 A ² s
	t = 8.3 ms (60 Hz), sine	1320 A ² s
	$T_{VJ} = T_{VJM}$ $V_R = 0$ t = 10 ms (50 Hz), sine	1060 A ² s
	t = 8.3 ms (60 Hz), sine	1050 A ² 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/ μs
	non repetitive, $I_T = I_{TAVM}$	500 A/ μs
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$ $R_{GK} = \infty$; method 1 (linear voltage rise) $V_{DR} = 2/3 V_{DRM}$	1000 V/ μs
P_{GM}	$T_{VJ} = T_{VJM}$ $I_T = I_{TAVM}$ $t_p = 30 \mu\text{s}$	10 W
	$t_p = 300 \mu\text{s}$	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.	250 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	$T_{VJ} = T_{VJM}; V_R = V_{RRM}; V_D = V_{DRM}$	≤ 5 mA
V_T	$I_T = 80$ A; $T_{VJ} = 25^\circ\text{C}$	≤ 1.65 V
V_{T0}	For power-loss calculations only	0.85 V
r_T		11 m Ω
V_{GT}	$V_D = 6$ V; $T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = -40^\circ\text{C}$	≤ 1.0 V ≤ 1.6 V
I_{GT}	$V_D = 6$ V; $T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = -40^\circ\text{C}$	≤ 100 mA ≤ 150 mA
V_{GD}	$T_{VJ} = T_{VJM}; V_D = \frac{2}{3} V_{DRM}$	≤ 0.2 V
I_{GD}		≤ 5 mA
I_L	$T_{VJ} = 25^\circ\text{C}; t_p = 10$ μs $I_G = 0.3$ A; $di_G/dt = 0.3$ A/ μs	≤ 200 mA
I_H	$T_{VJ} = 25^\circ\text{C}; V_D = 6$ V; $R_{GK} = \infty$	≤ 150 mA
t_{gd}	$T_{VJ} = 25^\circ\text{C}; V_D = \frac{1}{2} V_{DRM}$ $I_G = 0.3$ 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 ; $V_D = \frac{2}{3} V_{DRM}$	typ. 150 μs
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 ²

