

**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_{DSM}, V_{RSM} | V_{DRM}, V_{RRM} | Type & Outline |
|--------------------|--------------------|------------------|
| 2100V | 2000V | MFx250-20-413F3D |
| 2300V | 2200V | MFx250-22-413F3D |
| 2600V | 2500V | MFx250-25-413F3D |

MTx

| SYMBOL | CHARACTERISTIC | TEST CONDITIONS | $T_j(^{\circ}\text{C})$ | VALUE | | | UNIT |
|------------------------|--|--|-------------------------|-------|------|------|--------------------------------|
| | | | | Min | Type | Max | |
| $I_{T(AV)}$ | Mean on-state current | 180° half sine wave 50Hz Single side cooled, $T_c=85^{\circ}\text{C}$ | 125 | | | 250 | A |
| $I_{T(RMS)}$ | RMS on-state current | | | | | 393 | A |
| I_{DRM} I_{RRM} | Repetitive peak current | at V_{DRM} at V_{RRM} | 125 | | | 30 | mA |
| I_{TSM} | Surge on-state current | 10ms half sine wave $V_R=60\%V_{RRM}$ | 125 | | | 6.8 | kA |
| I^2t | I^2t for fusing coordination | | | | | 231 | $\text{A}^2\text{s}\cdot 10^3$ |
| V_{TO} | Threshold voltage | | 125 | | | 0.85 | V |
| r_T | On-state slope resistance | | | | | 0.80 | $\text{m}\Omega$ |
| V_{TM} | Peak on-state voltage | $I_{TM}=750\text{A}$ | 25 | | | 1.73 | V |
| dv/dt | Critical rate of rise of off-state voltage | $V_{DM}=67\%V_{DRM}$ | 125 | | | 800 | $\text{V}/\mu\text{s}$ |
| di/dt | Critical rate of rise of on-state current | Gate source 1.5A $t_r \leq 0.5\mu\text{s}$ Repetitive | 125 | | | 100 | $\text{A}/\mu\text{s}$ |
| I_{GT} | Gate trigger current | $V_A=12\text{V}, I_A=1\text{A}$ | 25 | 30 | | 180 | mA |
| V_{GT} | Gate trigger voltage | | | 0.7 | | 2.5 | V |
| I_H | Holding current | | | 10 | | 200 | 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 | | | | 0.12 | $^{\circ}\text{C}/\text{W}$ |
| $R_{th(c-h)}$ | Thermal resistance case to heat sink | Single side cooled per chip | | | | 0.04 | $^{\circ}\text{C}/\text{W}$ |
| V_{iso} | Isolation voltage | 50Hz, R.M.S., $t=1\text{min}, I_{iso}: 1\text{mA}(\text{MAX})$ | | 3000 | | | V |
| F_m | Terminal connection torque (M8) | | | | 12.0 | | N·m |
| | Mounting torque (M6) | | | | 6.0 | | N·m |
| T_{vj} | Junction temperature | | | -40 | | 125 | $^{\circ}\text{C}$ |
| T_{stg} | Stored temperature | | | -40 | | 125 | $^{\circ}\text{C}$ |
| W_t | Weight | | | | 810 | | g |
| Outline | 413F3D | | | | | | |

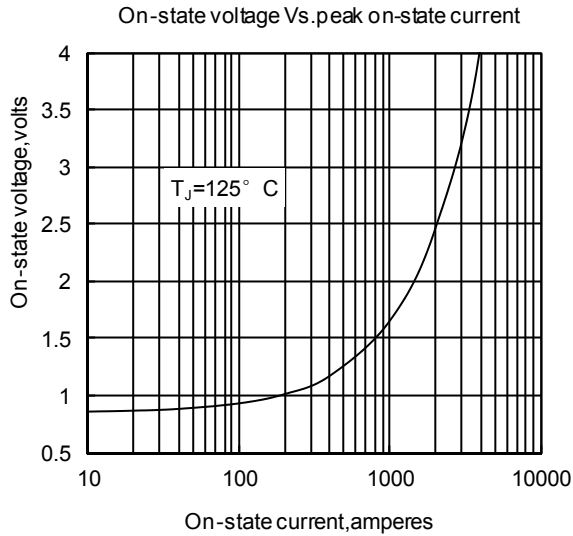


Fig. 1

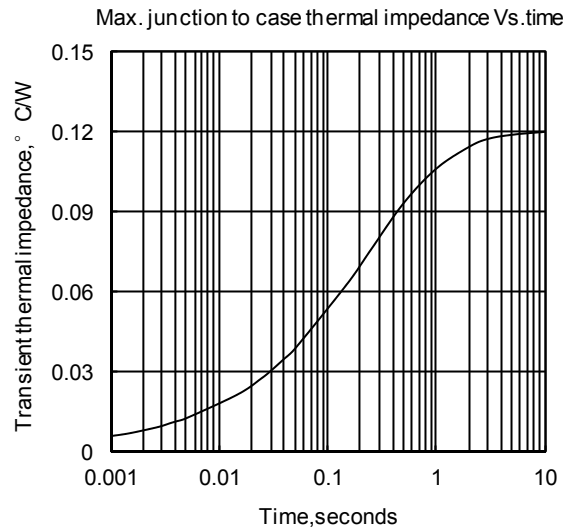


Fig. 2

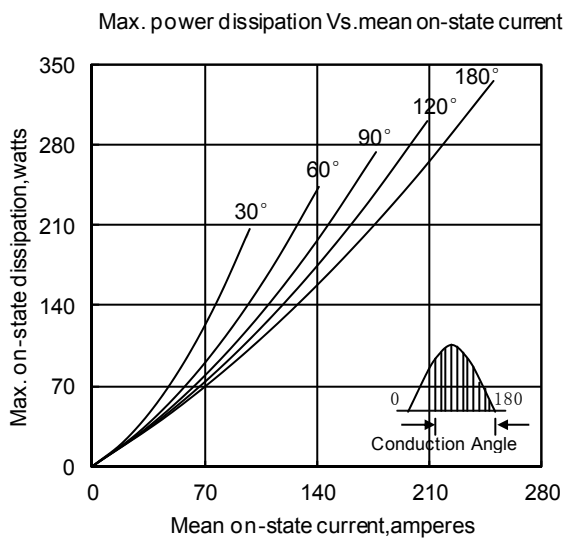


Fig. 3

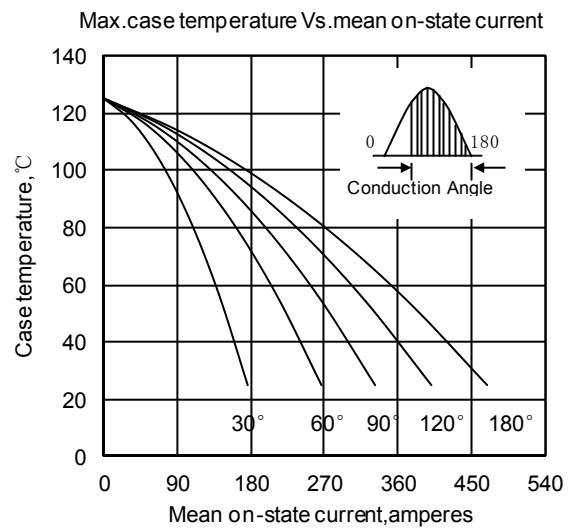


Fig. 4

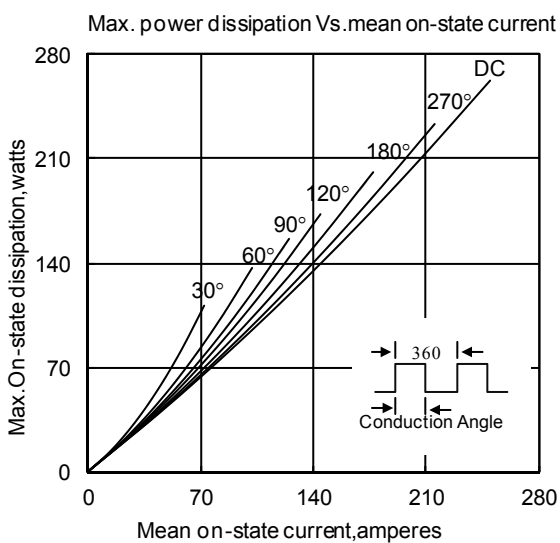


Fig. 5

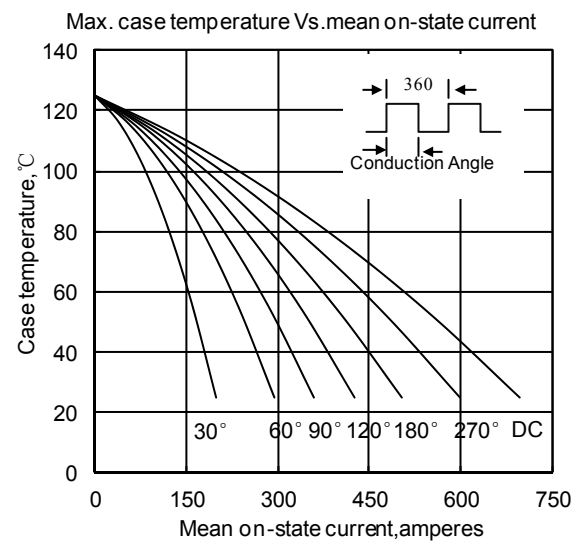


Fig. 6

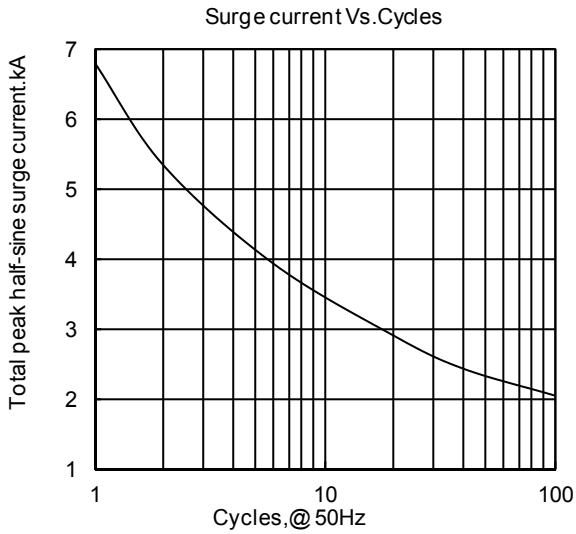


Fig. 7

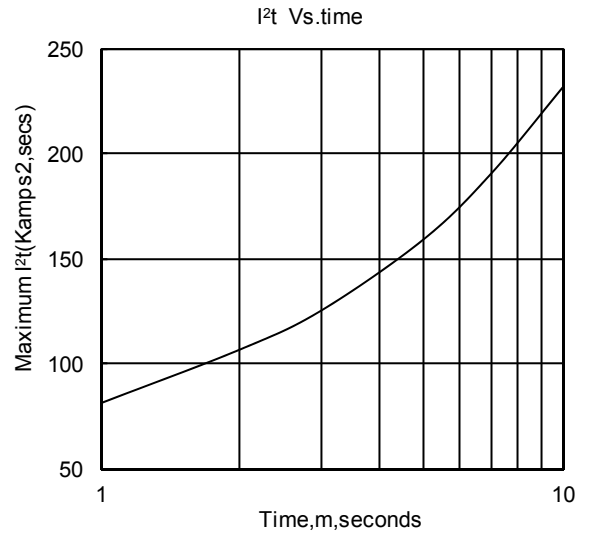


Fig. 8

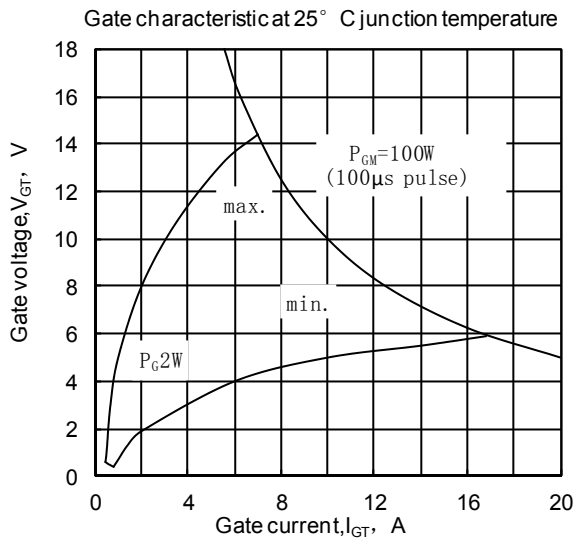


Fig. 9

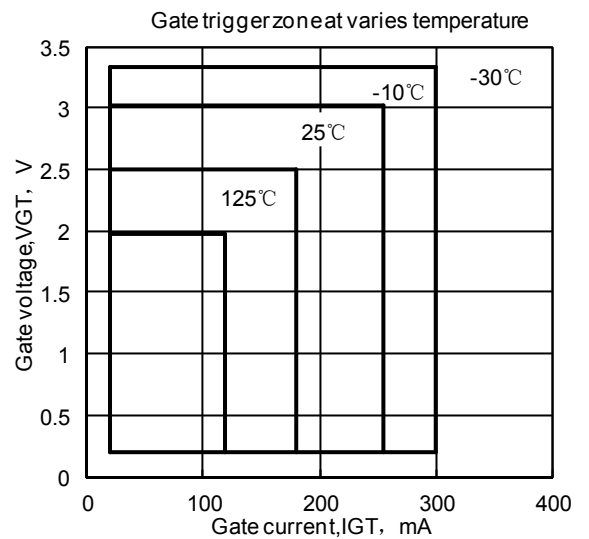


Fig. 10

Outline:

