



**Features :**

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

**Typical Applications :**

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

| V <sub>DRM</sub> , V <sub>RRM</sub> | Type & Outline   |
|-------------------------------------|------------------|
| 600V                                | MFx240-06-216F3E |
| 800V                                | MFx240-08-216F3E |
| 1000V                               | MFx240-10-216F3E |
| 1200V                               | MFx240-12-216F3E |
| 1400V                               | MFx240-14-216F3E |
| 1600V                               | MFx240-16-216F3E |
| 1800V                               | MFx240-18-216F3E |

MFx stands for any type of **MFC, MFA, MFK**

| 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                 |       |      | 240   | A                                |
| I <sub>T(RMS)</sub>                  | RMS on-state current                       |   | 125                 |       |      | 377   | 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                     | 10ms half sine wave<br>V <sub>R</sub> =60%V <sub>RRM</sub>                  | 125                 |       |      | 7.0   | kA                               |
| I <sup>2</sup> t                     | I <sup>2</sup> t for fusing coordination   |   |                     |       |      | 245   | 10 <sup>3</sup> A <sup>2</sup> s |
| V <sub>TO</sub>                      | Threshold voltage                          |   | 125                 |       |      | 0.77  | V                                |
| r <sub>T</sub>                       | On-state slope resistance                  |   |                     |       |      | 0.72  | mΩ                               |
| V <sub>TM</sub>                      | Peak on-state voltage                      | I <sub>TM</sub> =720A   | 25                  |       |      | 1.67  | 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  | I <sub>TM</sub> =400A, 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    |      | 180   | mA                               |
| V <sub>GT</sub>                      | Gate trigger voltage                       |   |                     | 0.7   |      | 2.5   | V                                |
| I <sub>H</sub>                       | Holding current                            |   |                     | 10    |      | 180   | mA                               |
| I <sub>L</sub>                       | Latching current                           |   |                     |       |      | 1500  | mA                               |
| V <sub>GD</sub>                      | Non-trigger gate voltage                   | V <sub>DM</sub> =67%V <sub>DRM</sub>  | 125                 |       |      | 0.2   | V                                |
| R <sub>th(j-c)</sub>                 | Thermal resistance<br>Junction to case     | Single side cooled per chip   |                     |       |      | 0.140 | °C/W                             |
| R <sub>th(c-h)</sub>                 | Thermal resistance<br>case to heat sink    | Single side cooled per chip   |                     |       |      | 0.080 | °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)            |   |                     | 4.5   |      | 6.0   | N·m                              |
|                                      | Mounting torque (M6)                       |   |                     | 4.5   |      | 6.0   | N·m                              |
| T <sub>j</sub>                       | Junction temperature                       |   |                     | -40   |      | 125   | °C                               |
| T <sub>stg</sub>                     | Stored temperature                         |   |                     | -40   |      | 125   | °C                               |
| W <sub>t</sub>                       | Weight                                     |   |                     |       | 350  |       | g                                |
| Outline                              | 216F3E                                     |   |                     |       |      |       |                                  |

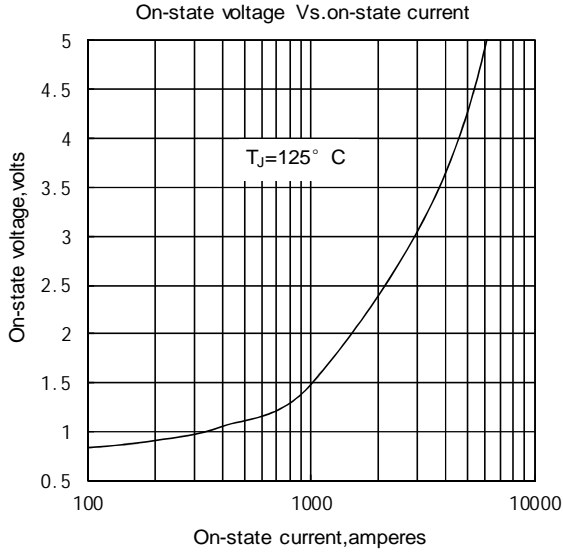


Fig.1

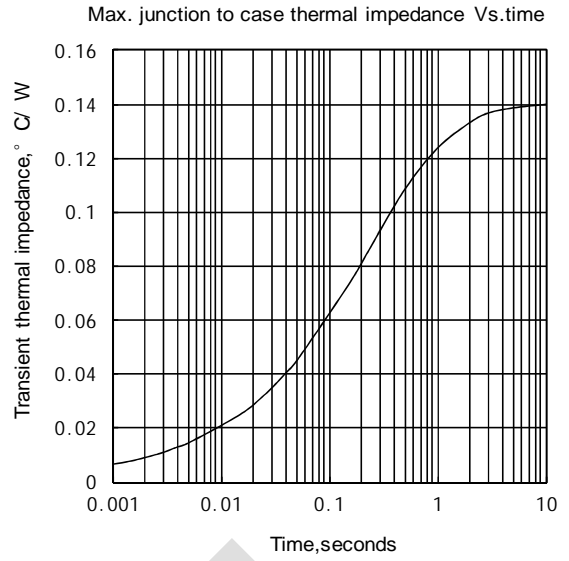


Fig.2

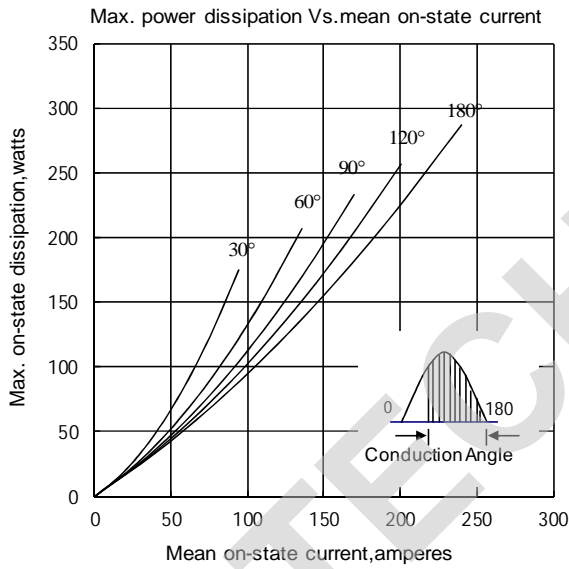


Fig.3

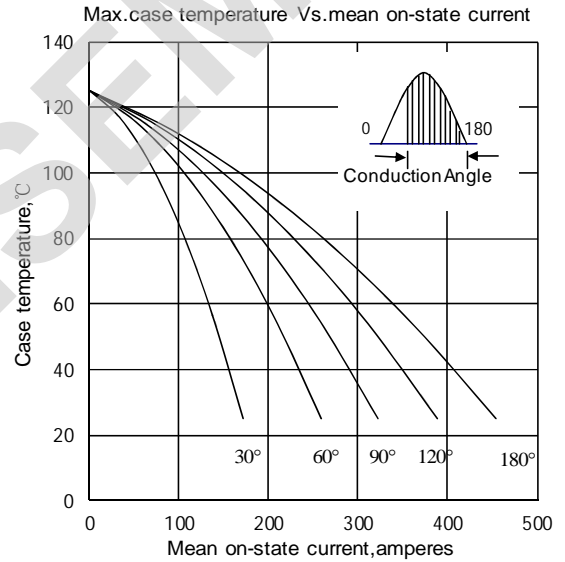


Fig.4

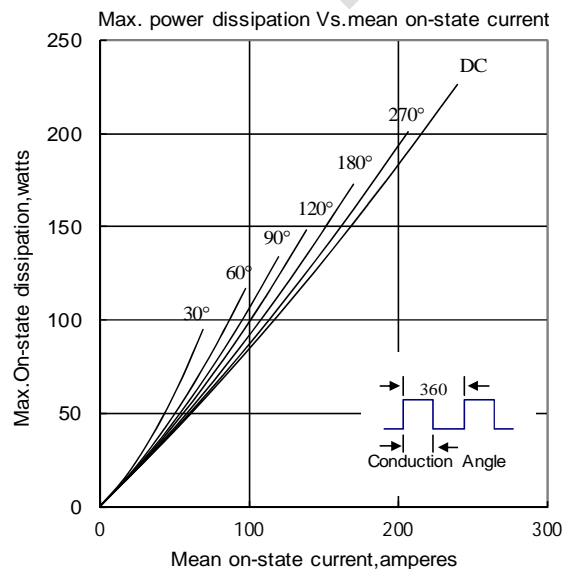


Fig.5

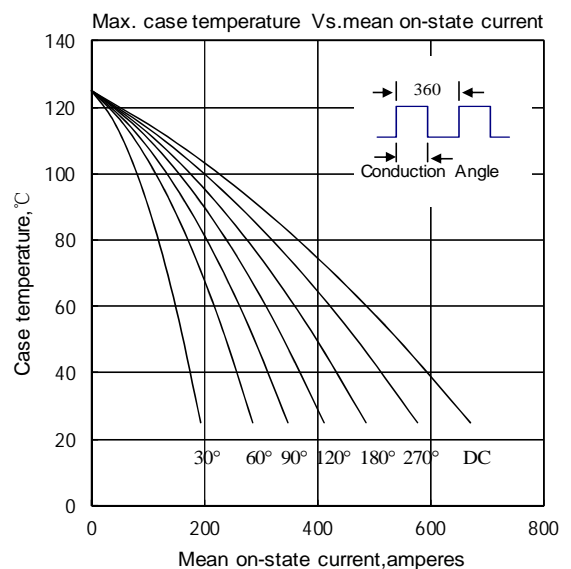


Fig.6

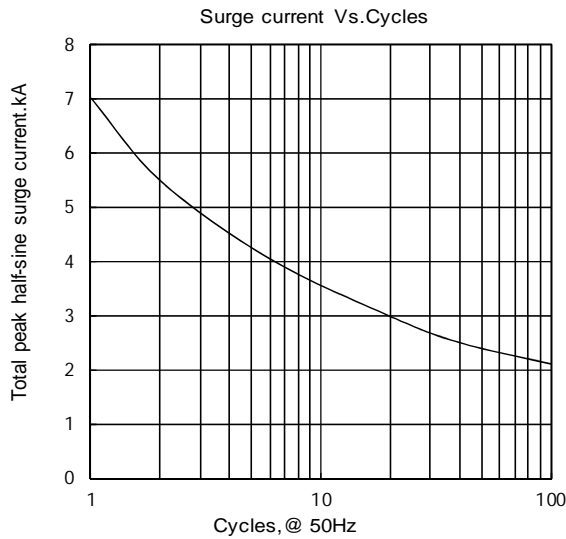


Fig.7

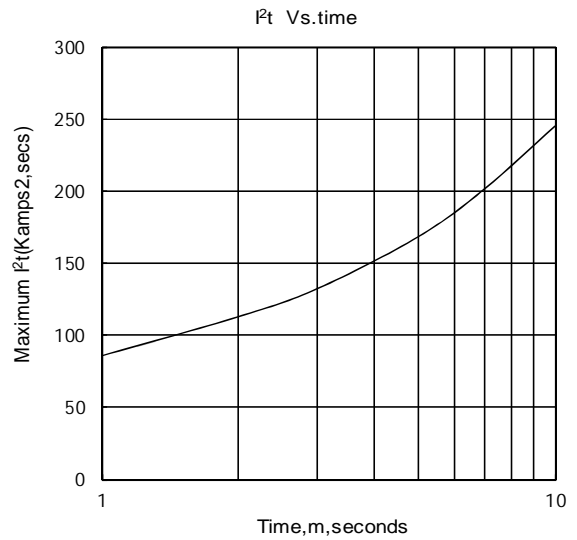


Fig.8

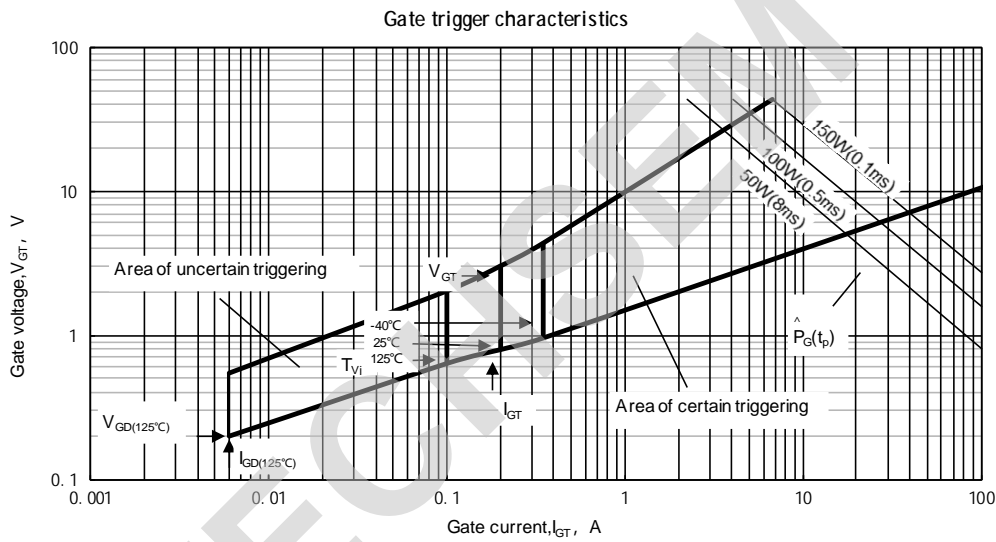
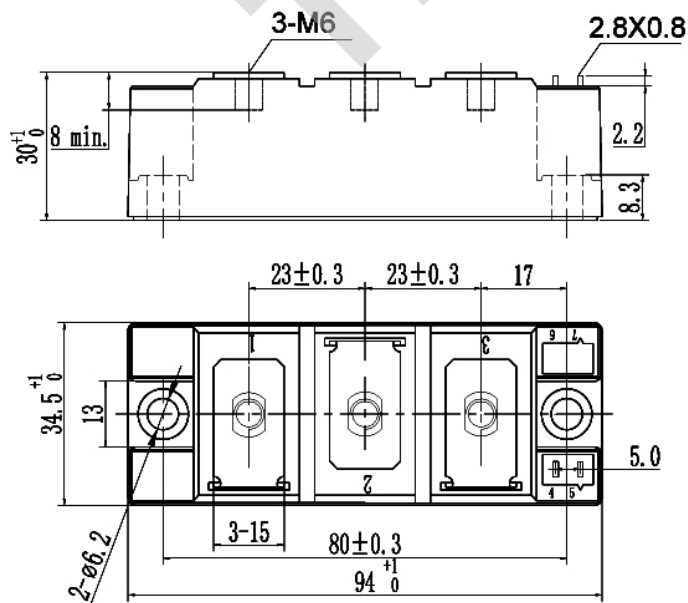
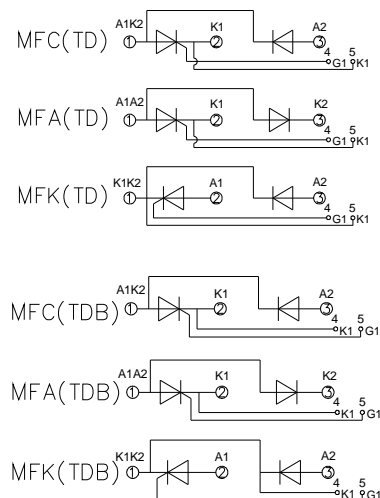


Fig.9

Outline:



Unmarked dimensional tolerance: ±0.5mm



TECHSEM reserves the right to change specifications without notice.