



Micro Commercial Components



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MT200CB08T2
MT200CB12T2
MT200CB16T2
MT200CB18T2

Features

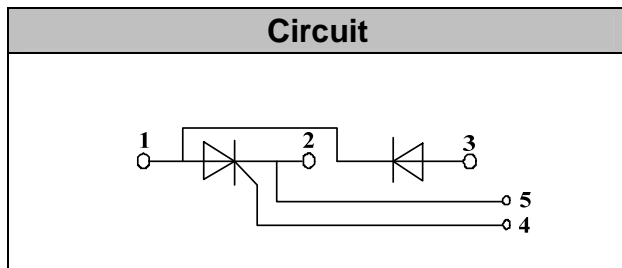
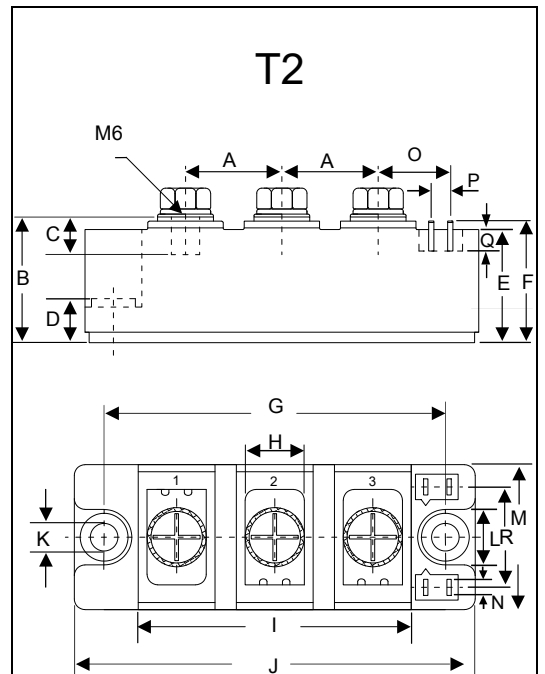
- Lead Free Finish/RoHS Compliant (NOTE 1) ("P" Suffix designates RoHS Compliant. See ordering information)
- International standard package
- Heat transfer through aluminum oxide DBC ceramic isolated metal baseplate
- Glass passivated chip
- Simple Mounting

Applications

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



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		∅
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	

Module Type

TYPE	VRRM/VDRM	VRSM
MT200CB08T2	800V	900V
MT200CB12T2	1200V	1300V
MT200CB16T2	1600V	1700V
MT200CB18T2	1800V	1900V

◆Diode

Maximum Ratings

Symbol	Item	Conditions	Values	Units
I _D	Output Current(D.C.)	T _c =85°C	200	A
I _{FSM}	Surge forward current	t=10mS T _{vj} =45°C	6800	A
i ² t	Circuit Fusing Consideration		231200	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 +125	°C
T _{stg}	Storage Temperature		-40 to +125	°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	°C/W
R _{th(c-s)}	Thermal Impedance, max.	Case to Heatsink	0.05	°C/W

Electrical Characteristics

Symbol	Item	Conditions	Values			Units
			Min.	Typ.	Max.	
V _{FM}	Forward Voltage Drop, max.	T=25°C I _F =620A			1.70	V
I _{RRM}	Repetitive Peak Reverse Current, max.	T _{vj} =25°C V _{RD} =V _{RRM} T _{vj} =125°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°; $T_C=85^{\circ}C$	200	A
I_{TSM}	Surge On-State Current	$T_{VJ}=45^{\circ}C$ t=10ms, sine $T_{VJ}=125^{\circ}C$ t=10ms, sine	5500 5000	A
i^2t	Circuit Fusing Consideration	$T_{VJ}=45^{\circ}C$ t=10ms, sine $T_{VJ}=125^{\circ}C$ t=10ms, sine	151000 125000	A2s
Visol	Isolation Breakdown Voltage(R.M.S)	a.c.50HZ;r.m.s.;1min	3000	V
T_{vj}	Operating Junction Temperature		-40 to +130	$^{\circ}C$
T_{stg}	Storage Temperature		-40 to +125	$^{\circ}C$
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	$T_{VJ}=T_{VJM}$, $2/3V_{DRM}$, $I_G=500mA$ $Tr<0.5\mu s$, $tp>6\mu s$	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	$^{\circ}C/W$
$R_{th(c-s)}$	Thermal Impedance, max.	Case to Heatsink	0.10	$^{\circ}C/W$

Electrical Characteristics

Symbol	Item	Conditions	Values		Units
V_{TM}	Peak On-State Voltage, max.	$T=25^{\circ}C$ $I_T=620A$		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 ($T_{VJ}=125^{\circ}C$)		0.85	V
r_T	Value of on-state slope resistance. max	$T_{VJ}=T_{VJM}$		1.5	$m\Omega$
V_{GT}	Gate Trigger Voltage, max.	$T_{VJ}=25^{\circ}C$, $V_D=6V$		3	V
I_{GT}	Gate Trigger Current, max.	$T_{VJ}=25^{\circ}C$, $V_D=6V$		200	mA
V_{GD}	Non-triggering gate voltage, max.	$T_{VJ}=125^{\circ}C$, $V_D=2/3V_{DRM}$		0.25	V
I_{GD}	Non-triggering gate current, max.	$T_{VJ}=125^{\circ}C$, $V_D=2/3V_{DRM}$		10	mA
I_L	Latching current, max.	$T_{VJ}=25^{\circ}C$, $R_G=33\Omega$	300	1000	mA
I_H	Holding current, max.	$T_{VJ}=25^{\circ}C$, $V_D=6V$	150	400	mA
tg _d	Gate controlled delay time	$T_{VJ}=25^{\circ}C$, $I_G=1A$, $diG/dt=1A/\mu s$	1		μs
tq	Circuit commutated turn-off time	$T_{VJ}=T_{VJM}$	100		μs

Performance Curves

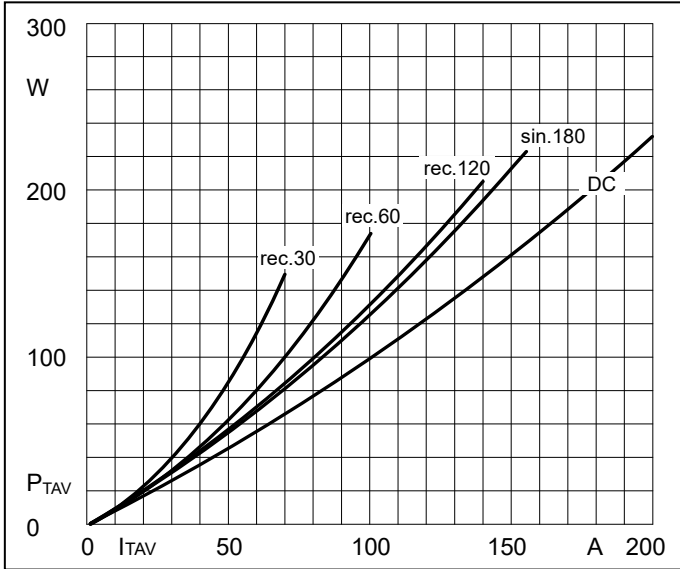


Fig1. Power dissipation

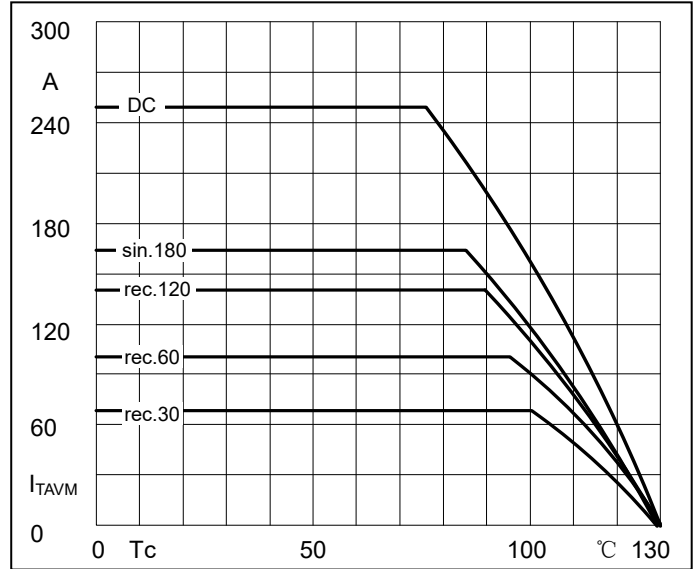


Fig2. Forward Current Derating Curve

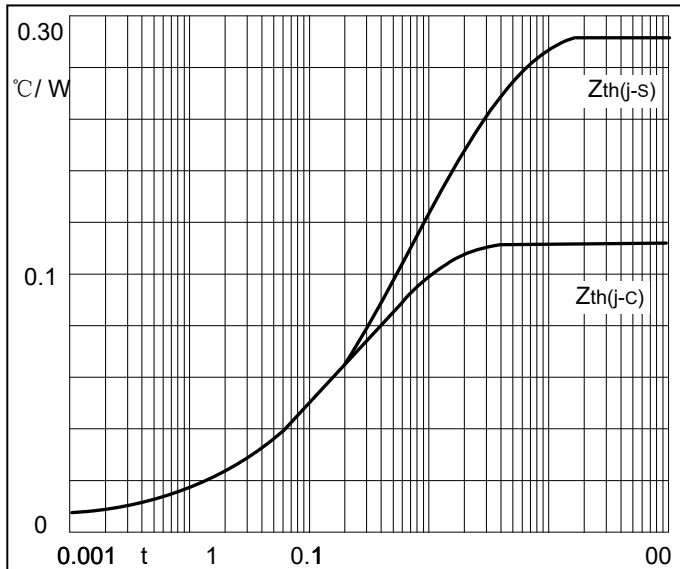


Fig3. Transient thermal impedance

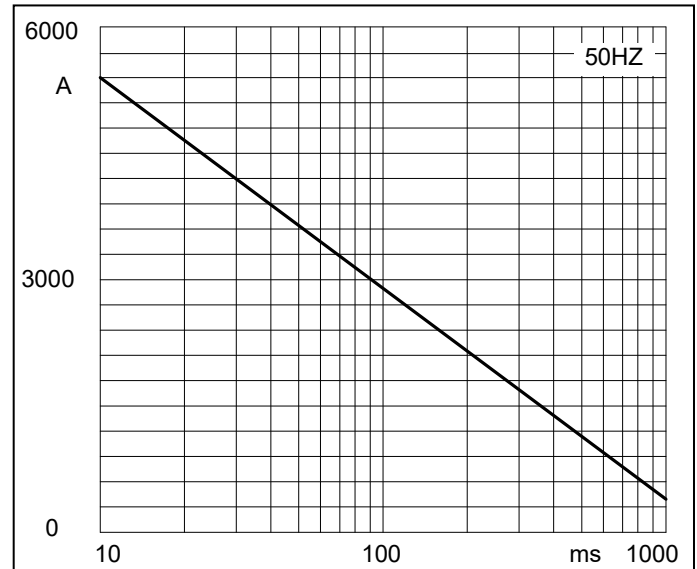


Fig4. Max Non-Repetitive Forward Surge Current

Performance Curves

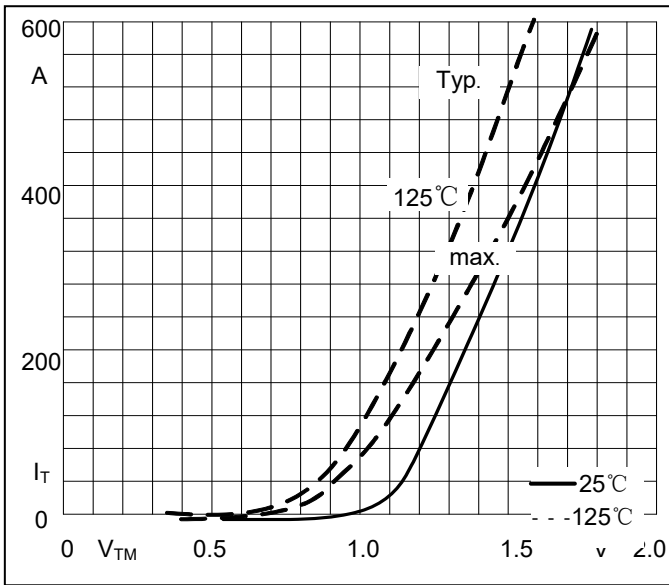


Fig5. Forward Characteristics

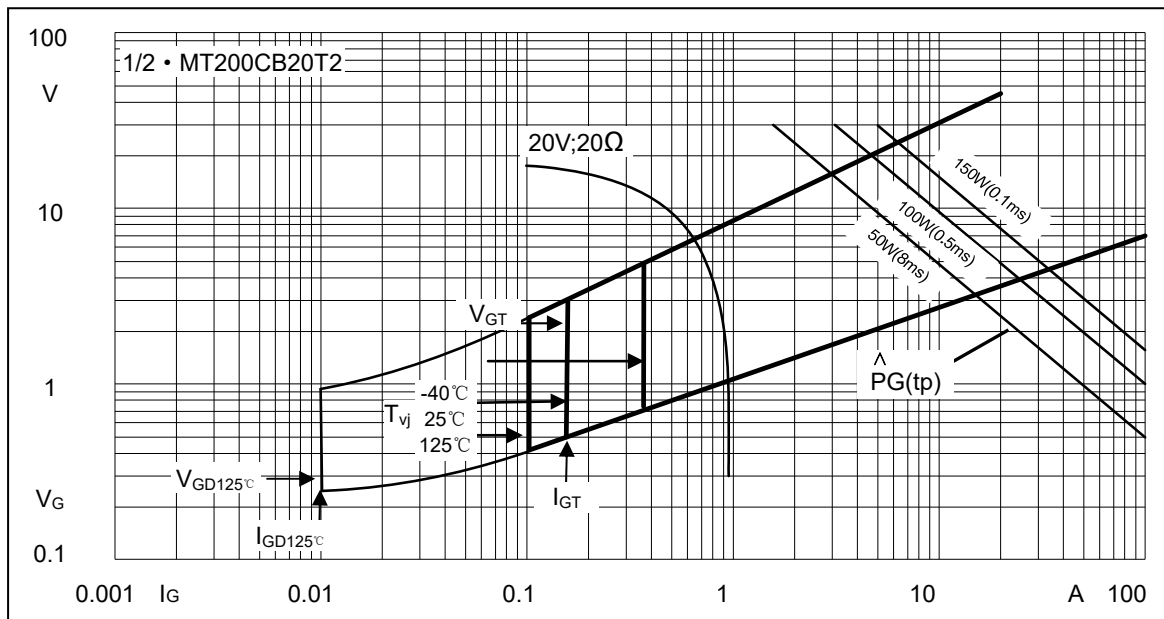


Fig6. Gate trigger Characteristics



Ordering Information :

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

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