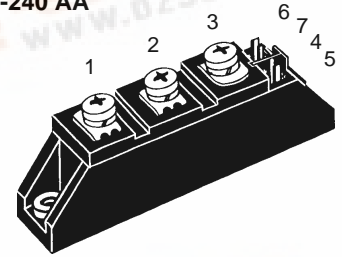


Thyristor Modules

V_{RSM}	V_{RRM}	Type
V_{DSM}	V_{DRM}	
V	V	
900	800	MCC 21-08io8 B
1300	1200	MCC 21-12io8 B
1500	1400	MCC 21-14io8 B
1700	1600	MCC 21-16io8 B



TO-240 AA



Symbol	Conditions	Maximum Ratings	
I_{TRMS}	$T_{VJ} = T_{VJM}$	33	A
I_{TAVM}	$T_C = 85^{\circ}C$; 180° sine	21	A
I_{TSM}	$T_{VJ} = 45^{\circ}C$; $V_R = 0$	t = 10 ms (50 Hz), sine	320 A
		t = 8.3 ms (60 Hz), sine	350 A
I^2dt	$T_{VJ} = 45^{\circ}C$; $V_R = 0$	t = 10 ms (50 Hz), sine	500 A ² s
		t = 8.3 ms (60 Hz), sine	520 A ² s
$(di/dt)_{cr}$	$T_{VJ} = T_{VJM}$ f = 50Hz, t _p = 200μs $V_D = \frac{2}{3} V_{DRM}$ $I_G = 0.45 A$ di _G /dt = 0.45 A/μs	repetitive, I _T = 45 A	150 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} = ∞; method 1 (linear voltage rise)	1000	V/μs
P_{GM}	$T_{VJ} = T_{VJM}$ I _T = I _{TAVM}	t _p = 30 μs	10 W
		t _p = 300 μs	5 W
P_{GAV}		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 I _{ISOL} ≤ 1 mA	t = 1 min	3000 V~
		t = 1 s	3600 V~
M_d	Mounting torque (M5)	2.5-4.0/22-35	Nm/lb.in.
	Terminal connection torque (M5)	2.5-4.0/22-35	Nm/lb.in.
Weight	Typical including screws	90	g

Features

- International standard package, JEDEC TO-240 AA
- Direct copper bonded Al₂O₃ -ceramic base plate
- Planar passivated chips
- Isolation voltage 3600 V~
- UL registered, E 72873
- Gate-cathode twin pins for version 1B

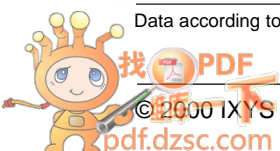
Applications

- DC motor control
- Softstart AC motor controller
- Light, heat and temperature control

Advantages

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

Data according to DIN/IEC 747 and refer to a single thyristor unless otherwise stated.



Symbol	Conditions	Characteristic Values	
I_{RRM}, I_{DRM}	$T_{VJ} = T_{VJM}; V_R = V_{RRM}; V_D = V_{DRM}$	5 mA	
V_T	$I_T = 45 A; T_{VJ} = 25^\circ C$	1.6 V	
V_{T0}	For power-loss calculations only ($T_{VJ} = 125^\circ C$)	0.85 V	
r_T		15 mΩ	
V_{GT}	$V_D = 6 V;$ $T_{VJ} = 25^\circ C$ $T_{VJ} = -40^\circ C$	1.0 V 1.2 V	
I_{GT}	$V_D = 6 V;$ $T_{VJ} = 25^\circ C$ $T_{VJ} = -40^\circ C$	65 mA 80 mA	
V_{GD} I_{GD}	$T_{VJ} = T_{VJM}; V_D = \frac{2}{3} V_{DRM}$	0.2 V 5 mA	
I_L	$T_{VJ} = 25^\circ C; t_p = 10 \mu s; V_D = 6 V$ $I_G = 0.3 A; di_G/dt = 0.3 A/\mu s$	150 mA	
I_H	$T_{VJ} = 25^\circ C; V_D = 6 V; R_{GK} = \infty$	100 mA	
t_{gd}	$T_{VJ} = 25^\circ C; V_D = \frac{1}{2} V_{DRM}$ $I_G = 0.3 A; di_G/dt = 0.3 A/\mu s$	2 μs	
t_q	$T_{VJ} = T_{VJM}; I_T = 15 A, t_p = 300 \mu s; -di/dt = 10 A/\mu s$ typ. $V_R = 100 V; dv/dt = 20 V/\mu s; V_D = \frac{2}{3} V_{DRM}$	150 μs	
I_{RM}	$T_{VJ} = T_{VJM}; I_T = 30 A, -di/dt = 0.3 A/\mu s$	4 A	
R_{thJC}	per thyristor; DC current	} other values see Fig. 8/9	1.1 K/W
R_{thJK}	per thyristor; DC current		0.55 K/W
	per module		1.3 K/W
	per module		0.65 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 module-type MCC 23 version 1 B

Keyed gate/cathode twin plugs with wire length = 350 mm, gate = yellow, cathode = red

Type **ZY 200L** (L = Left for pin pair 4/5) } UL 758, style 1385,

Type **ZY 200R** (R = right for pin pair 6/7) } CSA class 5851, guide 460-1-1

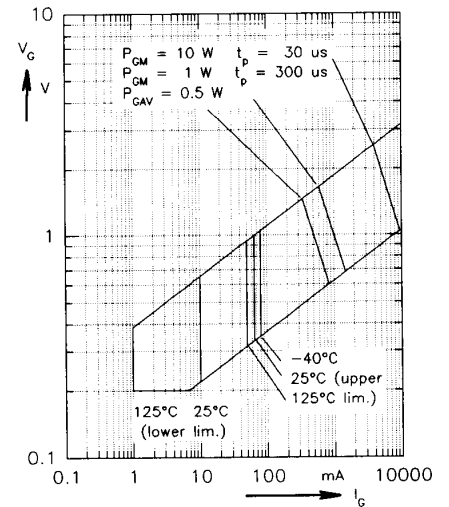


Fig. 1 Gate trigger characteristics

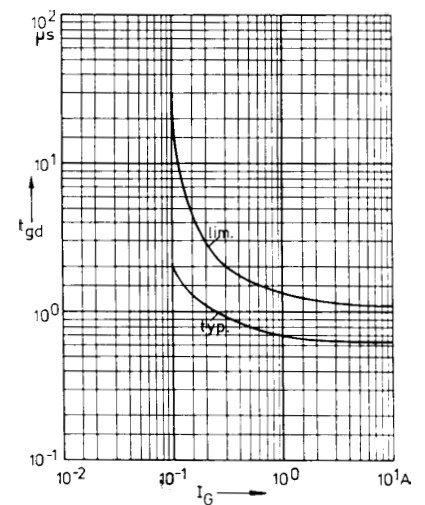


Fig. 2 Gate trigger delay time

Dimensions in mm (1 mm = 0.0394")

