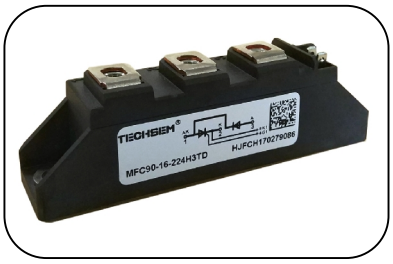



**Features：**

- **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

| $V_{DSM}$,$V_{RSM}$ | $V_{DRM}$,$V_{RRM}$ | Type & Outline |
|---|---|---|
| 900V | 800V | MFC90-08-224H3 |
| 1100V | 1000V | MFC90-10-224H3 |
| 1300V | 1200V | MFC90-12-224H3 |
| 1500V | 1400V | MFC90-14-224H3 |
| 1700V | 1600V | MFC90-16-224H3 |
| 1900V | 1800V | MFC90-18-224H3 |

| SYMBOL | CHARACTERISTIC | TEST CONDITIONS | $T_j$(°C) | VALUE | | | UNIT |
|---|---|---|---|---|---|---|---|
| | | | | Min | Type | Max | |
| $I_{T(AV)}$ | Mean on-state current | 180° half sine wave 50Hz Single side cooled, $T_c$=85°C | 125 | | | 90 | A |
| $I_{T(RMS)}$ | RMS on-state current | | 125 | | | 141 | A |
| $I_{DRM}$ $I_{RRM}$ | Repetitive peak current | at $V_{DRM}$ at $V_{RRM}$ | 125 | | | 20 | mA |
| $I_{TSM}$ | Surge on-state current | 10ms half sine wave $V_R$=60%$V_{RRM}$ | 125 | | | 1.9 | kA |
| $I^2t$ | $I^2t$ for fusing coordination | | | | | 18.1 | $A^2s*10^3$ |
| $V_{TO}$ | Threshold voltage | | 125 | | | 0.70 | V |
| $r_T$ | On-state slope resistance | | | | | 3.01 | mΩ |
| $V_{TM}$ | Peak on-state voltage | $I_{TM}$=270A | 25 | | | 1.80 | V |
| dv/dt | Critical rate of rise of off-state voltage | $V_{DM}$=67%$V_{DRM}$ | 125 | | | 1000 | V/μs |
| di/dt | Critical rate of rise of on-state current | Gate source 1.5A $t_r$ ≤0.5μs Repetitive | 125 | | | 200 | A/μs |
| $I_{GT}$ | Gate trigger current | $V_A$=12V, $I_A$=1A | 25 | 30 | | 200 | mA |
| $V_{GT}$ | Gate trigger voltage | | | 0.6 | | 2.5 | V |
| $I_H$ | Holding current | | | 10 | | 250 | mA |
| $V_{GD}$ | Non-trigger gate voltage | $V_{DM}$=67%$V_{DRM}$ | 125 | | | 0.2 | V |
| $R_{th(j-c)}$ | Thermal resistance Junction to case | Single side cooled per chip | | | | 0.28 | °C /W |
| $R_{th(c-h)}$ | Thermal resistance case to heatsink | Single side cooled per chip | | | | 0.15 | °C /W |
| $V_{iso}$ | Isolation voltage | 50Hz,R.M.S,t=1min,$I_{iso}$:1mA(MAX) | | 3000 | | | V |
| $F_m$ | Thermal connection torque(M5) | | | 2.5 | | 4.0 | N·m |
| | Mounting torque(M6) | | | 4.5 | | 6.0 | N·m |
| $T_{vj}$ | Junction temperature | | | -40 | | 125 | °C |
| $T_{stg}$ | Stored temperature | | | -40 | | 125 | °C |
| $W_t$ | Weight | | | | 100 | | g |
| Outline | 224H3 | | | | | | |

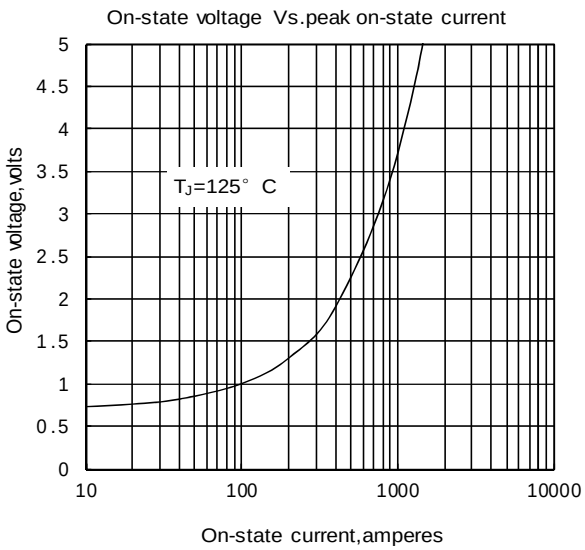



Fig1

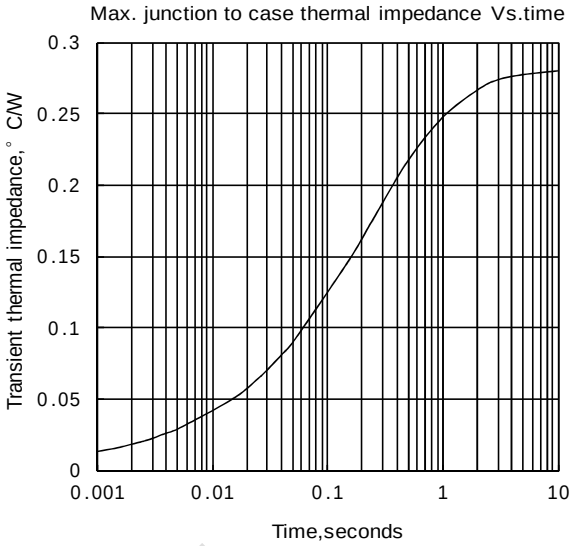



Fig2

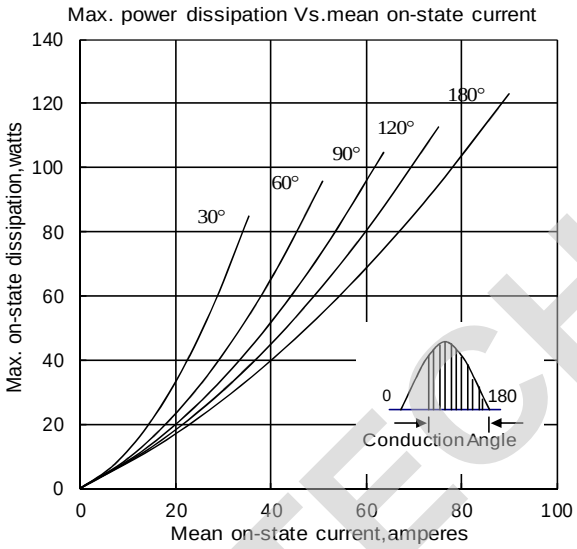



Fig3

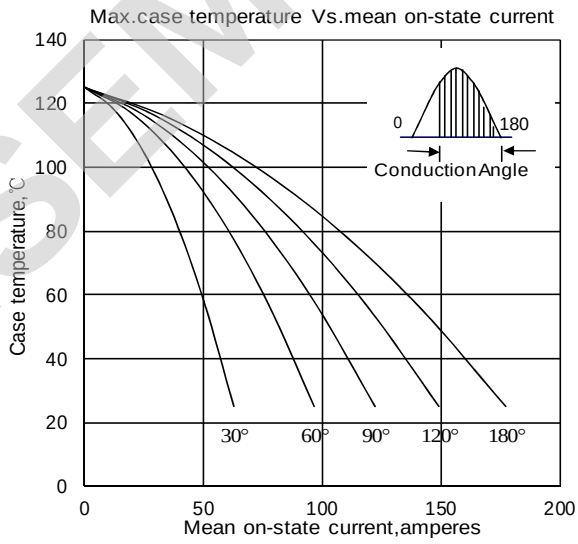



Fig4

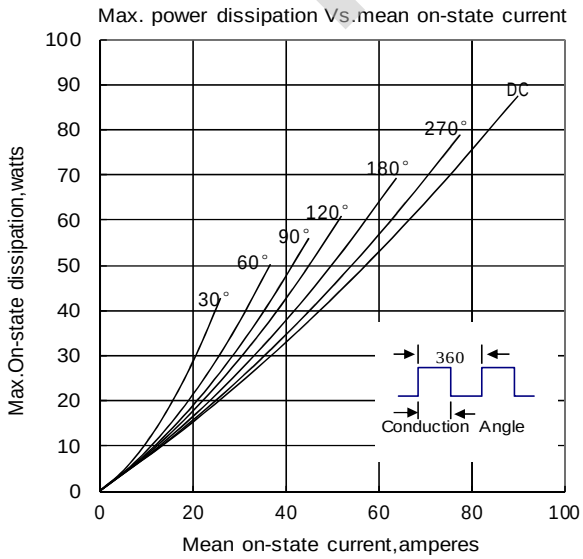



Fig5

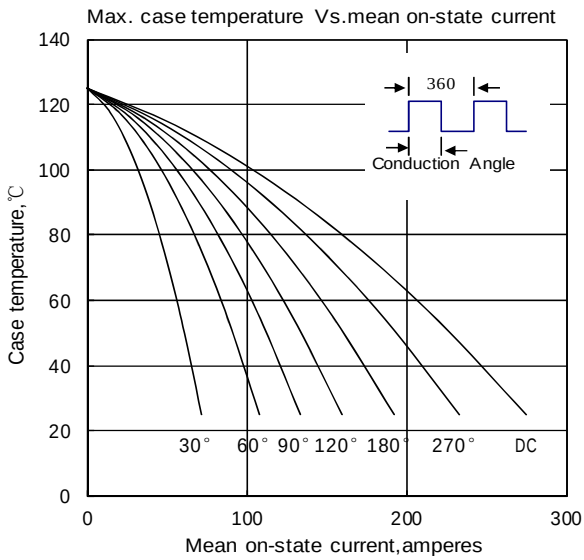



Fig6

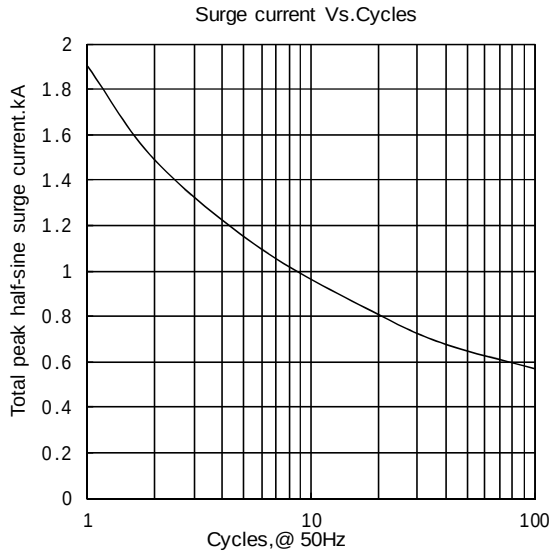



Fig7

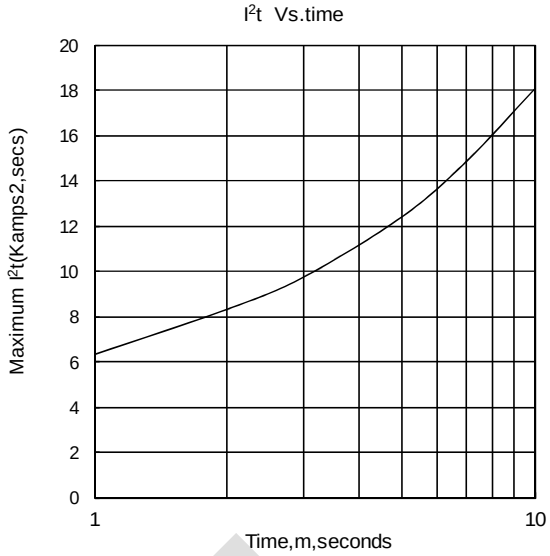



Fig8

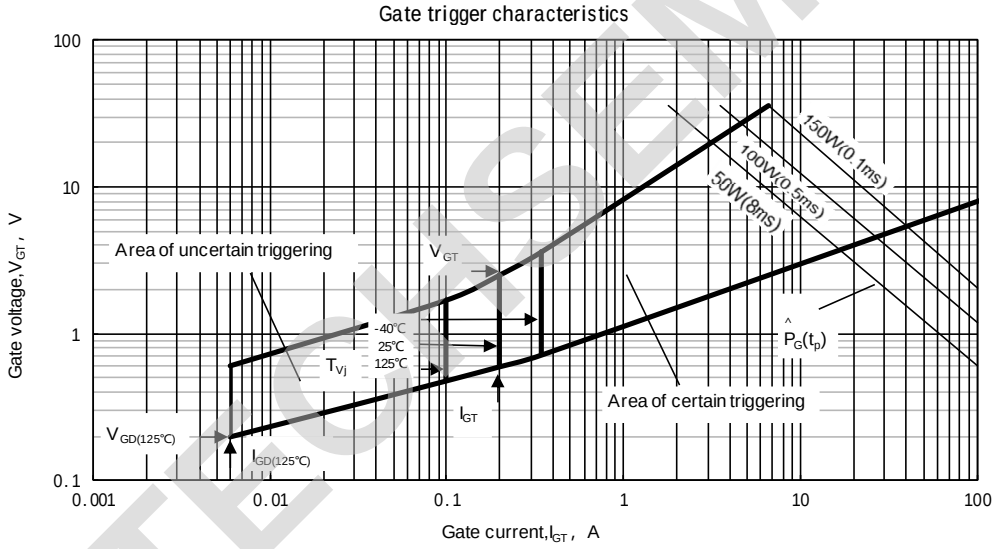
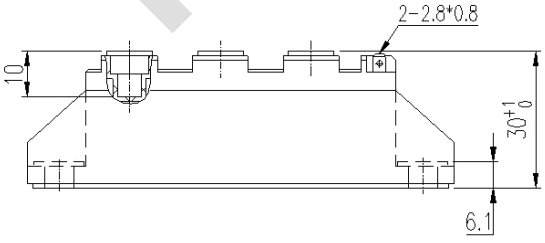
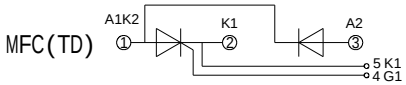
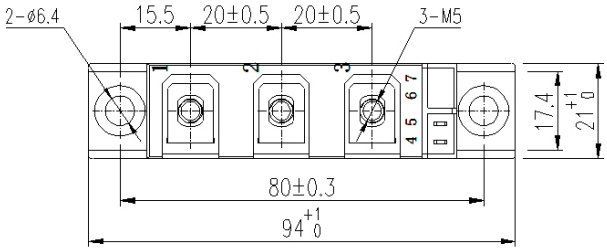



Fig.9

**Outline:**




**Unmarked dimensional tolerance：±0.5mm**

TECHSEM reserves the right to change specifications without notice.