

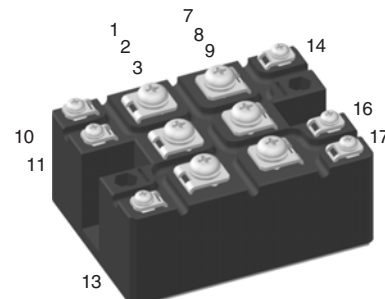
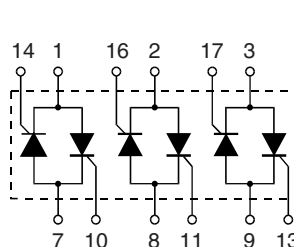
Three Phase AC Controller Modules

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

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

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}	$T_C = 85^{\circ}C$, 50 - 400 Hz (per phase)	40 A		
I_{TRMS}	$T_{VJ} = T_{VJM}$	29 A		
I_{TAVM}	$T_C = 85^{\circ}C$; (180° sine)	18 A		
I_{TSM}	$T_{VJ} = 45^{\circ}C$ $V_R = 0$	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	$T_{VJ} = 45^{\circ}C$ $V_R = 0$	t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	800 A ² s 850 A ² s
$T_{VJ} = T_{VJM}$ $V_R = 0$		t = 10 ms (50 Hz), sine t = 8.3 ms (60 Hz), sine	650 A ² s 640 A ² s	
$(di/dt)_{cr}$		$T_{VJ} = T_{VJM}$ f =50 Hz, t _p =200 μs $V_D = \frac{2}{3} V_{DRM}$ I _G = 0.3 A di _G /dt = 0.3 A/μs	repetitive, I _T = 150 A non repetitive, I _T = I _{TAVM}	100 A/μs 500 A/μs
	$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$, R _{GK} = ∞; method 1 (linear voltage rise)	$V_{DR} = \frac{2}{3} V_{DRM}$	1000 V/μs
		P_{GM}	$T_{VJ} = T_{VJM}$ I _T = I _{TAVM}	t _p = 30 μs t _p = 300 μs
P_{GAVM}				
	V_{RGM}			
		T_{VJ} T_{VJM} T_{stg}		
V_{ISOL}			50/60 Hz, RMS I _{ISOL} ≤ 1 mA	t = 1 min t = 1 s
	M_d		Mounting torque (M5) Terminal connection torque (M3; M5)	
		Weight	typ.	

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

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 per module		1.43 0.238	K/W K/W
R_{thJK}	per thyristor; sine 180°el per module		1.53 0.255	K/W 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

