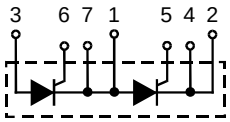
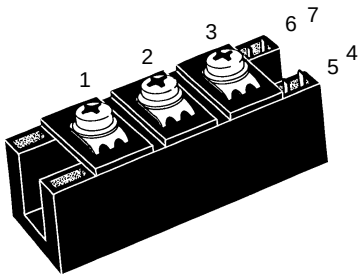
Thyristor Module

Preliminary data

I_{TRMS} = 2x300 A
I_{TAVM} = 2x128 A
$V_{RRM, DRM}$ = 800-1800 V

V_{RSM} V	V_{RRM} V_{DSM} V	Type
900	800	MCC 122-08io1
1300	1200	MCC 122-12io1
1500	1400	MCC 122-14io1
1700	1600	MCC 122-16io1
1900	1800	MCC 122-18io1





Symbol	Conditions		Maximum Ratings	
I_{TRMS}			300	A
I_{TAVM}	T_C = 85°C; 180° sine		128	A
I_{TSM}	T_{VJ} = 45°C	t = 10 ms (50 Hz), sine	3600	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	3850	A
	T_{VJ} = T_{VJM}	t = 10 ms (50 Hz), sine	3200	A
	V_R = 0	t = 8.3 ms (60 Hz), sine	3420	A
I^2dt	T_{VJ} = 45°C	t = 10 ms (50 Hz), sine	64800	A^2s
	V_R = 0	t = 8.3 ms (60 Hz), sine	62300	A^2s
	T_{VJ} = T_{VJM}	t = 10 ms (50 Hz), sine	51200	A^2s
	V_R = 0	t = 8.3 ms (60 Hz), sine	49100	A^2s
$(di/dt)_{cr}$	T_{VJ} = T_{VJM}	repetitive, I_T = 500 A	150	A/µs
	f = 50Hz, t_P = 200µs			
	V_D = $^2/_3$ V_{DRM}			
	I_G = 0.5 A	non repetitive, I_T = 500 A	500	A/µs
	di_G/dt = 0.5 A/µs			
$(dv/dt)_{cr}$	T_{VJ} = T_{VJM};	V_{DR} = $^2/_3$ V_{DRM}	1000	V/µs
	R_{GK} = ∞; method 1 (linear voltage rise)			
P_{GM}	T_{VJ} = T_{VJM}	t_P = 30 µs	120	W
	I_T = I_{TAVM}	t_P = 500 µs	60	W
P_{GAV}			8	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	3000	V~
	I_{ISOL} ≤ 1 mA	t = 1 s	3600	V~
M_d	Mounting torque (M6)		2.25-2.75/20-25	Nm/lb.in.
	Terminal connection torque (M6)		4.5-5.5/40-48	Nm/lb.in.
Weight	Typical including screws		125	g

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

Features

- International standard package
- Direct copper bonded Al_2O_3-ceramic base plate
- Planar passivated chips
- Isolation voltage 3600 V~
- UL registered, E 72873
- Keyed gate/cathode twin pins

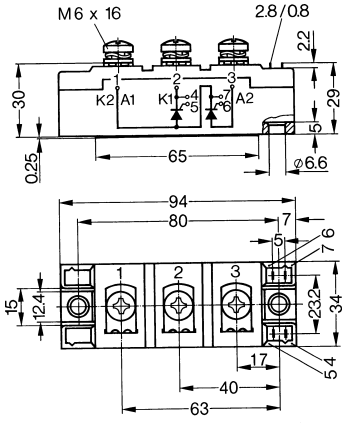
Applications

- Motor control
- Power converter
- Heat and temperature control for industrial furnaces and chemical processes
- Lighting control
- Contactless switches

Advantages

- Space and weight savings
- Simple mounting
- Improved temperature and power cycling
- Reduced protection circuits

Dimensions in mm (1 mm = 0.0394")



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Symbol	Conditions		Characteristic Values	
I_{RRM}, I_{DRM}	$T_{VJ} = T_{VJM}$; $V_R = V_{RRM}$; $V_D = V_{DRM}$		10	mA
V_T, V_F	I_T, I_F = 120 A; T_{VJ} = 25°C		1.13	V
V_{T0}	T_{VJ} = 125°C; For power-loss calculations only		0.85	V
r_T	$T_{VJ} = T_{VJM}$		2	mΩ
V_{GT}	V_D = 6 V;	T_{VJ} = 25°C	1.4	V
		T_{VJ} = -40°C	1.6	V
I_{GT}	V_D = 6 V;	T_{VJ} = 25°C	150	mA
		T_{VJ} = -40°C	200	mA
V_{GD}	$T_{VJ} = T_{VJM}$; $V_D = {}^2/_3 V_{DRM}$		0.2	V
I_{GD}			10	mA
I_L	T_{VJ} = 25°C; t_P = 10 µs, V_D = 6 V I_G = 0.45 A; di_G/dt = 0.45 A/µs		300	mA
I_H	T_{VJ} = 25°C; V_D = 6 V; $R_{GK} = \infty$		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	$T_{VJ} = T_{VJM}$; I_T = 120 A, t_P = 200 µs; -di/dt = 10 A/µs V_R = 100 V; dv/dt = 20 V/µs; $V_D = {}^2/_3 V_{DRM}$	typ.	150	µs
Q_S	$T_{VJ} = T_{VJM}$; I_T, I_F = 200 A, -di/dt = 50 A/µs		330	µC
I_{RM}			180	A
R_{thJC}	per thyristor/diode; DC current		0.2	K/W
	per module		0.1	K/W
R_{thCH}	per thyristor/diode; DC current	typ.	0.1	K/W
d_S	Creepage distance on surface		12.7	mm
d_A	Strike distance through air		9.6	mm
a	Maximum allowable acceleration		50	m/s^2

Optional accessories for modules
Keyed gate/cathode twin plugs with wire length = 350 mm, gate = yellow, cathode = red
Type **ZY 180L** (L = Left for pin pair 4/5) } UL Styles 1385,
Type **ZY 180R** (R = right for pin pair 6/7) } CSA Class 5851, File 41234