

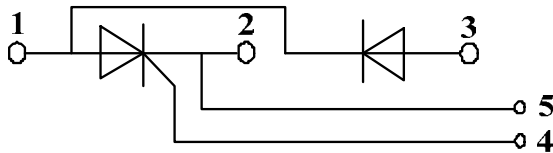
**Features**

- Lead Free Finish/RoHS Compliant (NOTE 1)("P" Suffix designates RoHS Compliant. See ordering information)
- International standard package
- Heat transfer through aluminum oxide DBC ceramic isolated metal baseplate
- Glass passivated chip
- Simple Mounting

**Applications**

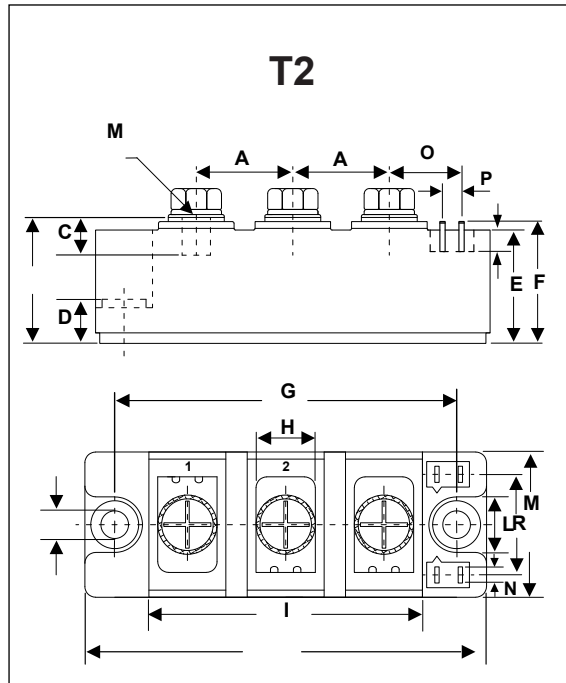
- Power Converters
- Lighting Control
- DC Motor Control and Drives
- Heat and temperature control

MCC Part Number	V <sub>RRM</sub>	V <sub>RSM</sub>
MT200CB08T2	800V	900V
MT200CB12T2	1200V	1300V
MT200CB16T2	1600V	1700V
MT200CB18T2	1800V	1900V



Note:1. High Temperature Solder Exemptions Applied, See EU Directive Annex 7a.

**200 Amp  
THYRISTOR/DIODE  
MODULE  
800~1800 Volts**



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MA	MIN	MA	
A	0 8	0 1	22 0	2 0	
	1 1	1 1	2 0	0 0	
C	0	0	8 0	0	
D	0 2	0	8 00	8 0	
E	1 0 1	1 0	2 0	2 0	
F	1 1 0	1 1	28 0	2 0	
G	0 120	0 1 0	0	80 0	
H	0 00	0 2	12 0	1 0	
I	2 01	2 1	0	0	
	8	1	0	0	
	0 2		0		
L	0 00	0 2	12 0	1 0	
M	1 2	1 0	0	0	
N	0 0 2	0 11	0 8	2 8	
O	0	0 00	1 00	18 00	
P	0 18	0 20	0	0	
	0 18	0 20	0	0	
R	0 02	0 2	22 0	2 0	

**◆ Diode**
**Maximum Ratings**

Symbol	Item	Conditions	Values	Units
ID	Output Current(D.C.)	Tc=85°C	200	A
IFSM	Surge forward current	t=10mS Tvj =45°C	6800	A
i <sup>2</sup> t	Circuit Fusing Consideration		231200	A <sup>2</sup> s
Visol	Isolation Breakdown Voltage(R.M.S)	a.c.50HZ;r.m.s.;1min	3000	V
Tvj	Operating Junction Temperature		-40 to +125	°C
Tstg	Storage Temperature		-40 to +125	°C
Mt	Mounting Torque	To terminals(M6)	3±15%	Nm
Ms		To heatsink(M6)	5±15%	Nm
Weight	Module (Approximately)		165	g

**Thermal Characteristics**

Symbol	Item	Conditions	Values	Units
Rth(j-c)	Thermal Impedance, max.	Junction to Case	0.08	°C/W
Rth(c-s)	Thermal Impedance, max.	Case to Heatsink	0.05	°C/W

**Electrical Characteristics**

Symbol	Item	Conditions	Values			Units
			Min.	Typ.	Max.	
VFM	Forward Voltage Drop, max.	T=25°C IF =620A			1.70	V
I <sub>RRM</sub>	Repetitive Peak Reverse Current, max.	Tvj =25°C VRD=VRRM Tvj =125°C VRD=VRRM		≤0.5		mA mA

◆ Thyristor

Maximum Ratings

Symbol	Item	Conditions	Values	Units
$I_{TAV}$	Average On-State Current	Sine 180°; $T_c=85^\circ\text{C}$	200	A
$I_{TSM}$	Surge On-State Current	$T_{VJ}=45^\circ\text{C}$ $t=10\text{ms}$ , sine $T_{VJ}=125^\circ\text{C}$ $t=10\text{ms}$ , sine	5500 5000	A
$i^2t$	Circuit Fusing Consideration	$T_{VJ}=45^\circ\text{C}$ $t=10\text{ms}$ , sine $T_{VJ}=125^\circ\text{C}$ $t=10\text{ms}$ , sine	151000 125000	A <sup>2</sup> s
Visol	Isolation Breakdown Voltage(R.M.S)	a.c.50HZ;r.m.s.;1min	3000	V
$T_{vj}$	Operating Junction Temperature		-40 to +130	°C
$T_{stg}$	Storage Temperature		-40 to +125	°C
$M_t$	Mounting Torque	To terminals(M6)	$3 \pm 15\%$	Nm
$M_s$		To heatsink(M6)	$5 \pm 15\%$	Nm
$di/dt$	Critical Rate of Rise of On-State Current	$T_{VJ}=T_{VJM}$ , $2/3V_{DRM}$ , $I_G=500\text{mA}$ $T_r < 0.5\mu\text{s}$ , $t_p > 6\mu\text{s}$	200	A/us
$dv/dt$	Critical Rate of Rise of Off-State Voltage, min.	$T_J=T_{VJM}$ , $2/3V_{DRM}$ linear voltage rise	1000	V/us
a	Maximum allowable acceleration		50	$\text{m/s}^2$

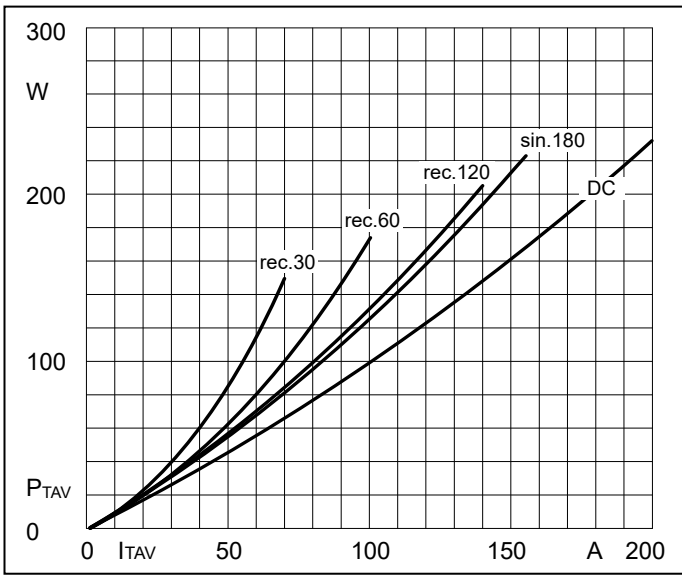
Thermal Characteristics

Symbol	Item	Conditions	Values	Units
$R_{th(j-c)}$	Thermal Impedance, max.	Junction to Case	0.16	°C/W
$R_{th(c-s)}$	Thermal Impedance, max.	Case to Heatsink	0.10	°C/W

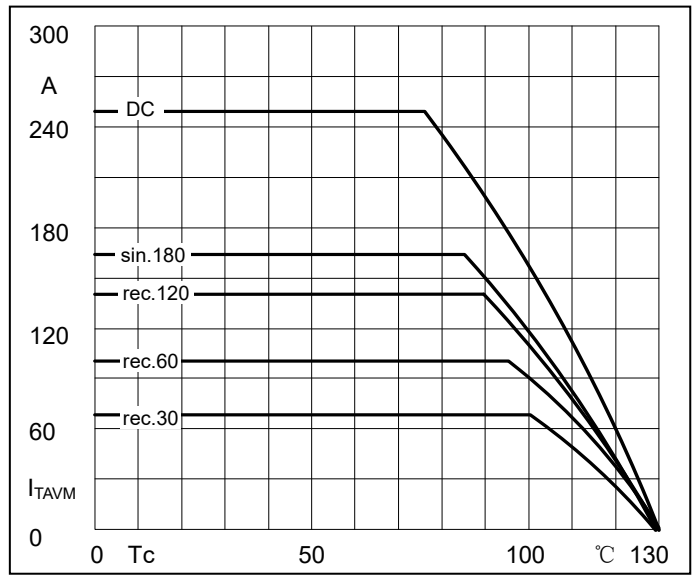
Electrical Characteristics

Symbol	Item	Conditions	Values		Units
$V_{TM}$	Peak On-State Voltage, max.	$T=25^\circ\text{C}$ $I_T=620\text{A}$		1.70	V
$I_{RRM}/I_{DRM}$	Repetitive Peak Reverse Current, max. / Repetitive Peak Off-State Current, max.	$T_{VJ}=T_{VJM}$ , $V_R=V_{RRM}$ , $V_D=V_{DRM}$		40	mA
$V_{TO}$	On state threshold voltage	For power-loss calculations only ( $T_{VJ}=125^\circ\text{C}$ )		0.85	V
$r_T$	Value of on-state slope resistance. max	$T_{VJ}=T_{VJM}$		1.5	mΩ
$V_{GT}$	Gate Trigger Voltage, max.	$T_{VJ}=25^\circ\text{C}$ , $V_D=6\text{V}$		3	V
$I_{GT}$	Gate Trigger Current, max.	$T_{VJ}=25^\circ\text{C}$ , $V_D=6\text{V}$		200	mA
$V_{GD}$	Non-triggering gate voltage, max.	$T_{VJ}=125^\circ\text{C}$ , $V_D=2/3V_{DRM}$		0.25	V
$I_{GD}$	Non-triggering gate current, max.	$T_{VJ}=125^\circ\text{C}$ , $V_D=2/3V_{DRM}$		10	mA
$I_L$	Latching current, max.	$T_{VJ}=25^\circ\text{C}$ , $R_G=33\Omega$	300	1000	mA
$I_H$	Holding current, max.	$T_{VJ}=25^\circ\text{C}$ , $V_D=6\text{V}$	150	400	mA
tgd	Gate controlled delay time	$T_{VJ}=25^\circ\text{C}$ , $I_G=1\text{A}$ , $di/dt=1\text{A/us}$	1		us
tq	Circuit commutated turn-off time	$T_{VJ}=T_{VJM}$	100		us

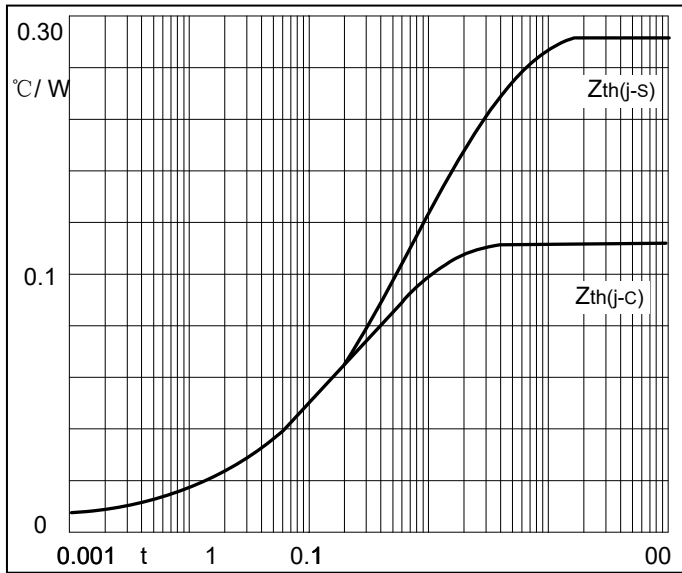
**Performance Curves**



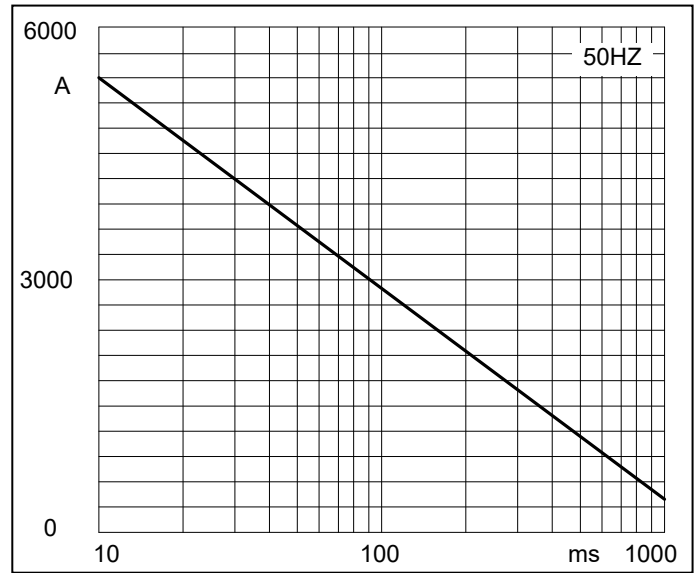
**Fig1. Power dissipation**



**Fig2. Forward Current Derating Curve**

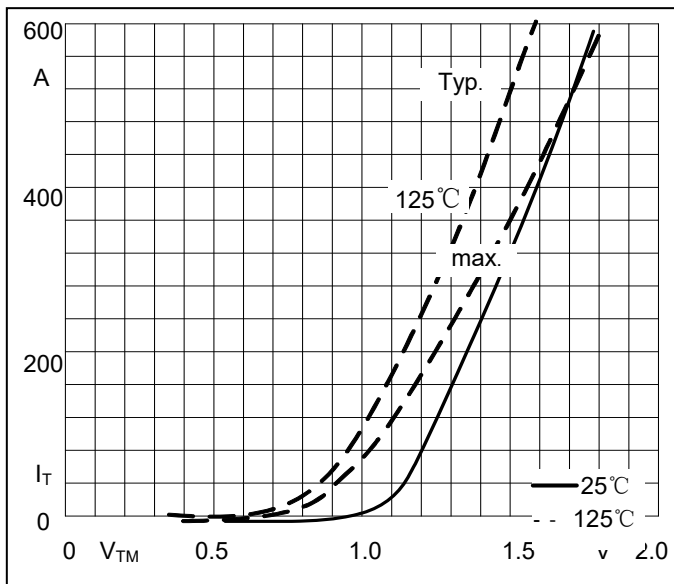


**Fig3. Transient thermal impedance**

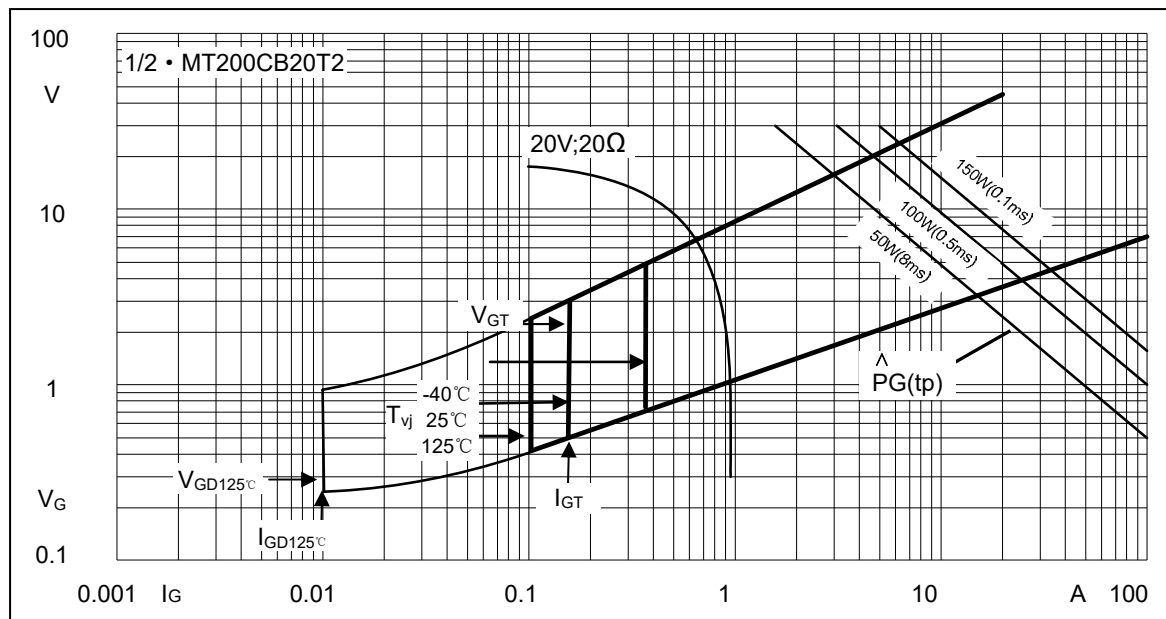


**Fig4. Max Non-Repetitive Forward Surge Current**

**Performance Curves**



**Fig5. Forward Characteristics**



**Fig6. Gate trigger Characteristics**

## Ordering Information

Device	Packing
Part Number-BP	Bulk: 8PCS/BOX ;80PCS/CTN

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