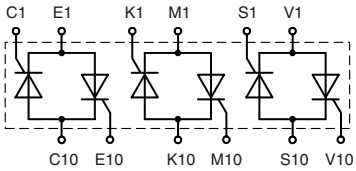
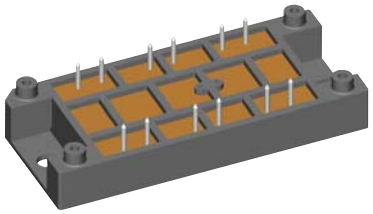
Three Phase AC Controller Modules

I_{RMS} = 3x 143 A
V_{RRM} = 1200-1600 V

Preliminary data

V_{RSM} V_{DSM} V	V_{RRM} V_{DRM} V	Type
1200	1200	VWO 140-12io1
1400	1400	VWO 140-14io1
1600	1600	VWO 140-16io1





pin configuration see outlines

Symbol	Conditions		Maximum Ratings	
I_{RMS}	T_C = 85°C; 50 - 400 Hz (per phase)		101	A
I_{RMS}	T_C = 85°C; 50 - 400 Hz (per phase) for 10 sec.		143	A
I_{TAVM}	T_C = 85°C; (180° sine)		46	A
I_{TSM}	T_{VJ} = 45°C	t = 10 ms (50 Hz), sine	1150	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	1240	A
	T_{VJ} = 125°C	t = 10 ms (50 Hz), sine	1040	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	1120	A
I^2t	T_{VJ} = 45°C	t = 10 ms (50 Hz), sine	6610	A^2s
	V_R = 0	t = 8.3 ms (60 Hz), sine	6460	A^2s
	T_{VJ} = 125°C	t = 10 ms (50 Hz), sine	5410	A^2s
	V_R = 0	t = 8.3 ms (60 Hz), sine	5270	A^2s
$(di/dt)_{cr}$	T_{VJ}=125°C	repetitive, I_T = 45 A	150	A/µs
	f = 50 Hz, t_P = 200 µs			
	V_D = $^2/_3$ V_{DRM}			
	I_G = 0.45 A	non repetitive, I_T = I_{TAVM}	500	A/µs
	di_G/dt = 0.45 A/µs			
$(dv/dt)_{cr}$	T_{VJ}=125°C;	V_{DR} = $^2/_3$ V_{DRM}	1000	V/µs
	R_{GK} = ∞; method 1 (linear voltage rise)			
P_{GM}	T_{VJ} = 125°C	t_p = 30 µs	10	W
	I_T = I_{TAVM}	t_p = 300 µs	5	W
P_{GAVM}			0.5	W
V_{RGM}			10	V
T_{VJ}			-40...+125	°C
T_{VJM}	for 10 sec.		150	°C
T_{stg}			-40...+125	°C
V_{ISOL}	50/60 Hz, RMS	t = 1 min	3000	V~
	I_{ISOL} ≤ 1 mA	t = 1 s	3600	V~
M_d	Mounting torque (M5)		2-2.5	Nm.
			18-22	lb.in.
Weight	typ.		80	g

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

Features

- Thyristor controller for AC (circuit W3C acc. to IEC) for mains frequency
- Package with DCB base plate
- Isolation voltage 3600 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

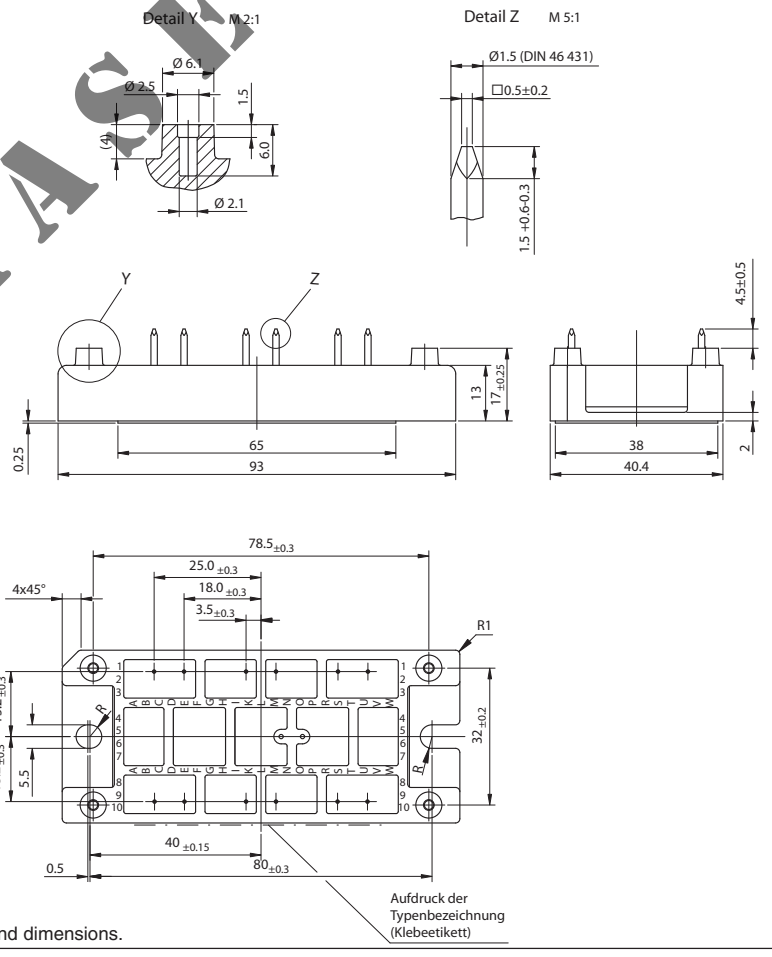
Advantages

- Easy to mount with two screws
- Space and weight savings
- Improved temperature and power cycling
- High power density

Recommended replacement:
3x MMO90-12/14/16 io6
3x CLA110MB1200NA

Symbol	Conditions		Characteristic Values		
I_D, I_R	T_{VJ} = 125°C; $V_R = V_{RRM}$; $V_D = V_{DRM}$		≤	5	mA
V_T	I_T = 140 A; T_{VJ} = 25°C		≤	1.5	V
V_{T0}	For power-loss calculations only			0.85	V
r_T				5.2	mΩ
V_{GT}	V_D = 6 V;	T_{VJ} = 25°C	≤	1.5	V
		T_{VJ} = -40°C	≤	1.6	V
I_{GT}	V_D = 6 V;	T_{VJ} = 25°C	≤	100	mA
		T_{VJ} = -40°C	≤	200	mA
V_{GD}	T_{VJ}=125°C;	$V_D = {}^2/_3\ V_{DRM}$	≤	0.2	V
I_{GD}			≤	5	mA
I_L	T_{VJ} = 25°C; t_P = 10 µs I_G = 0.45 A; di_G/dt = 0.45 A/µs		≤	450	mA
I_H	T_{VJ} = 25°C; V_D = 6 V; R_{GK} = ∞		≤	200	mA
t_{gd}	T_{VJ} = 25°C; $V_D = ½\ V_{DRM}$ I_G = 0.45 A; di_G/dt = 0.45 A/µs		≤	2	µs
t_q	T_{VJ}=125°C; I_T = 20 A, t_P = 200 µs; di/dt = -10 A/µs V_R = 100 V; dv/dt = 15 V/µs; $V_D = {}^2/_3\ V_{DRM}$		typ.	150	µs
R_{thJC}	per thyristor; sine 180°el			0.6	K/W
	per module			0.1	K/W
R_{thJK}	per thyristor; sine 180°el			0.7	K/W
	per module			0.117	K/W
d_S	Creeping distance on surface			12.7	mm
d_A	Creepage distance in air			9.4	mm
a	Max. allowable acceleration			50	m/s^2

Dimensions in mm (1 mm = 0.0394")



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