

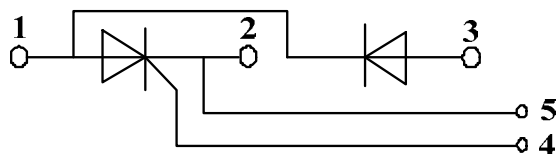
Features

- 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

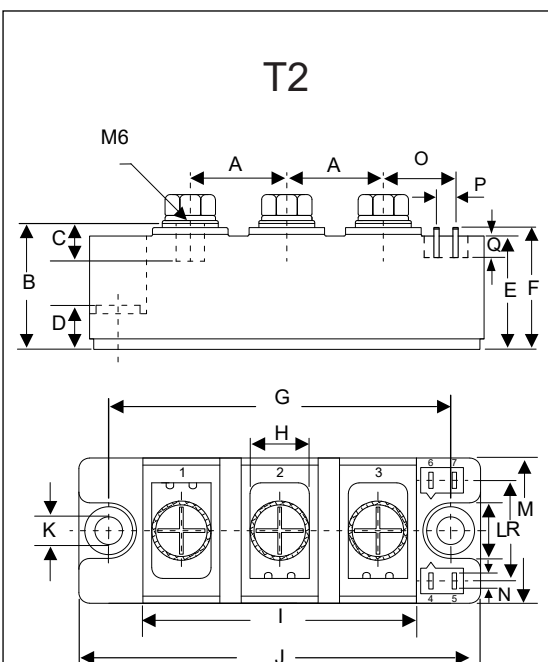
- Power Converters
- Lighting Control
- DC Motor Control and Drives
- Heat and temperature control

MCC Part Number	V_{RRM}	V_{RSM}
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



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.894	0.917	22.50	23.50	
B	1.169	1.193	29.50	30.50	
C	0.343	0.366	8.50	9.50	
D	0.323	0.343	8.00	8.90	
E	1.051	1.075	26.50	27.50	
F	1.130	1.154	28.50	29.50	
G	0.120	0.130	79.50	80.50	
H	0.500	0.524	12.50	13.50	
I	2.501	2.531	63.50	64.50	
J	3.689	3.713	93.50	94.50	
K	0.256		6.50		Φ
L	0.500	0.524	12.50	13.50	
M	1.327	1.350	33.50	34.50	
N	0.032X0.11		0.8X2.8		
O	0.677	0.700	17.00	18.00	
P	0.185	0.209	4.50	5.50	
Q	0.185	0.209	4.50	5.50	
R	0.902	0.925	22.70	23.70	

◆Diode

Maximum Ratings

Symbol	Item	Conditions	Values	Units
I_D	Output Current(D.C.)	$T_c=85^{\circ}\text{C}$	200	A
I_{FSM}	Surge forward current	$t=10\text{mS } T_{vj}=45^{\circ}\text{C}$	6800	A
i^2t	Circuit Fusing Consideration		231200	A^2s
V_{isol}	Isolation Breakdown Voltage(R.M.S)	a.c.50HZ;r.m.s.;1min	3000	V
T_{vj}	Operating Junction Temperature		-40 to +125	$^{\circ}\text{C}$
T_{stg}	Storage Temperature		-40 to +125	$^{\circ}\text{C}$
M_t	Mounting Torque	To terminals(M6)	3±15%	Nm
M_s		To heatsink(M6)	5±15%	Nm
Weight	Module (Approximately)		165	g

Thermal Characteristics

Symbol	Item	Conditions	Values	Units
$R_{th(j-c)}$	Thermal Impedance, max.	Junction to Case	0.08	$^{\circ}\text{C/W}$
$R_{th(c-s)}$	Thermal Impedance, max.	Case to Heatsink	0.05	$^{\circ}\text{C/W}$

Electrical Characteristics

Symbol	Item	Conditions	Values			Units
			Min.	Typ.	Max.	
V_{FM}	Forward Voltage Drop, max.	$T=25^{\circ}\text{C } I_F=620\text{A}$			1.70	V
I_{RRM}	Repetitive Peak Reverse Current, max.	$T_{vj}=25^{\circ}\text{C } V_{RD}=V_{RRM}$ $T_{vj}=125^{\circ}\text{C } V_{RD}=V_{RRM}$	≤ 0.5 ≤ 9			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 ² 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	$^{\circ}\text{C}$
T_{stg}	Storage Temperature		-40 to +125	$^{\circ}\text{C}$
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/ μs
dv/dt	Critical Rate of Rise of Off-State Voltage, min.	$T_J=T_{VJM}$, $2/3V_{DRM}$ linear voltage rise	1000	V/ μs
a	Maximum allowable acceleration		50	m/s^2

Thermal Characteristics

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

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	m Ω
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	$T_{VJ}=25^{\circ}\text{C}$, $I_G=1\text{A}$, $di/dt=1\text{A}/\mu\text{s}$	1			μs
tq	Circuit commutated turn-off time	$T_{VJ}=T_{VJM}$	100			μs

Performance Curves

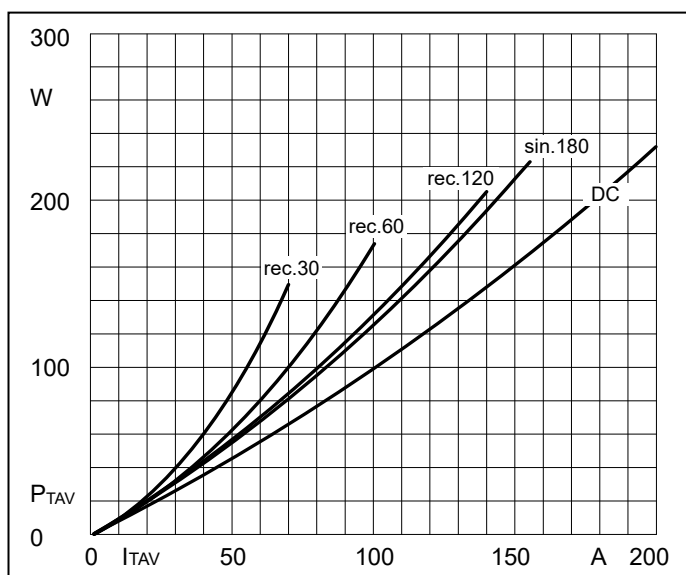


Fig1. Power dissipation

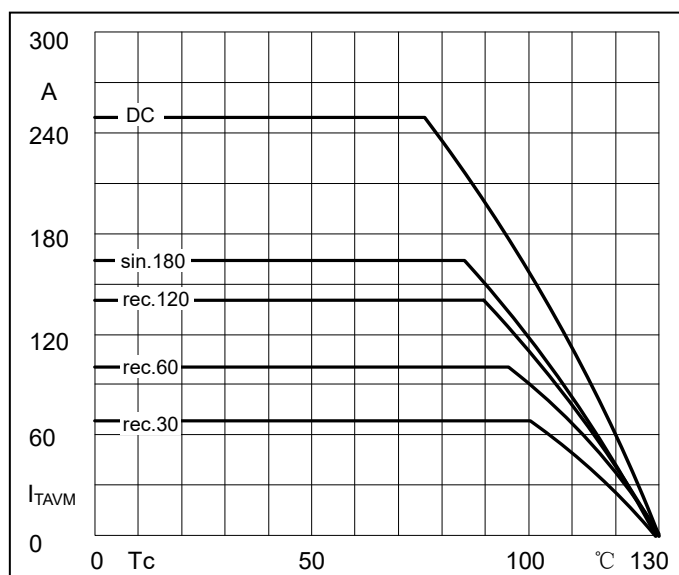


Fig2. Forward Current Derating Curve

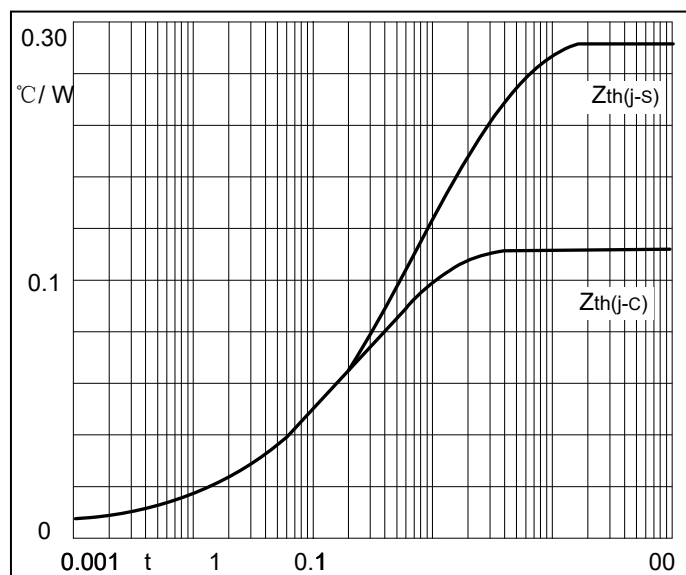


Fig3. Transient thermal impedance

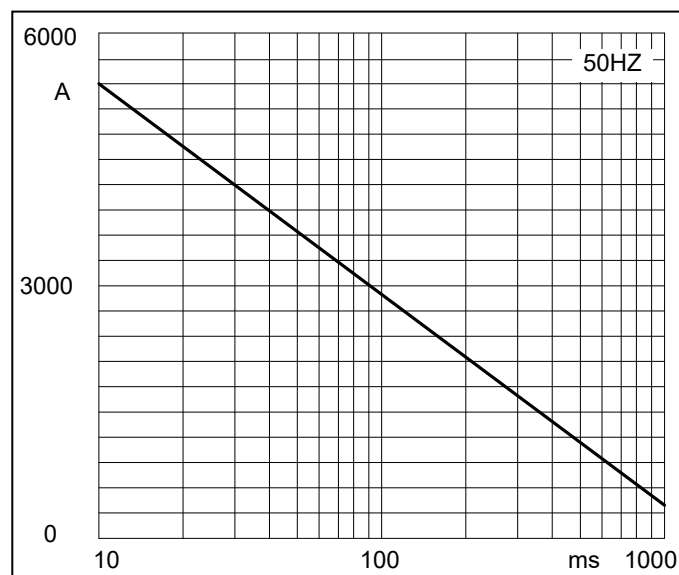


Fig4. Max Non-Repetitive Forward Surge Current

Performance Curves

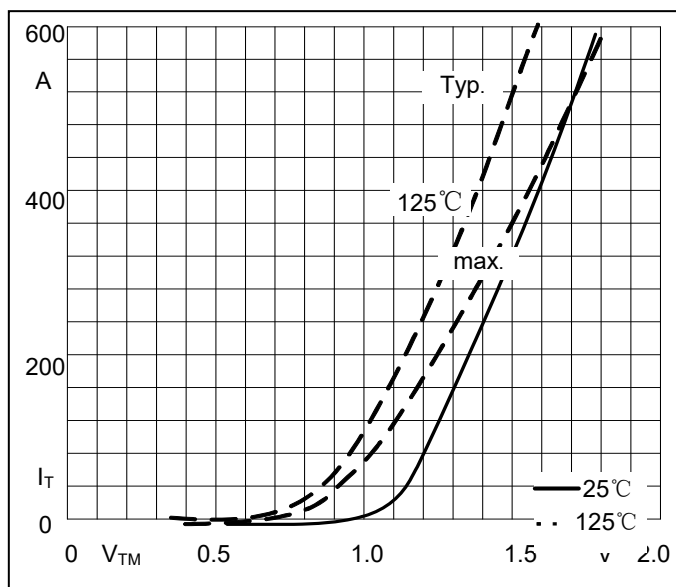


Fig5. Forward Characteristics

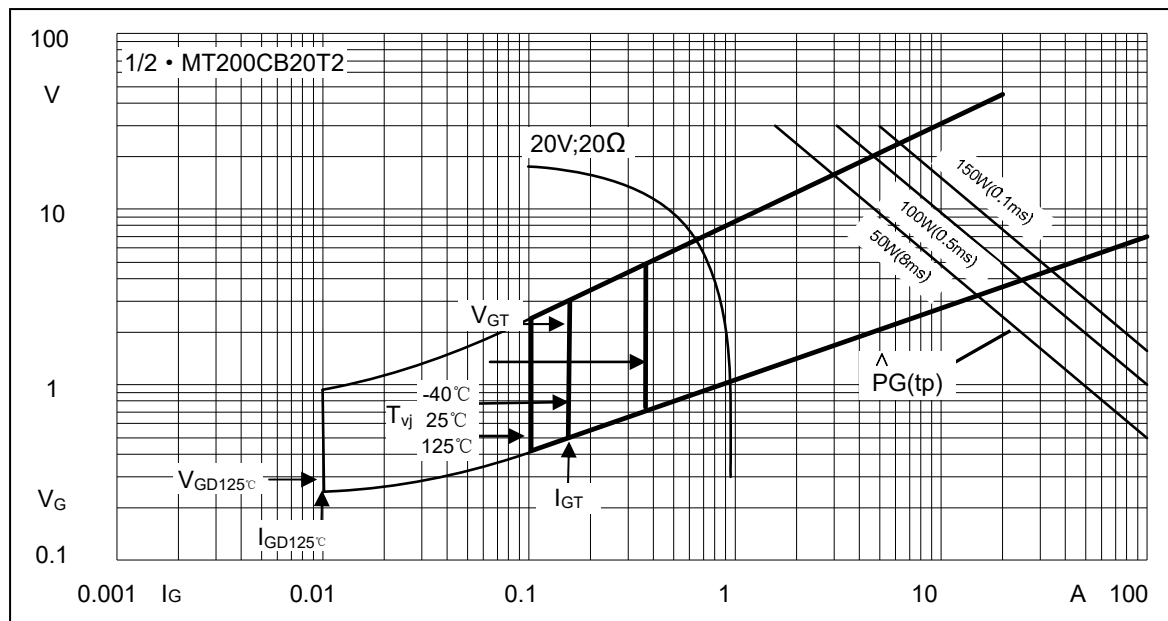


Fig6. Gate trigger Characteristics

Ordering Information

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

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