



**Features:**

- n Isolated mounting base 3000V~
- n Solder joint 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>R<sub>RRM</sub></sub> | Type & Outline         |
|---|------------------------|
| 600V  | MTC160-06-229H3/229H3B |
| 800V  | MTC160-08-229H3/229H3B |
| 1000V   | MTC160-10-229H3/229H3B |
| 1200V   | MTC160-12-229H3/229H3B |
| 1400V   | MTC160-14-229H3/229H3B |
| 1600V   | MTC160-16-229H3/229H3B |
| 1800V   | MTC160-18-229H3/229H3B |

| 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                 |       |      | 160  | A                                |
| I <sub>T(RMS)</sub>                              | RMS on-state current                       |  | 125                 |       |      | 251  | A                                |
| I <sub>DRM</sub><br>I <sub>R<sub>RRM</sub></sub> | Repetitive peak current                    | at V <sub>DRM</sub><br>at V <sub>R<sub>RRM</sub></sub>               | 125                 |       |      | 40   | mA                               |
| I <sub>TSM</sub>                                 | Surge on-state current                     | 10ms half sine wave<br>V <sub>R</sub> =60%V <sub>RRM</sub>           | 125                 |       |      | 3.8  | kA                               |
| I <sup>2</sup> t                                 | I <sup>2</sup> t for fusing coordination   |  |                     |       |      | 72.2 | A <sup>2</sup> s*10 <sup>3</sup> |
| V <sub>TO</sub>                                  | Threshold voltage                          |  | 125                 |       |      | 0.85 | V                                |
| r <sub>T</sub>                                   | On-state slope resistance                  |  |                     |       |      | 1.50 | mΩ                               |
| V <sub>TM</sub>                                  | Peak on-state voltage                      | I <sub>TM</sub> =480A  | 25                  |       |      | 1.80 | 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    |      | 200  | mA                               |
| V <sub>GT</sub>                                  | Gate trigger voltage                       |  |                     | 0.6   |      | 2.5  | V                                |
| I <sub>H</sub>                                   | Holding current                            |  |                     | 10    |      | 250  | 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                 |       |      | 0.2  | V                                |
| R <sub>th(j-c)</sub>                             | Thermal resistance<br>Junction to case     | Single side cooled per chip  |                     |       |      | 0.17 | °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)             |  |                     | 2.5   |      | 4.0  | N·m                              |
|  | Mounting torque(M6)                        |  |                     | 4.5   |      | 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                                     |  |                     |       | 165  |      | g                                |
| Outline  | 229H3、229H3B                               |  |                     |       |      |      |                                  |

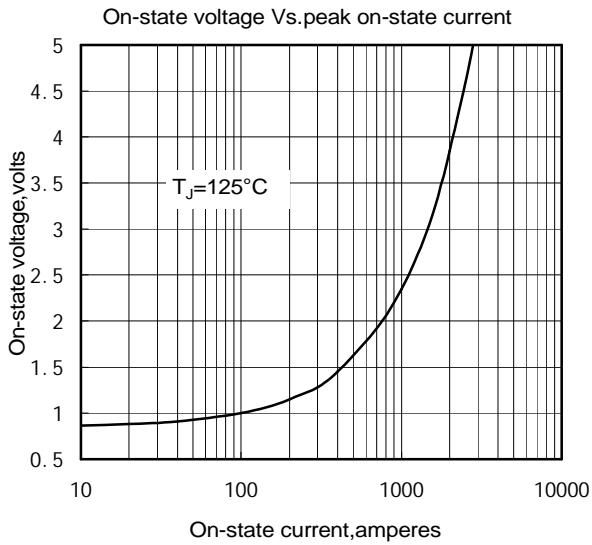


Fig1

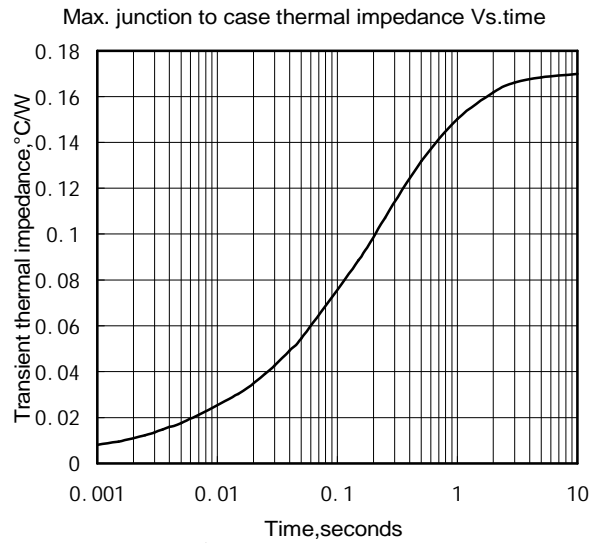


Fig2

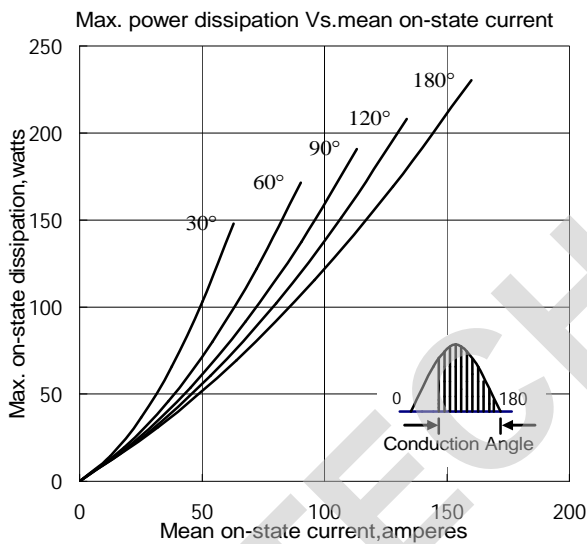


Fig3

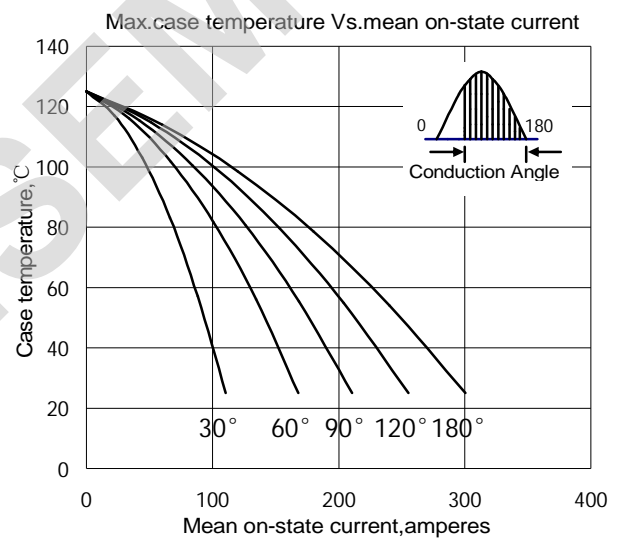


Fig4

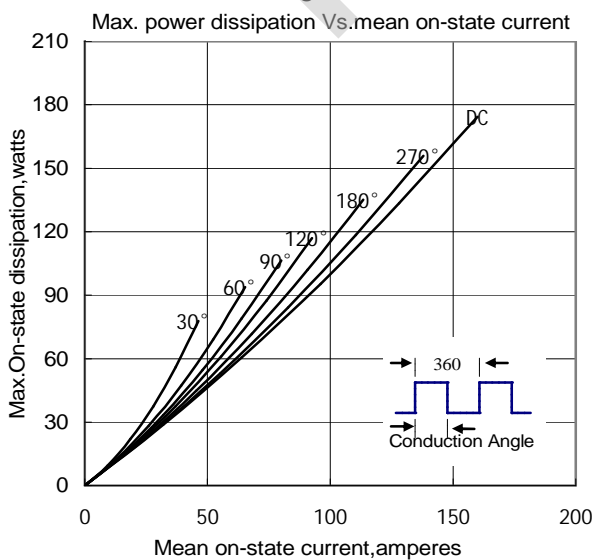


Fig5

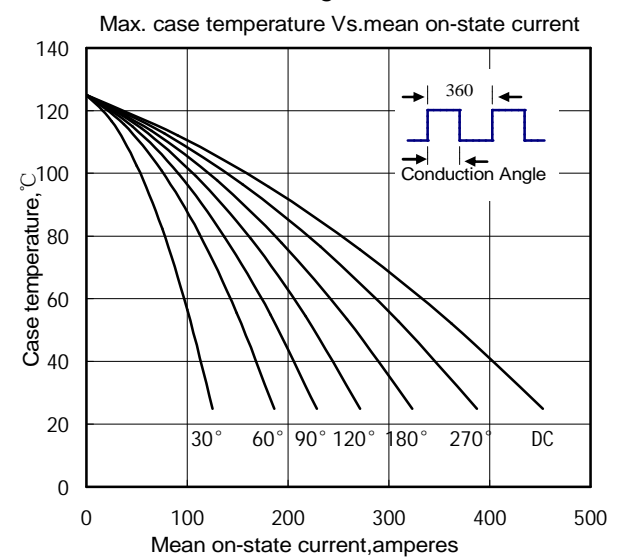


Fig6

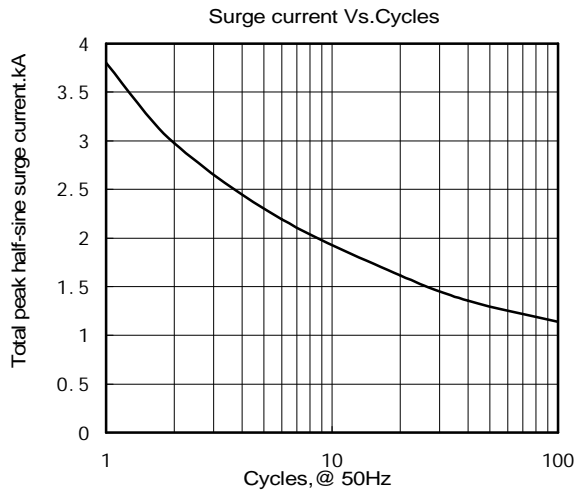


Fig 7

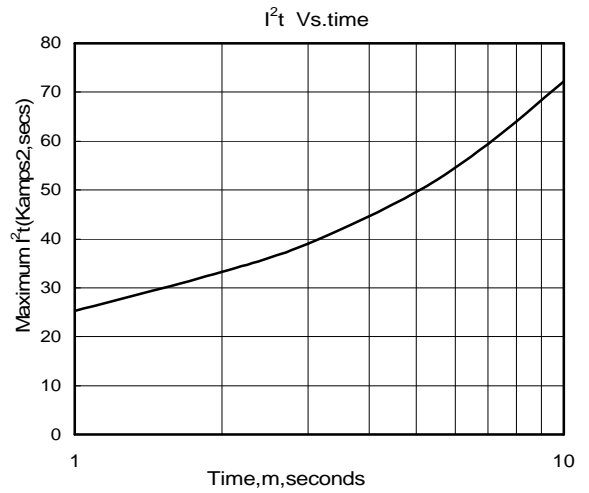


Fig 8

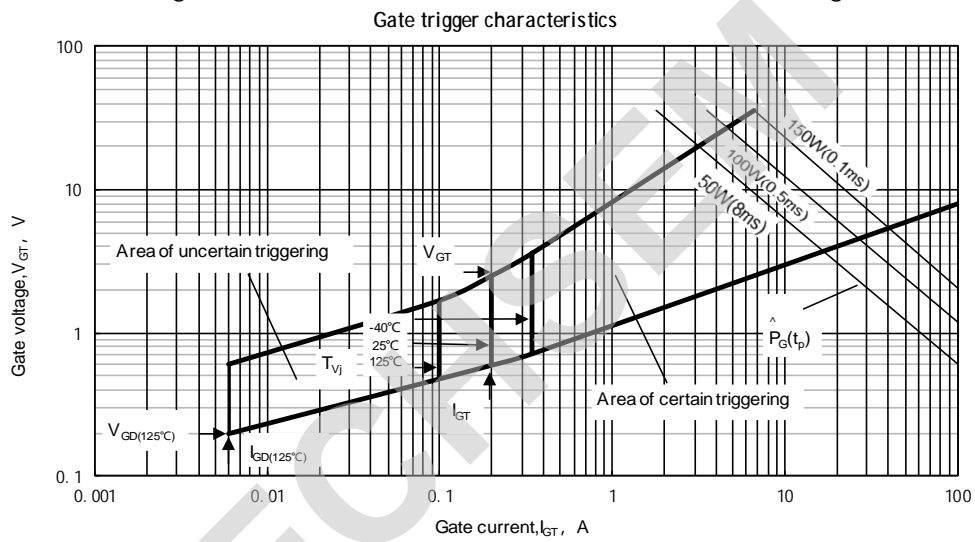
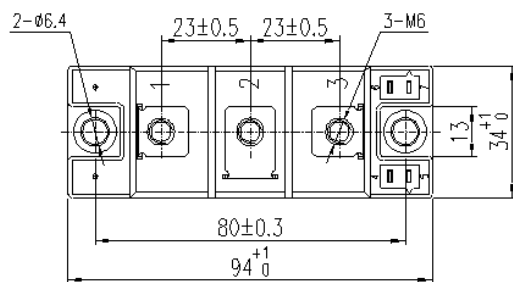
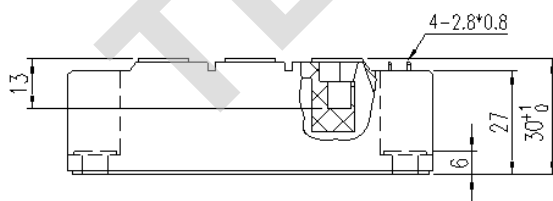


Fig.9

Outline:



Unmarked dimensional tolerance: ±0.5mm

TECHSEM reserves the right to change specifications without notice.

