



Micro Commercial Components



Micro Commercial Components  
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**MT200C08T2**  
**MT200C12T2**  
**MT200C16T2**  
**MT200C18T2**

## Features

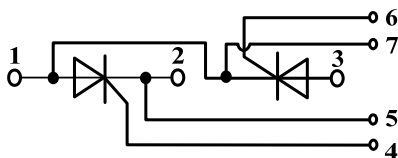
- Lead Free Finish/RoHS Compliant (NOTE 1) ("P" Suffix designates RoHS Compliant. See ordering information)
- International standard package
- Heat transfer through aluminum oxide DBC ceramic isolated metal baseplate
- Glass passivated chip
- Simple Mounting

## Applications

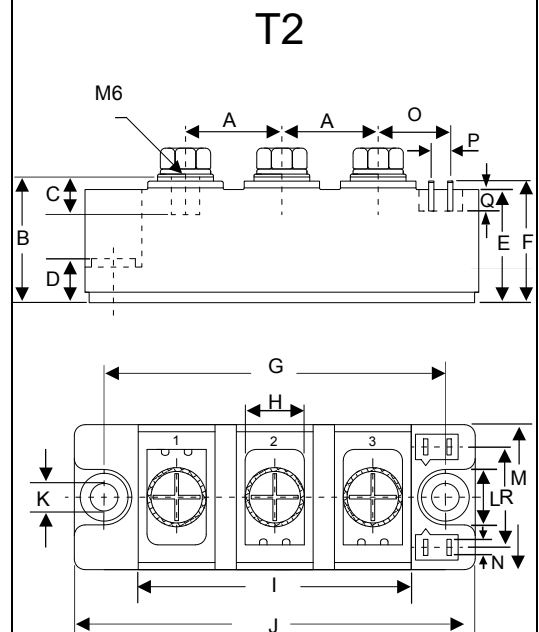
- Power Converters
- Lighting Control
- DC Motor Control and Drives
- Heat and temperature control



**Circuit**



**200 Amp**  
**THYRISTOR 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    |       | Ø    |
| 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  | VRSM  |
|------------|-------|-------|
| MT200C08T2 | 800V  | 900V  |
| MT200C12T2 | 1200V | 1300V |
| MT200C16T2 | 1600V | 1700V |
| MT200C18T2 | 1800V | 1900V |

## Maximum Ratings

| Symbol    | Conditions                                                                                                | Values           | Units              |
|-----------|-----------------------------------------------------------------------------------------------------------|------------------|--------------------|
| $I_{TAV}$ | Sine 180°; $T_c=85^{\circ}\text{C}$                                                                       | 200              | A                  |
| $I_{TSM}$ | $T_{VJ}=45^{\circ}\text{C}$ $t=10\text{ms}$ , sine<br>$T_{VJ}=125^{\circ}\text{C}$ $t=10\text{ms}$ , sine | 5500<br>5000     | A                  |
| $i^2t$    | $T_{VJ}=45^{\circ}\text{C}$ $t=10\text{ms}$ , sine<br>$T_{VJ}=125^{\circ}\text{C}$ $t=10\text{ms}$ , sine | 151000<br>125000 | A <sup>2</sup> s   |
| Visol     | a.c.50HZ;r.m.s.;1min                                                                                      | 3000             | V                  |
| $T_{vj}$  |                                                                                                           | -40 to 130       | $^{\circ}\text{C}$ |
| $T_{stg}$ |                                                                                                           | -40 to 125       | $^{\circ}\text{C}$ |
| Mt        | To terminals(M6)                                                                                          | $3 \pm 15\%$     | Nm                 |
| Ms        | To heatsink(M6)                                                                                           | $5 \pm 15\%$     | Nm                 |
| di/dt     | $T_{VJ}=T_{VJM}$ , $2/3V_{DRM}$ , $I_G=500\text{mA}$<br>$T_r<0.5\mu\text{s}$ , $t_p>6\mu\text{s}$         | 200              | A/ $\mu\text{s}$   |
| dv/dt     | $T_J=T_{VJM}$ , $2/3V_{DRM}$ , linear voltage rise                                                        | 1000             | V/ $\mu\text{s}$   |
| a         | Maximum allowable acceleration                                                                            | 50               | $\text{m/s}^2$     |
| Weight    | Module(Approximately)                                                                                     | 165              | g                  |

## Thermal Characteristics

| Symbol        | Conditions                    | Values    | Units                |
|---------------|-------------------------------|-----------|----------------------|
| $R_{th(j-c)}$ | Cont.; thyristor / per module | 0.16/0.08 | $^{\circ}\text{C/W}$ |
| $R_{th(c-s)}$ | per thyristor / per module    | 0.1/0.05  | $^{\circ}\text{C/W}$ |

| Symbol            | Conditions                                                                      | Values |     |      | Units            |
|-------------------|---------------------------------------------------------------------------------|--------|-----|------|------------------|
|                   |                                                                                 |        |     |      |                  |
| $V_{TM}$          | $T=25^{\circ}\text{C}$ $I_{TM}=620\text{A}$                                     |        |     | 1.7  | V                |
| $I_{RRM}/I_{DRM}$ | $T_{VJ}=T_{VJM}$ , $V_R=V_{RRM}$ , $V_D=V_{DRM}$                                |        |     | 40   | mA               |
| $V_{TO}$          | For power-loss calculations only ( $T_{VJ}=125^{\circ}\text{C}$ )               |        |     | 0.85 | V                |
| $r_T$             | $T_{VJ}=T_{VJM}$                                                                |        |     | 1.5  | $\text{m}\Omega$ |
| $V_{GT}$          | $T_{VJ}=25^{\circ}\text{C}$ , $V_D=6\text{V}$                                   |        |     | 3    | V                |
| $I_{GT}$          | $T_{VJ}=25^{\circ}\text{C}$ , $V_D=6\text{V}$                                   |        |     | 200  | mA               |
| $V_{GD}$          | $T_{VJ}=125^{\circ}\text{C}$ , $V_D=2/3V_{DRM}$                                 |        |     | 0.25 | V                |
| $I_{GD}$          | $T_{VJ}=125^{\circ}\text{C}$ , $V_D=2/3V_{DRM}$                                 |        |     | 10   | mA               |
| $I_L$             | $T_{VJ}=25^{\circ}\text{C}$ , $R_G=33\Omega$                                    |        | 300 | 1000 | mA               |
| $I_H$             | $T_{VJ}=25^{\circ}\text{C}$ , $V_D=6\text{V}$                                   |        | 150 | 400  | mA               |
| tgδ               | $T_{VJ}=25^{\circ}\text{C}$ , $I_G=1\text{A}$ , $dI_G/dt=1\text{A}/\mu\text{s}$ | 1      |     |      | $\mu\text{s}$    |
| tq                | $V_J=T_{VJM}$                                                                   | 100    |     |      | $\mu\text{s}$    |

## Performance Curves

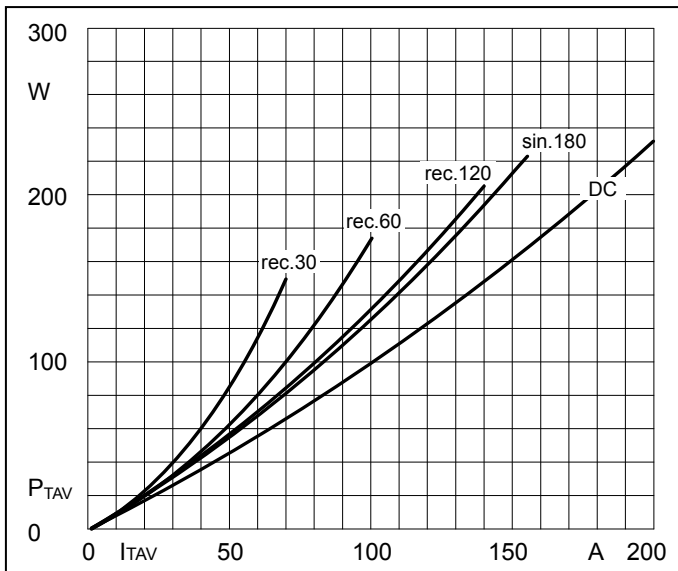


Fig1. Power dissipation

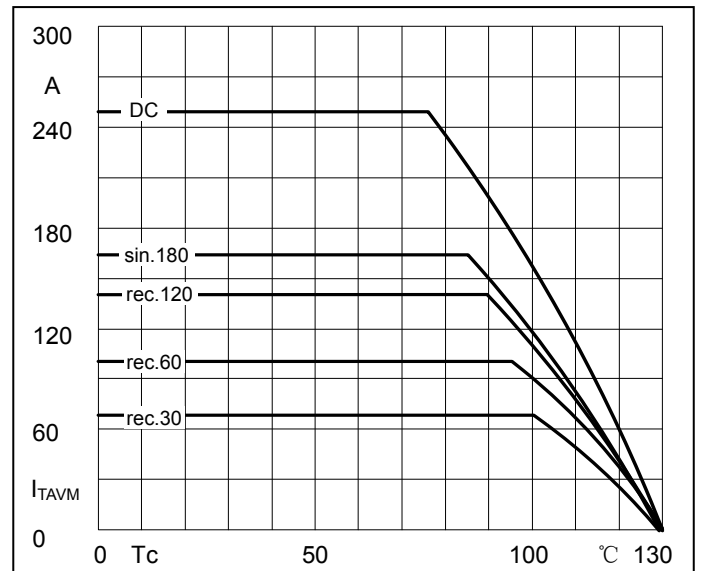


Fig2. Forward Current Derating Curve

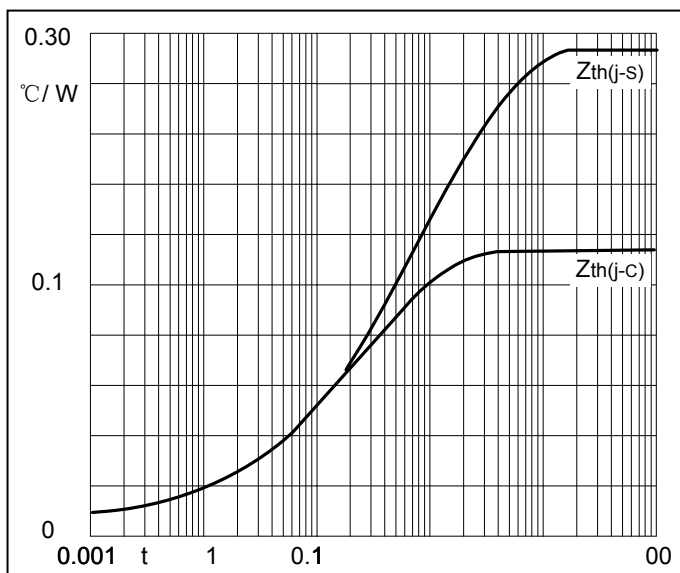


Fig3. Transient thermal impedance

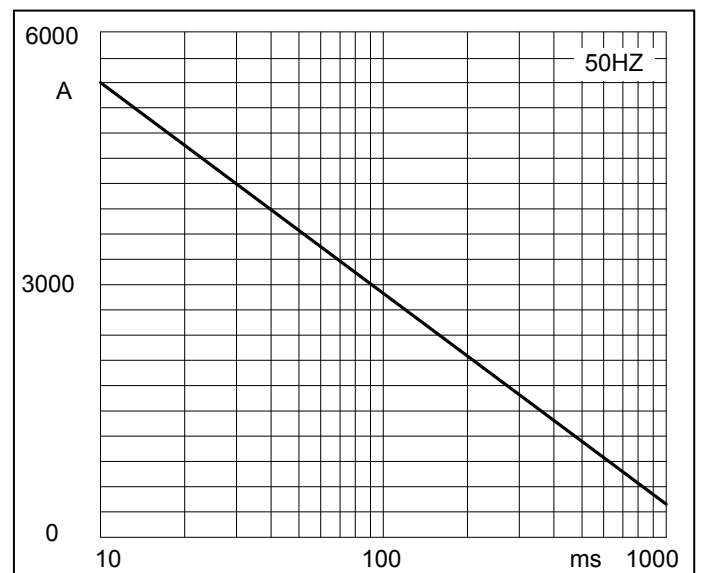


Fig4. Max Non-Repetitive Forward Surge Current

## Performance Curves

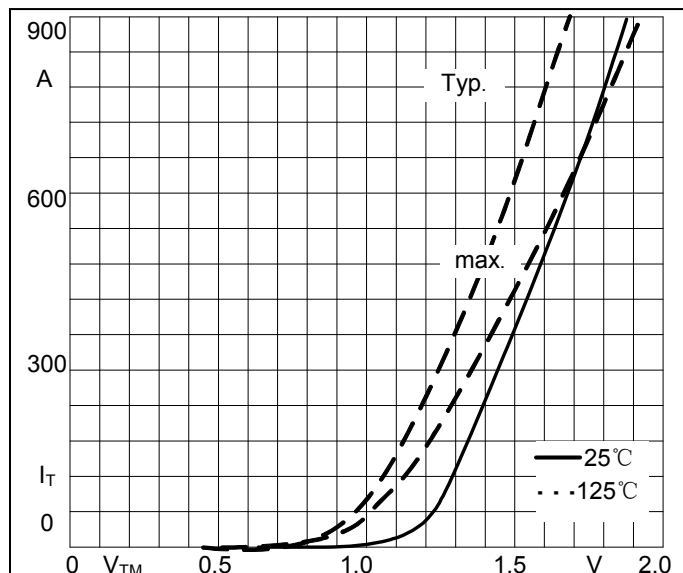


Fig5. Forward Characteristics

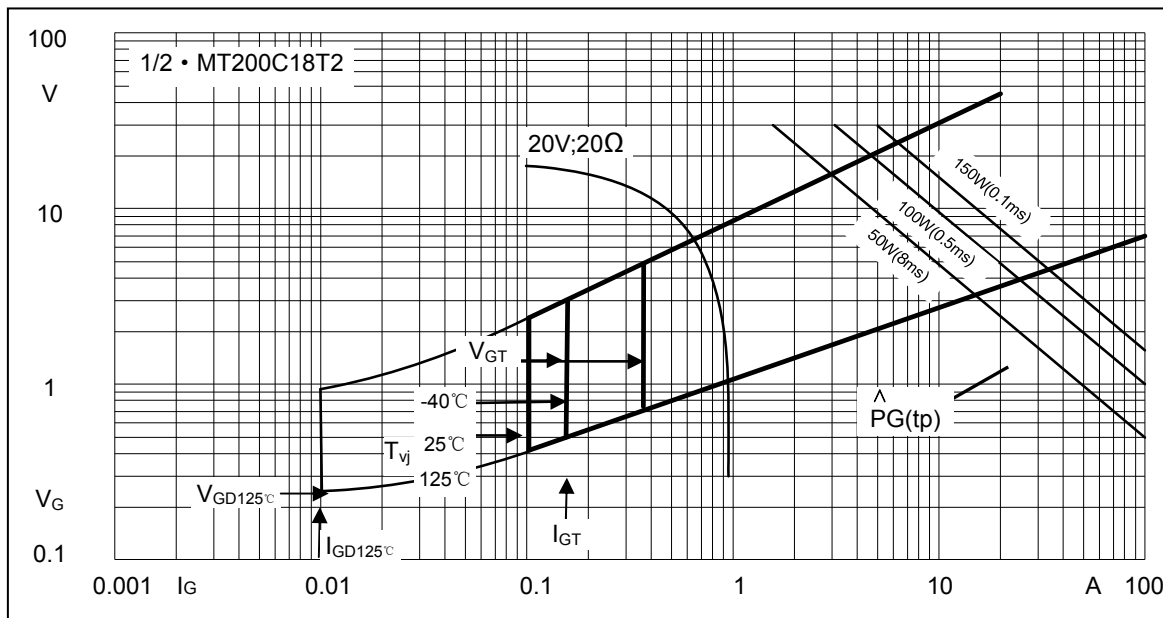


Fig6. Gate trigger Characteristics

## Ordering Information :

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

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