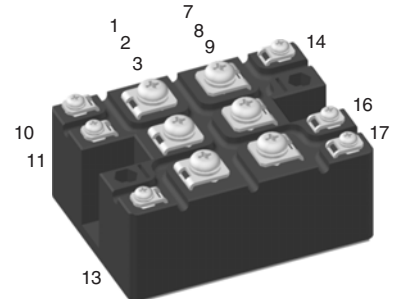
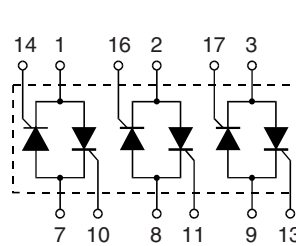


Three Phase AC Controller Modules

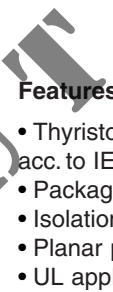
$I_{RMS} = 40 \text{ A}$
 $V_{RRM} = 1200-1600 \text{ V}$

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	Features
I_{RMS}	$T_C = 85^\circ\text{C}$, 50 - 400 Hz (per phase)	40 A	<ul style="list-style-type: none"> • 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
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 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, $t_p = 200 \mu\text{s}$ $V_D = \frac{2}{3} V_{DRM}$ $I_G = 0.3 \text{ A}$ $di_G/dt = 0.3 \text{ A}/\mu\text{s}$	repetitive, $I_T = 150 \text{ A}$	100 A/ μs
		non repetitive, $I_T = I_{TAVM}$	500 A/ μs
$(dv/dt)_{cr}$	$T_{VJ} = T_{VJM}$; $R_{GK} = \infty$; method 1 (linear voltage rise)	$V_{DR} = \frac{2}{3} V_{DRM}$	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 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



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

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

