



# Thyristor Modules MTx1000



$I_{T(AV)}$       **1000A**  
 $V_{DRM}/V_{RRM}$     **600~1800V**  
 $I_{TSM}$             **28 KA**  
 $I^2t$                 **3920 10<sup>3</sup>A<sup>2</sup>S**

### Features:

- Isolated mounting base 2500V~
- Pressure contact technology with  
Increased power cycling capability
- Space and weight savings

### Typical Applications:

- AC/DC Motor drives
- Various rectifiers
- DC supply for PWM inverter

| SYMBOL                 | CHARACTERISTIC   | TEST CONDITIONS   | T <sub>J</sub> (°C) | VALUE |      |       | UNIT                             |
|------------------------|--|---|---------------------|-------|------|-------|----------------------------------|
|                        |  |   |                     | Min   | Type | Max   |                                  |
| $I_{T(AV)}$            | Mean on-state current  | 180° half sine wave 50Hz<br>Single side cooled, T <sub>c</sub> =85°C          | 125                 |       |      | 1000  | A                                |
| $I_{T(RMS)}$           | RMS on-state current   |   | 125                 |       |      | 1570  | A                                |
| $V_{DRM}$<br>$V_{RRM}$ | Repetitive peak off-state voltage<br>Repetitive peak reverse voltage | $V_{DRM} & V_{RRM}$ tp=10ms<br>$V_{DSM} & V_{RSM} = V_{DRM} & V_{RRM} + 100V$ | 125                 | 600   |      | 1800  | V                                |
| $I_{DRM}$<br>$I_{RRM}$ | Repetitive peak current  | $V_{DM} = V_{DRM}$<br>$V_{RM} = V_{RRM}$                                      | 125                 |       |      | 55    | mA                               |
| $I_{TSM}$              | Surge on-state current   | 10ms half sine wave,<br>$V_R = 0.6V_{RRM}$                                    | 125                 |       |      | 28.0  | KA                               |
| $I^2t$                 | I <sup>2</sup> t for fusing coordination                             |   |                     |       |      | 3920  | A <sup>2</sup> s*10 <sup>3</sup> |
| $V_{TO}$               | Threshold voltage  |   | 125                 |       |      | 0.80  | V                                |
| $r_T$                  | On-state slop resistance   |   |                     |       |      | 0.15  | mΩ                               |
| $V_{TM}$               | Peak on-state voltage  | $I_{TM} = 3000A$  | 25                  |       |      | 1.96  | V                                |
| $dv/dt$                | Critical rate of rise of off-state voltage                           | $V_{DM} = 67\%V_{DRM}$  | 125                 |       |      | 800   | V/μs                             |
| $di/dt$                | Critical rate of rise of on-state current                            | $I_{TM} = 2000A$ ,<br>Gate source 1.5A<br>t <sub>r</sub> ≤ 0.5μs Repetitive   | 125                 |       |      | 100   | A/μs                             |
| $I_{GT}$               | Gate trigger current   |   |                     | 30    |      | 200   | mA                               |
| $V_{GT}$               | Gate trigger voltage   | $V_A = 12V, I_A = 1A$   | 25                  | 1.0   |      | 3.0   | V                                |
| $I_H$                  | Holding current  |   |                     | 20    |      | 200   | mA                               |
| $V_{GD}$               | Non-trigger gate voltage   | $V_{DM} = 67\%V_{DRM}$  | 125                 | 0.2   |      |       | V                                |
| $R_{th(j-c)}$          | Thermal resistance<br>Junction to case                               | Single side cooled  |                     |       |      | 0.034 | °C /W                            |
| $R_{th(c-h)}$          | Thermal resistance<br>case to heatsink                               | Single side cooled  |                     |       |      | 0.020 | °C /W                            |
| $V_{iso}$              | Isolation voltage  | 50Hz, R.M.S, t=1min, I <sub>iso</sub> : 1mA(MAX)                              |                     | 2500  |      |       | V                                |
| $F_m$                  | Thermal connection torque(M12)                                       |   |                     |       | 12   |       | N·m                              |
|                        | Mounting torque(M8)  |   |                     |       | 12   |       | N·m                              |
| $T_{stg}$              | Stored temperature   |   |                     | -40   |      | 125   | °C                               |
| $W_t$                  | Weight   |   |                     |       | 3800 |       | g                                |
| <b>Outline</b>         |  |   |                     |       |      |       |                                  |

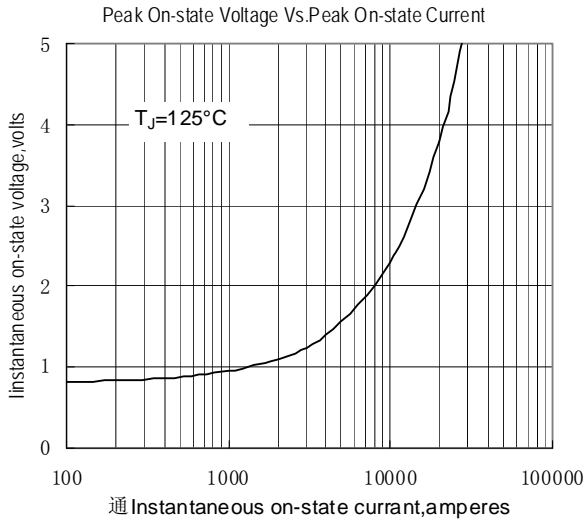


Fig.1

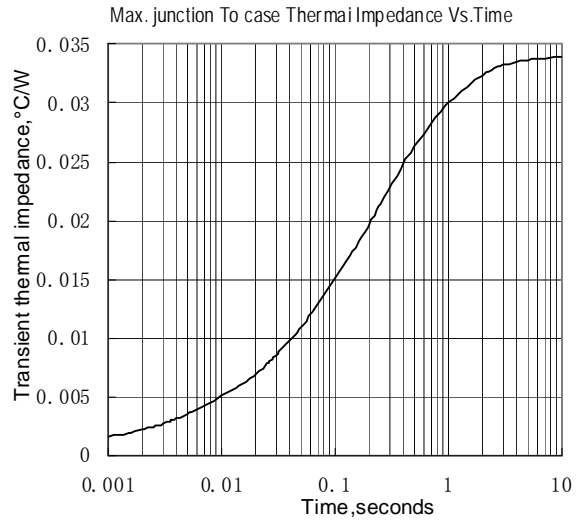


Fig.2

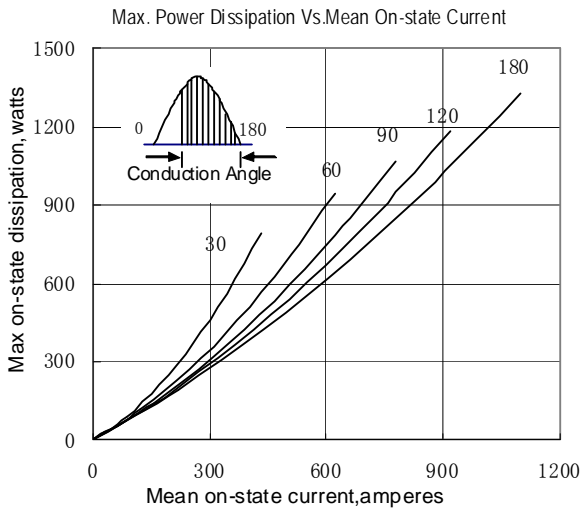


Fig.3

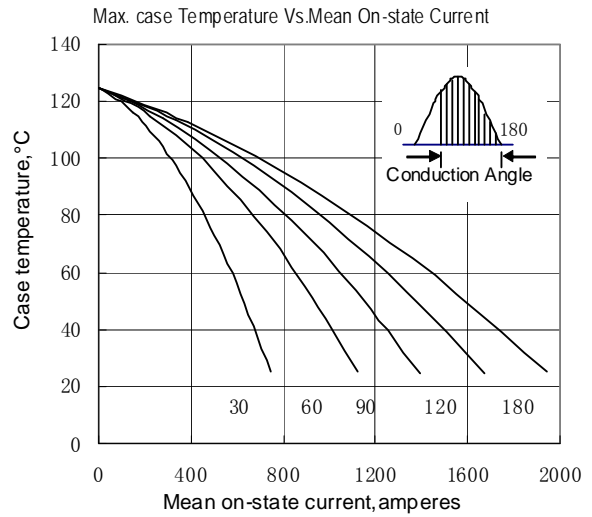


Fig.4

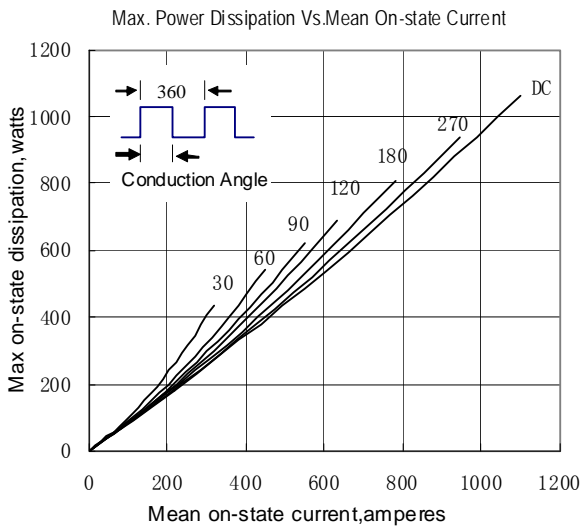


Fig.5

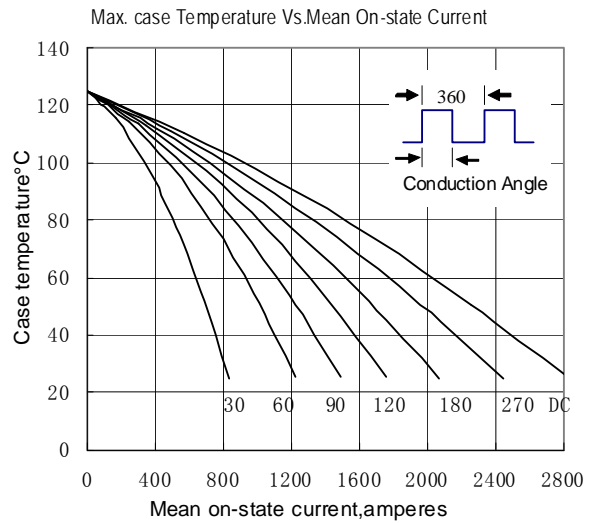


Fig.6

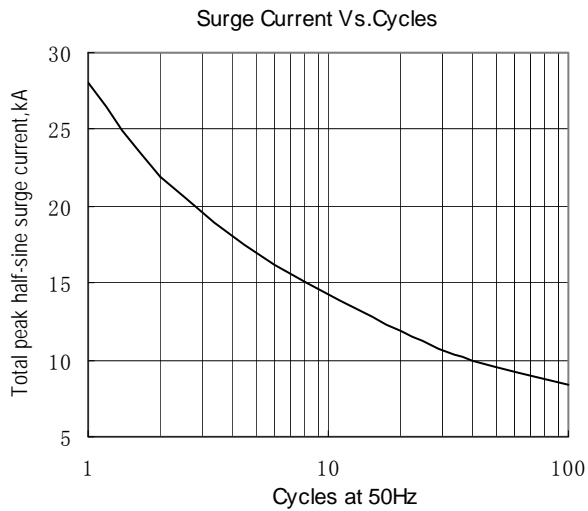


Fig.7

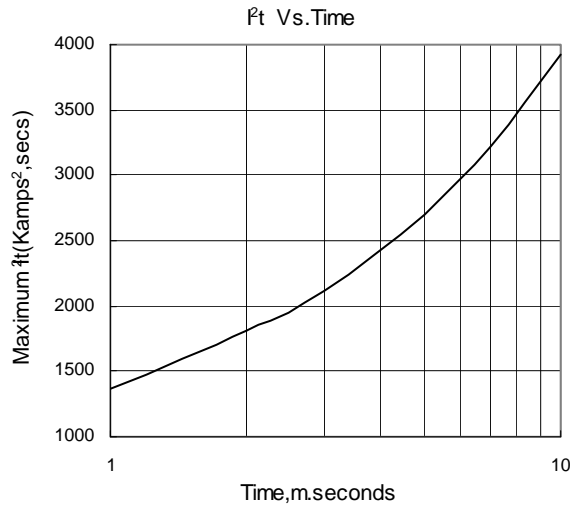


Fig.8

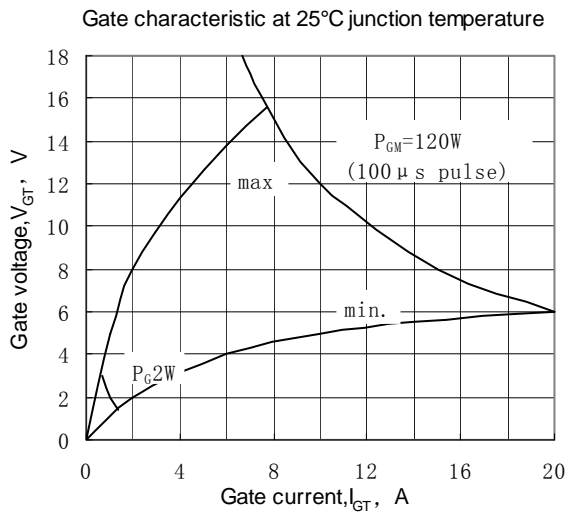


Fig.9

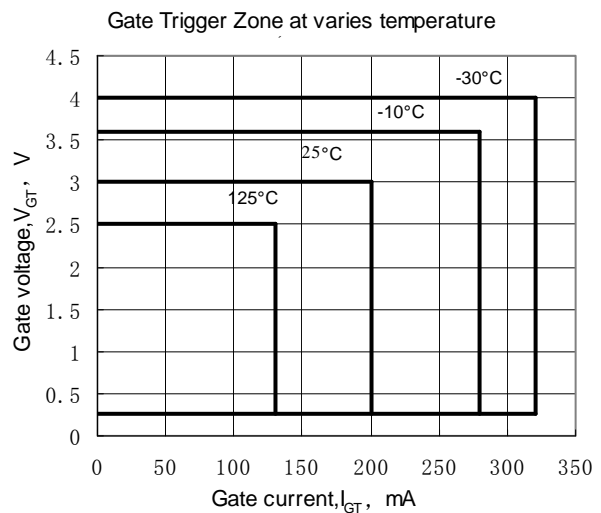


Fig.10

Outline:

