

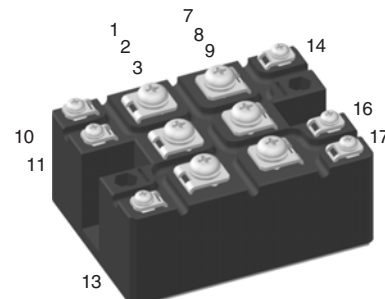
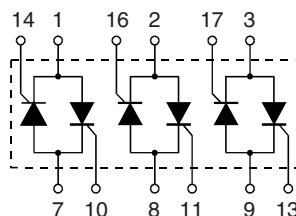
Three Phase AC Controller Modules

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

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

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}	$T_{VJ} = 45^\circ\text{C}$	$t = 10 \text{ ms}$ (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
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ $f = 50 \text{ Hz}$, $t_p = 200 \mu\text{s}$ $V_D = \frac{2}{3} V_{DRM}$ $I_G = 0.3 \text{ A}$ $di_G/dt = 0.3 \text{ A}/\mu\text{s}$	repetitive, $I_T = 150 \text{ A}$	100 A/ μs
		non repetitive, $I_T = I_{TAVM}$	500 A/ μs
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; $V_{DR} = \frac{2}{3} V_{DRM}$ $R_{GK} = \infty$; 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

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 Ω
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	$T_{VJ} = 25^\circ\text{C}; t_p = 10 \text{ }\mu\text{s}$ $I_G = 0.3 \text{ A}; di_G/dt = 0.3 \text{ A}/\mu\text{s}$	$\leq$	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	μs
t_q	$T_{VJ} = T_{VJM}; I_T = 20 \text{ A}, t_p = 200 \text{ }\mu\text{s}; di/dt = -10 \text{ A}/\mu\text{s}$ $V_R = 100 \text{ V}; dv/dt = 15 \text{ V}/\mu\text{s}; V_D = \frac{2}{3} V_{DRM}$	typ.	150	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

