GD RECTIFIERS
*The Custom Power Specialist*

# MTC1200 MTA1200 MTK1200 MTX1200 MT1200
## Thyristor Modules

**Features:**

- Isolated mounting base 2500V~
- Pressure contact technology with Incrtased power cycling capability
- Space and weight savings

**Typical Applications:**

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

| | |
|---|---|
| $I_{T(AV)}$ | 1200A |
| $V_{DRM}/V_{RRM}$ | 600~1800V |
| $I_{TSM}$ | 34 KA |
| $I^2t$ | 5780 $10^3A^2S$ |

| SYMBOL | CHARACTERISTIC | TEST CONDITIONS | $T_j$(°C) | VALUE | | | UNIT |
|---|---|---|---|---|---|---|---|
| | | | | Min | Type | Max | |
| $I_{T(AV)}$ | Mean on-state current | 180° half sine wave 50Hz<br>Single side cooled, $T_c$=85°C | 125 | | | 1200 | A |
| $I_{T(RMS)}$ | RMS on-state current | | 125 | | | 1884 | A |
| $V_{DRM}$<br>$V_{RRM}$ | Repetitive peak off-state voltage<br>Repetitive peak reverse voltage | $V_{DRM}$&$V_{RRM}$ tp=10ms<br>$V_{DSM}$&$V_{RSM}$= $V_{DRM}$&$V_{RRM}$+100V | 125 | 600 | | 1800 | V |
| $I_{DRM}$<br>$I_{RRM}$ | Repetitive peak current | $V_{DM}$= $V_{DRM}$<br>$V_{RM}$= $V_{RRM}$ | 125 | | | 55 | mA |
| $I_{TSM}$ | Surge on-state current | 10ms half sine wave ,<br>$V_R$=0.6$V_{RRM}$ | 125 | | | 34.0 | KA |
| $I^2t$ | $I^2T$ for fusing coordination | | | | | 5480 | $A^2s*10^3$ |
| $V_{TO}$ | Threshold voltage | | 125 | | | 0.80 | V |
| $r_T$ | On-state slop resistance | | | | | 0.09 | mΩ |
| $V_{TM}$ | Peak on-state voltage | $I_{TM}$=3000A | 25 | | | 1.76 | V |
| dv/dt | Critical rate of rise of off-state voltage | $V_{DM}$=67%$V_{DRM}$ | 125 | | | 800 | V/μs |
| di/dt | Critical rate of rise of on-state current | $I_{TM}$ =2400A,<br>Gate source 1.5A<br>$t_r$≤0.5μs Repetitive | 125 | | | 100 | A/μs |
| $I_{GT}$ | Gate trigger current | $V_A$=12V, $I_A$=1A | 25 | 30 | | 200 | mA |
| $V_{GT}$ | Gate trigger voltage | | | 1.0 | | 3.0 | V |
| $I_H$ | Holding current | | | 20 | | 200 | mA |
| $V_{GD}$ | Non-trigger gate voltage | $V_{DM}$=67%$V_{DRM}$ | 125 | 0.2 | | | V |
| $R_{th(j-c)}$ | Thermal resistance<br>Junction to case | Single side cooled | | | | 0.031 | °C /W |
| $R_{th(c-h)}$ | Thermal resistance<br>case to heatsink | Single side cooled | | | | 0.020 | °C /W |
| $V_{iso}$ | Isolation voltage | 50Hz,R.M.S,t=1min,$I_{iso}$ :1mA(MAX) | | 2500 | | | V |
| $F_m$ | Thermal connection torque(M12) | | | | 12 | | N·m |
| | Mounting torque(M8) | | | | 12 | | N·m |
| $T_{stg}$ | Stored temperature | | | -40 | | 125 | °C |
| $W_t$ | Weight | | | | 3800 | | g |
| Outline | 412F3 | | | | | | |

Peak On-state Voltage Vs.Peak On-state Current

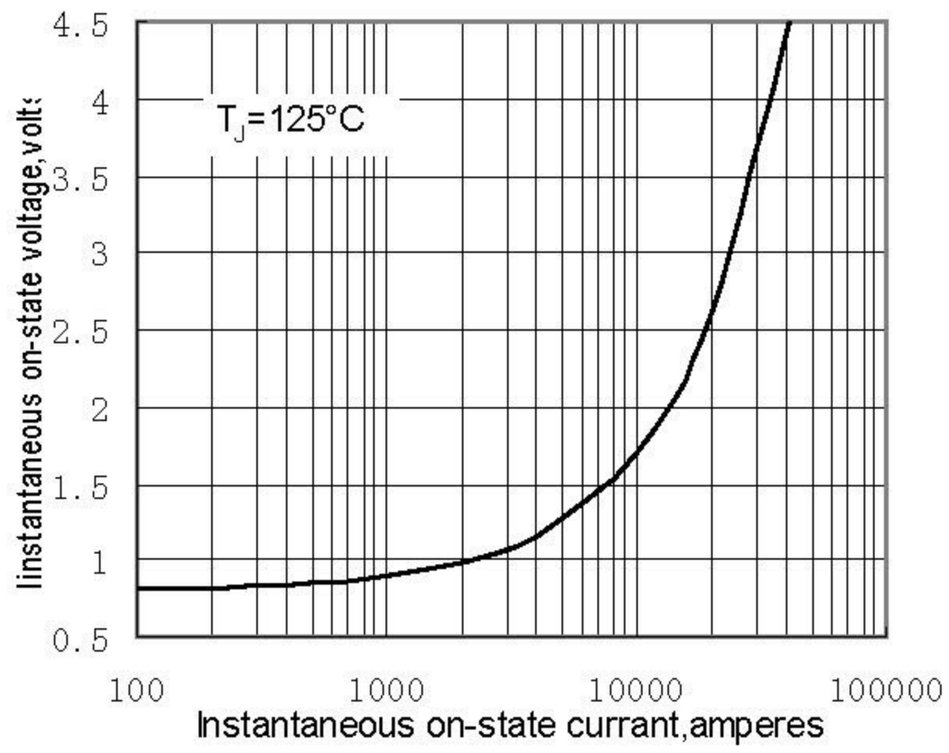



Fig.1

Max. junction To case Thermai Impedance Vs.Time

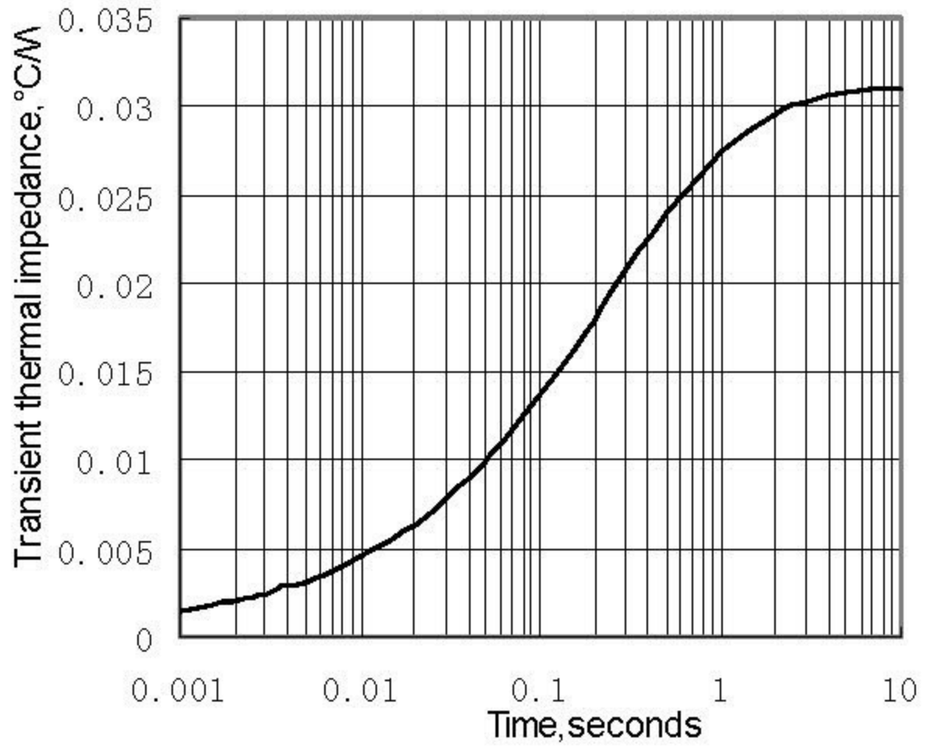



Fig.2

Max. Power Dissipation Vs.Mean On-state Current

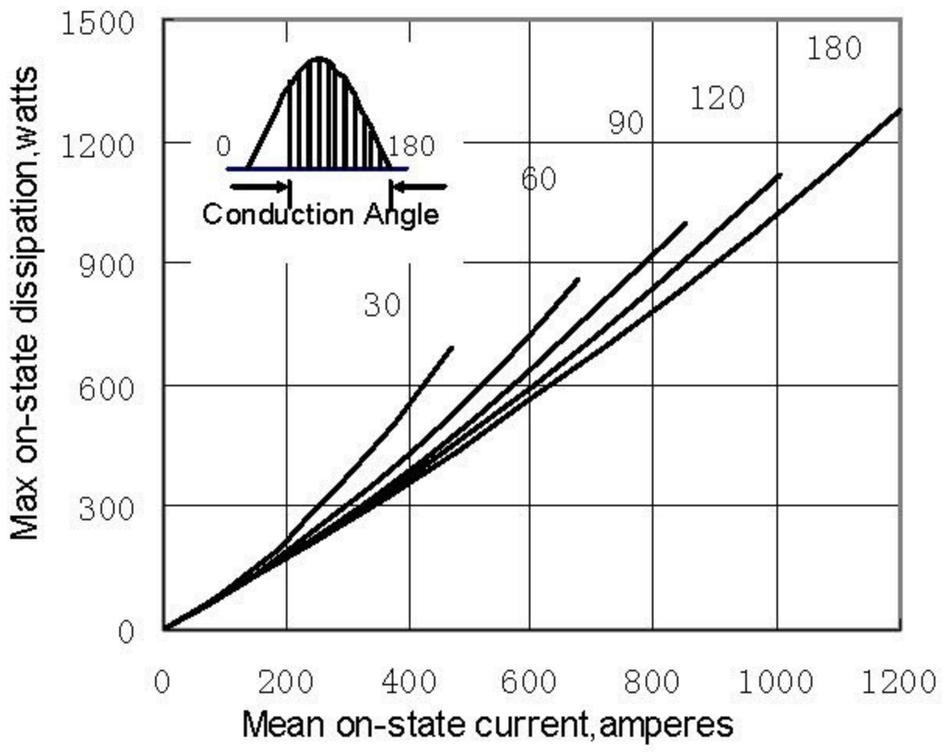



Fig.3

Max. case Temperature Vs.Mean On-state Current

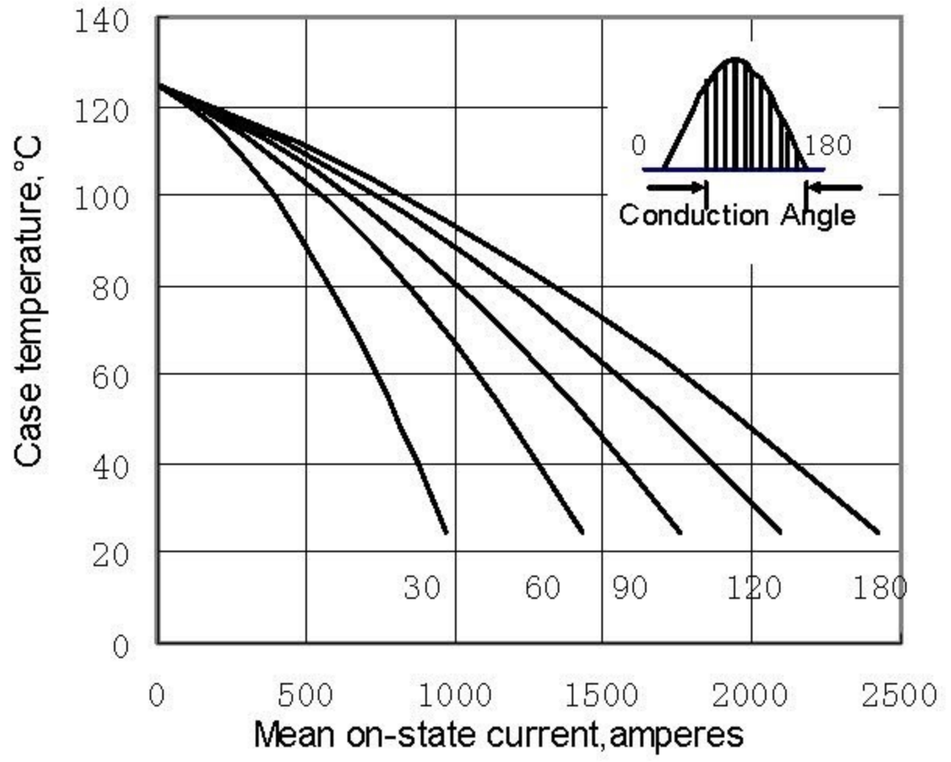



Fig.4

Max. Power Dissipation Vs.Mean On-state Current

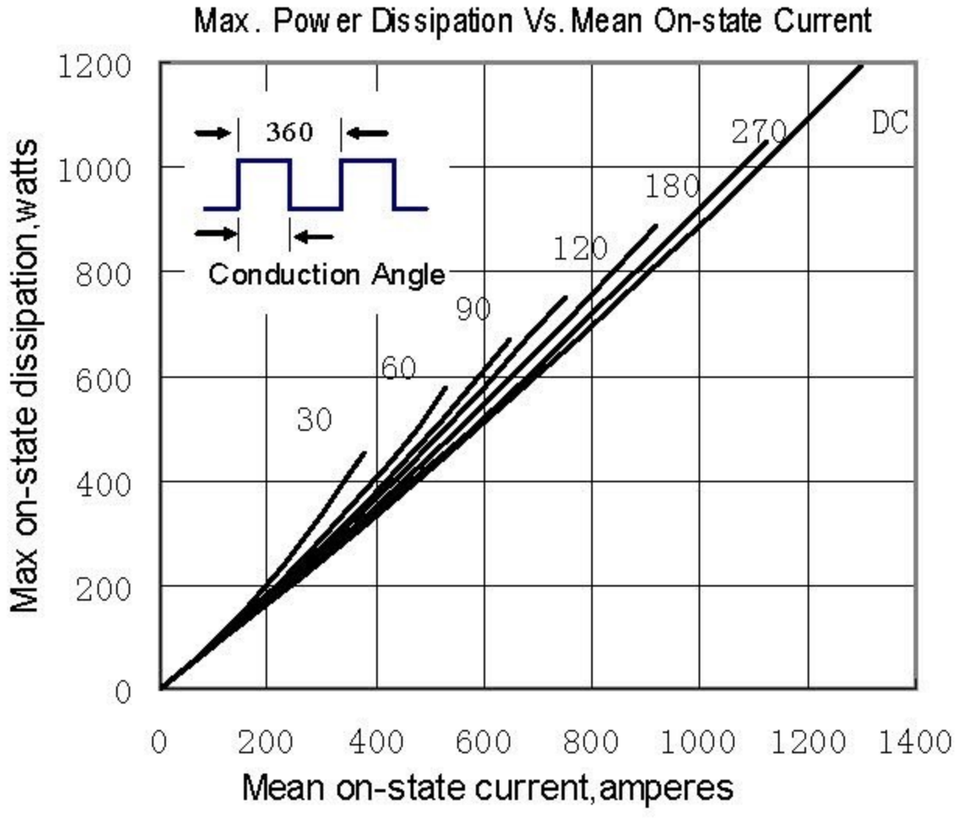



Fig.5

Max. case Temperature Vs.Mean On-state Current

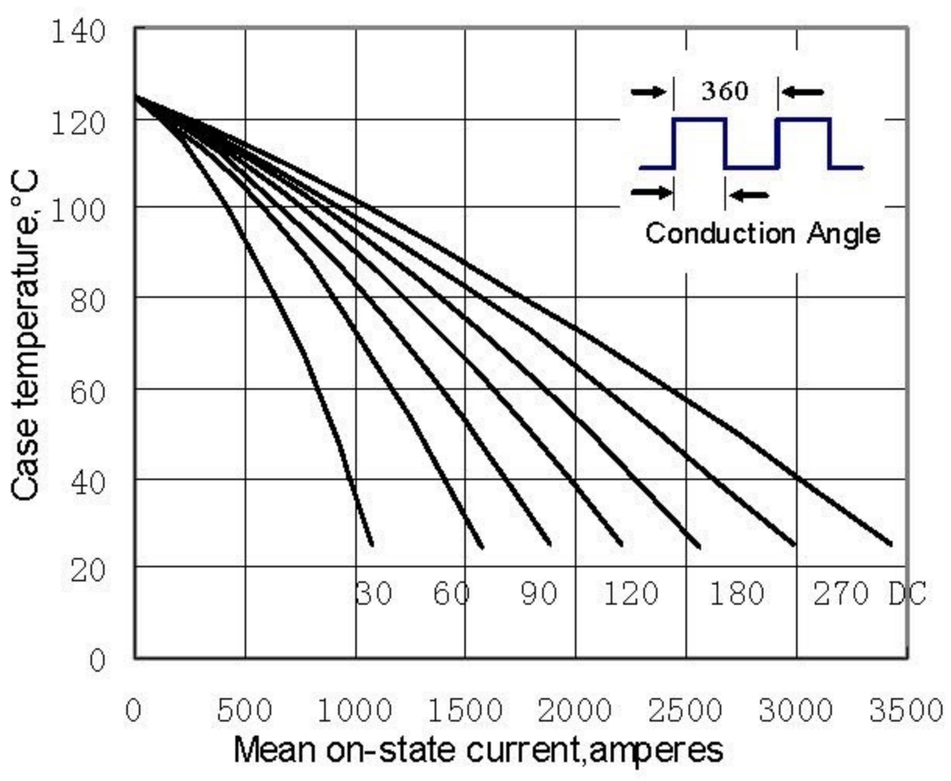



Fig.6

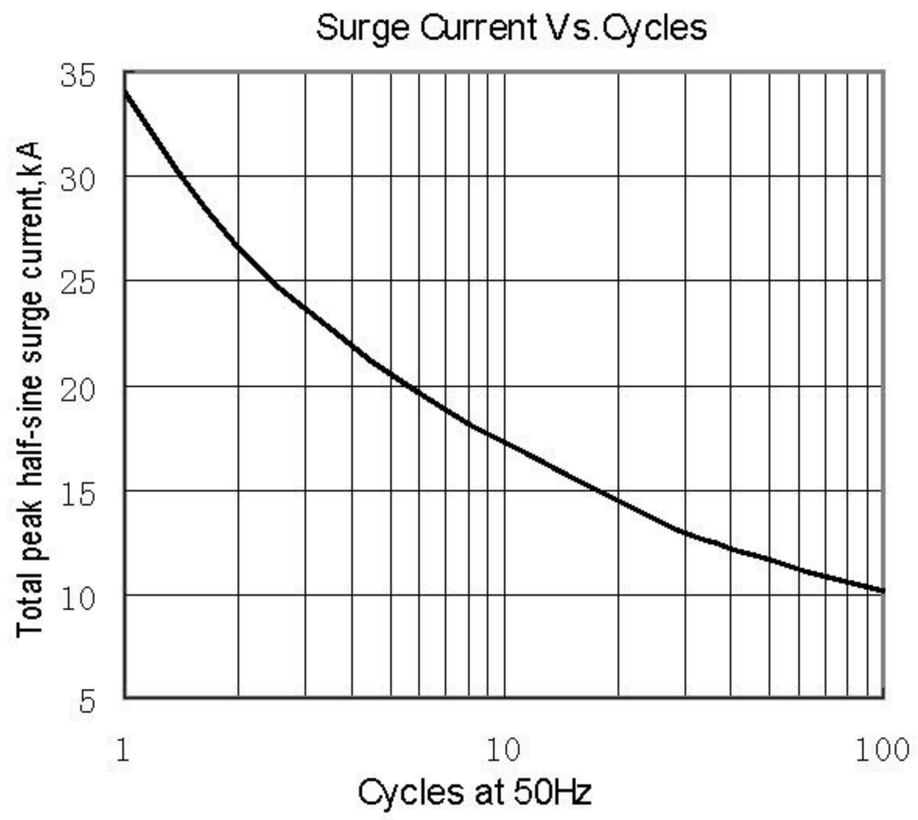



Fig.7

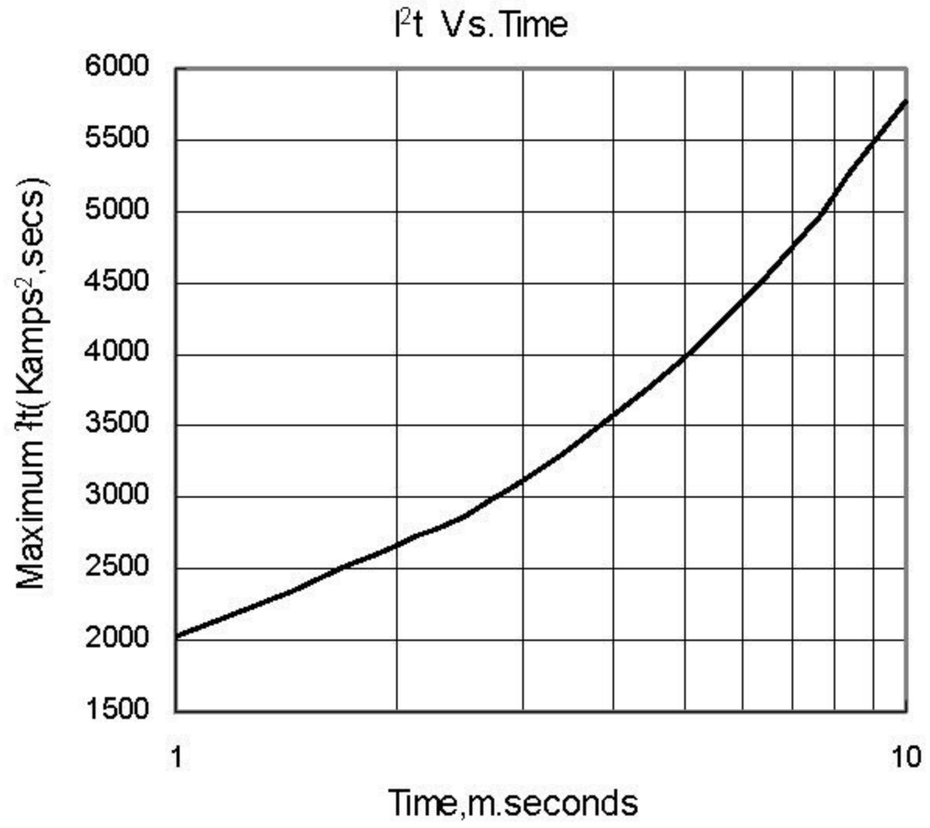



Fig.8

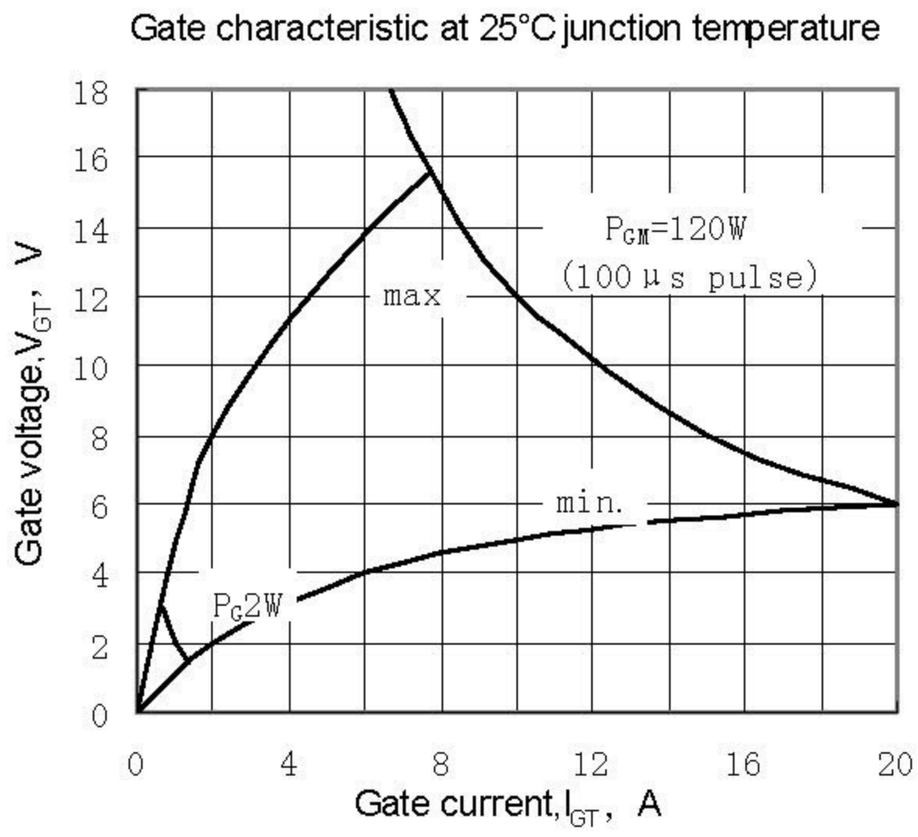



Fig.9

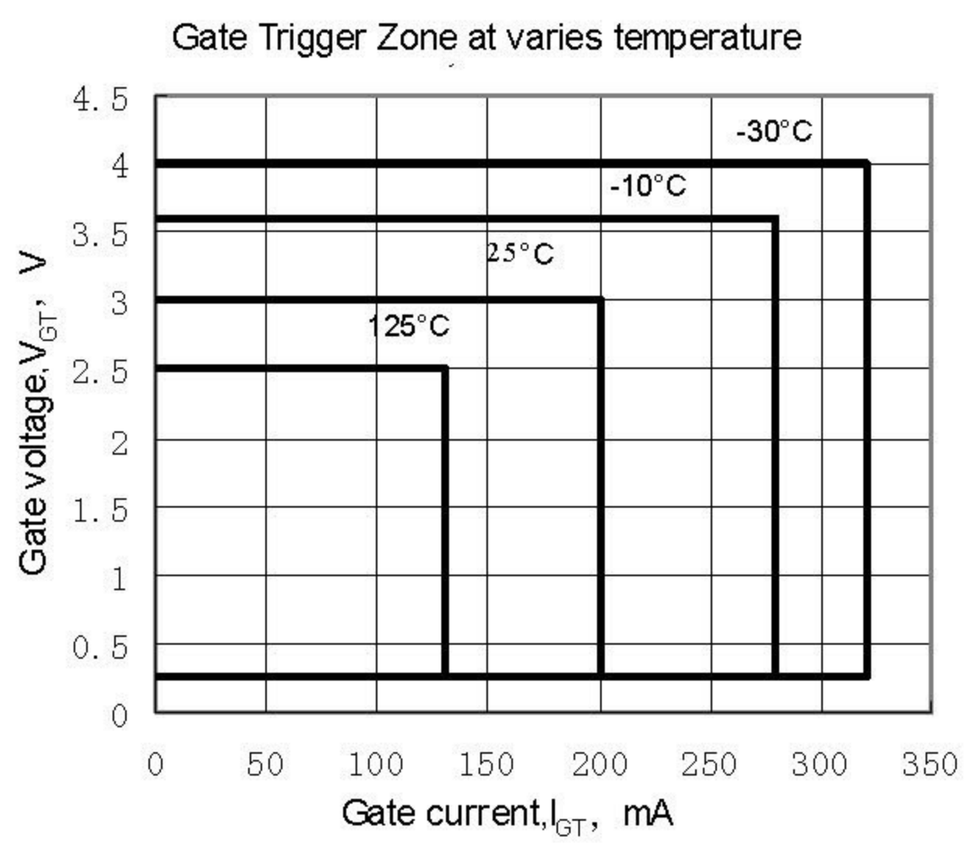
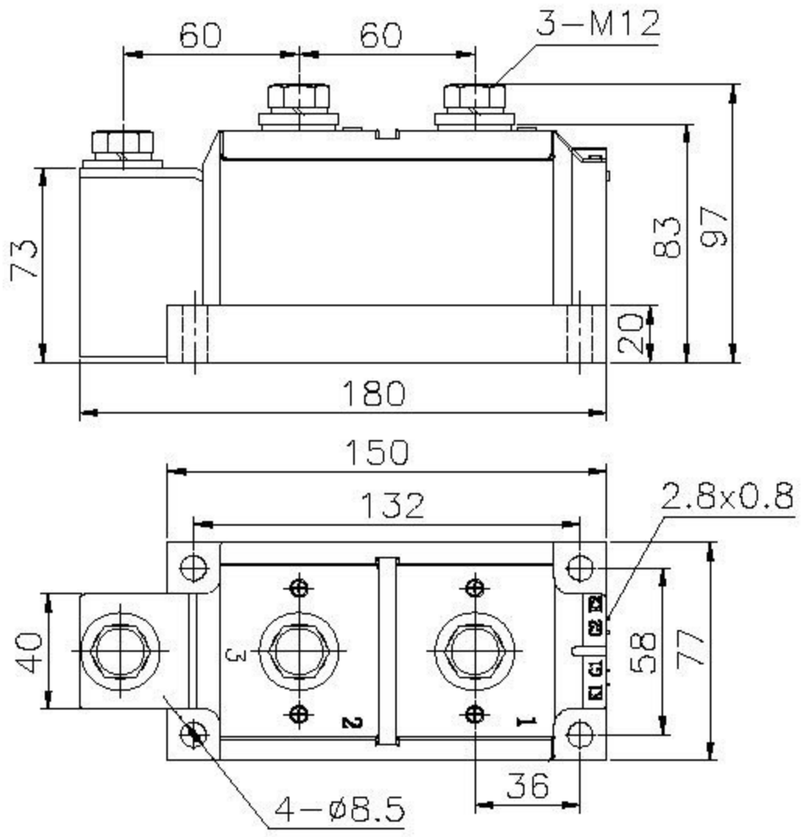



Fig.10

**Outline:**




**412F3**