

**Features:**

- Isolated mounting base 3000V~
- Pressure contact technology with Increased power cycling capability
- Space and weight saving

**Typical Applications:**

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

| V <sub>RRM</sub> , V <sub>DRM</sub> | Type & Outline  |                  |
|-------------------------------------|-----------------|------------------|
| 600V                                | MTx182-06-216F3 | MTx182-06-216F3B |
| 800V                                | MTx182-08-216F3 | MTx182-08-216F3B |
| 1000V                               | MTx182-10-216F3 | MTx182-10-216F3B |
| 1200V                               | MTx182-12-216F3 | MTx182-12-216F3B |
| 1400V                               | MTx182-14-216F3 | MTx182-14-216F3B |
| 1600V                               | MTx182-16-216F3 | MTx182-16-216F3B |
| 1800V                               | MTx182-18-216F3 | MTx182-18-216F3B |
| 1800V                               |                 | MT182-18-216F3BG |

MTx stands for any type of MTC, MTA, MTK

| SYMBOL                               | CHARACTERISTIC                             | TEST CONDITIONS                                                      | T <sub>j</sub> (°C) | VALUE |      |      | UNIT                             |
|--------------------------------------|--------------------------------------------|----------------------------------------------------------------------|---------------------|-------|------|------|----------------------------------|
|                                      |                                            |                                                                      |                     | Min   | Type | Max  |                                  |
| I <sub>T(AV)</sub>                   | Mean on-state current                      | 180° half sine wave 50Hz<br>Single side cooled, T <sub>C</sub> =85°C | 125                 |       |      | 182  | A                                |
| I <sub>T(RMS)</sub>                  | RMS on-state current                       |                                                                      |                     |       |      | 286  | A                                |
| I <sub>DRM</sub><br>I <sub>RRM</sub> | Repetitive peak current                    | at V <sub>DRM</sub><br>at V <sub>RRM</sub>                           | 125                 |       |      | 20   | mA                               |
| I <sub>TSM</sub>                     | Surge on-state current                     | V <sub>R</sub> =60%V <sub>RRM</sub> , t=10ms half sine,              | 125                 |       |      | 7    | kA                               |
| I <sup>2</sup> t                     | I <sup>2</sup> t for fusing coordination   |                                                                      | 125                 |       |      | 245  | 10 <sup>3</sup> A <sup>2</sup> s |
| V <sub>TO</sub>                      | Threshold voltage                          |                                                                      | 125                 |       |      | 0.85 | V                                |
| r <sub>T</sub>                       | On-state slope resistance                  |                                                                      |                     |       |      | 1.26 | mΩ                               |
| V <sub>TM</sub>                      | Peak on-state voltage                      | I <sub>TM</sub> =550A                                                | 25                  |       |      | 1.62 | V                                |
| dv/dt                                | Critical rate of rise of off-state voltage | V <sub>DM</sub> =67%V <sub>DRM</sub>                                 | 125                 |       |      | 1000 | V/μs                             |
| di/dt                                | Critical rate of rise of on-state current  | Gate source 1.5A<br>t <sub>r</sub> ≤0.5μs Repetitive                 | 125                 |       |      | 200  | A/μs                             |
| I <sub>GT</sub>                      | Gate trigger current                       | V <sub>A</sub> =12V, I <sub>A</sub> =1A                              | 25                  | 30    |      | 150  | mA                               |
| V <sub>GT</sub>                      | Gate trigger voltage                       |                                                                      |                     | 0.7   |      | 2.5  | V                                |
| I <sub>H</sub>                       | Holding current                            |                                                                      |                     | 10    |      | 150  | mA                               |
| I <sub>L</sub>                       | Latching current                           |                                                                      |                     |       |      | 1000 | mA                               |
| V <sub>GD</sub>                      | Non-trigger gate voltage                   | V <sub>DM</sub> =67%V <sub>DRM</sub>                                 | 125                 |       |      | 0.20 | V                                |
| R <sub>th(j-c)</sub>                 | Thermal resistance<br>Junction to case     | Single side cooled per chip                                          |                     |       |      | 0.16 | °C/W                             |
| R <sub>th(c-h)</sub>                 | Thermal resistance<br>case to heatsink     | Single side cooled per chip                                          |                     |       |      | 0.08 | °C/W                             |
| V <sub>iso</sub>                     | Isolation voltage                          | 50Hz, R.M.S, t=1min, I <sub>iso</sub> :1mA(MAX)                      |                     | 3000  |      |      | V                                |
| F <sub>m</sub>                       | Terminal connection torque(M6)             |                                                                      |                     | 4.0   |      | 6.0  | N·m                              |
|                                      | Mounting torque(M6)                        |                                                                      |                     | 4.0   |      | 6.0  | N·m                              |
| T <sub>vj</sub>                      | Junction temperature                       |                                                                      |                     | -40   |      | 125  | °C                               |
| T <sub>stg</sub>                     | Stored temperature                         |                                                                      |                     | -40   |      | 125  | °C                               |
| W <sub>t</sub>                       | Weight                                     |                                                                      |                     |       | 320  |      | g                                |
| Outline                              | 216F3, 216F3B                              |                                                                      |                     |       |      |      |                                  |

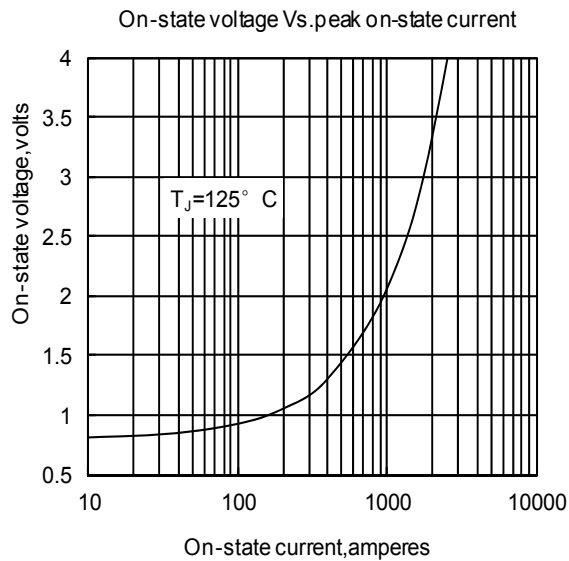


Fig1

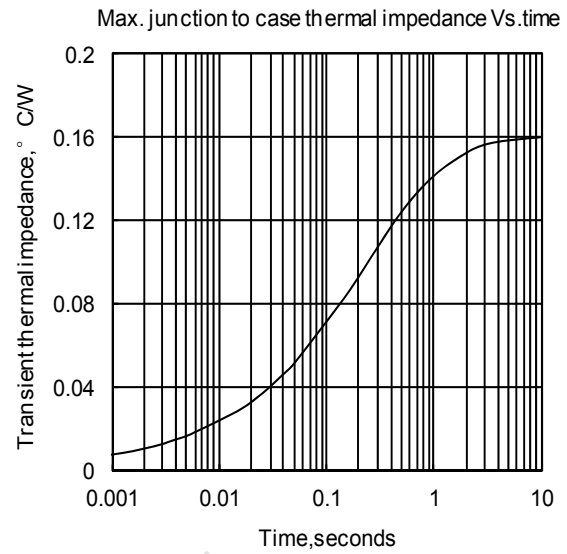


Fig2

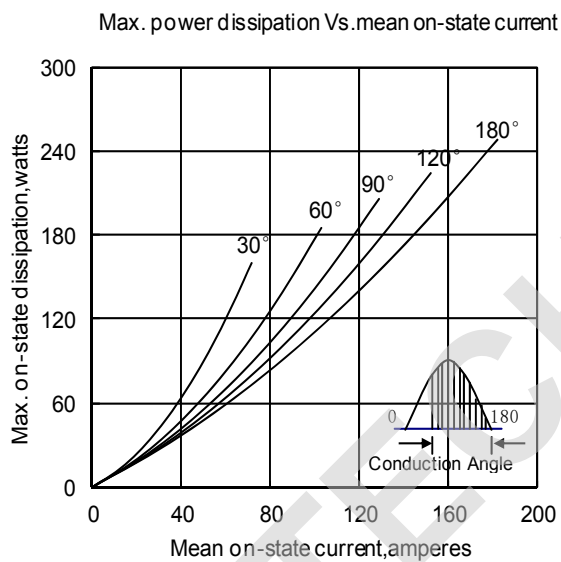


Fig3

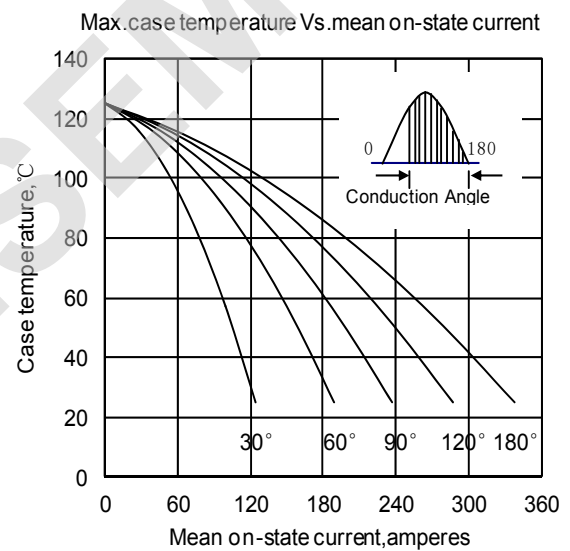


Fig4

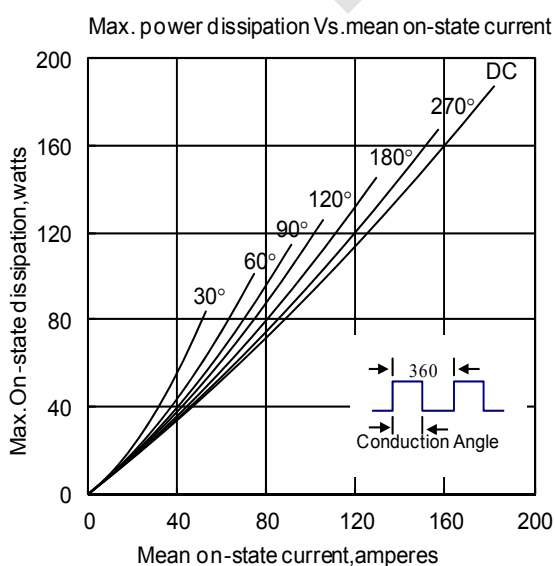


Fig5

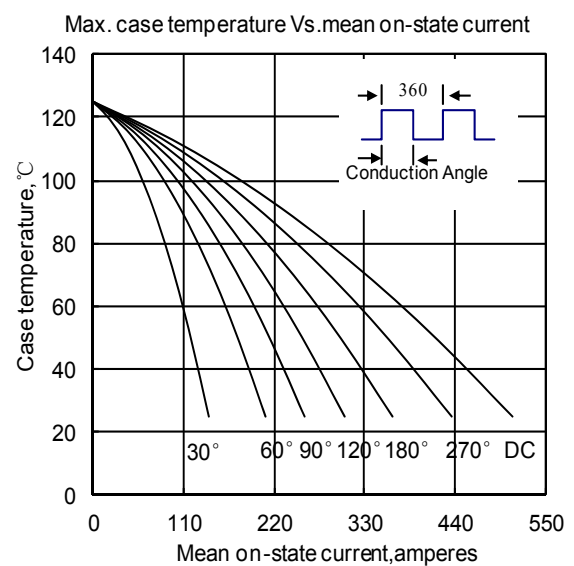


Fig6

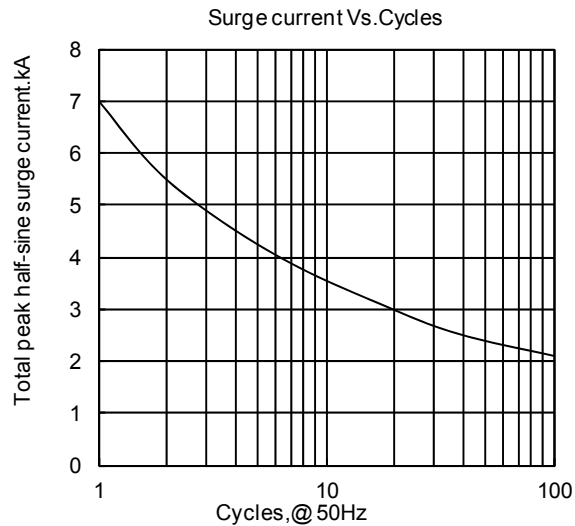


Fig7

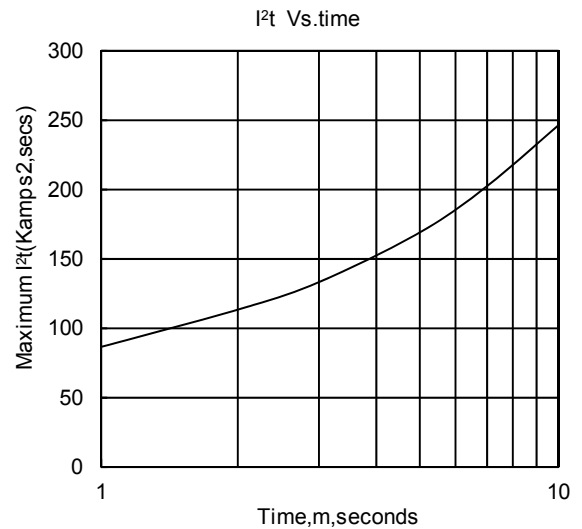


Fig8

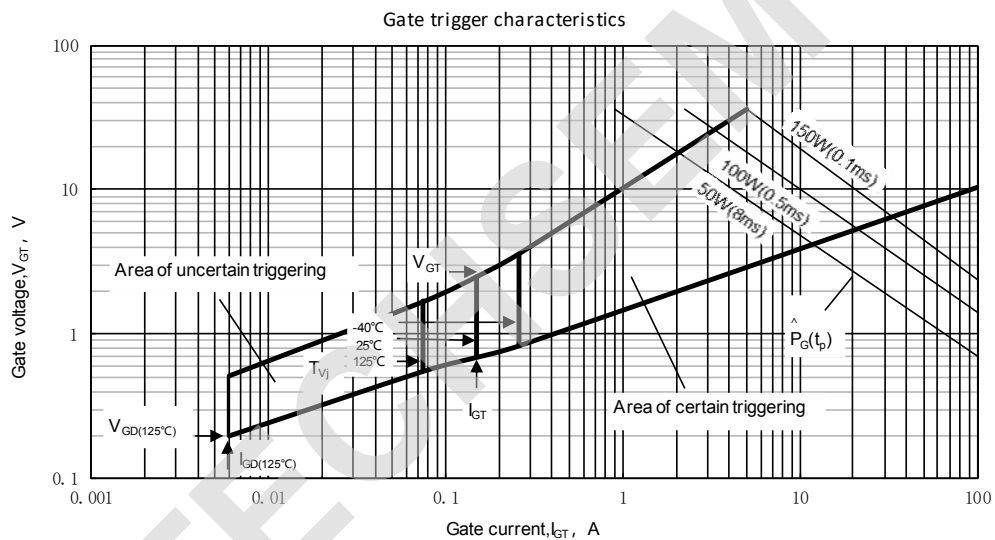
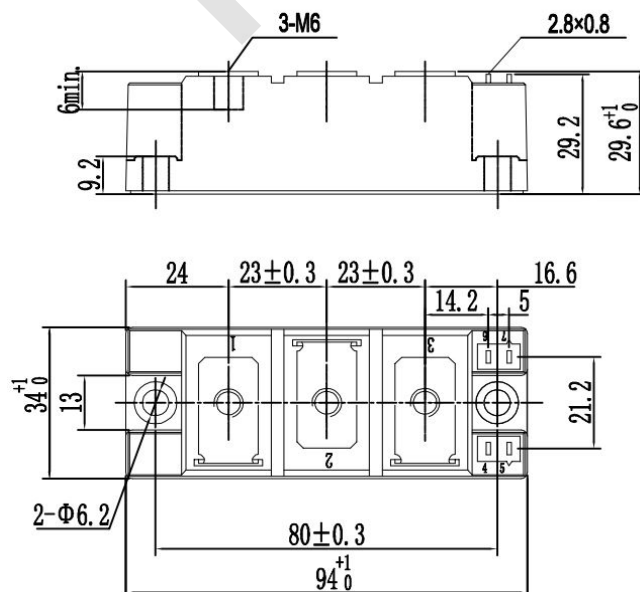


Fig.9

## Outline:



Unmarked dimensional tolerance:  $\pm 0.5\text{mm}$

TECHSEM reserves the right to change specifications without notice.

