



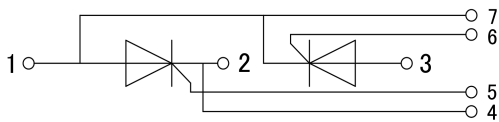
## Thyristor Modules

**VRRM / VDRM** 1200 to 1600V  
**ITAV** 300A

### Applications

- Power Converters
- Lighting Control
- DC Motor Control and Drives
- Heat and temperature control

### Circuit



### Features

- International standard package
- High Surge Capability
- Simple Mounting

### Module Type

| TYPE       | VDRM/VRRM | VDSM/VRSM |
|------------|-----------|-----------|
| MT300C12T3 | 1200V     | 1400V     |
| MT300C14T3 | 1400V     | 1600V     |
| MT300C16T3 | 1600V     | 1800V     |

### Maximum Ratings

| Symbol | Conditions                             | Values     | Units |
|--------|----------------------------------------|------------|-------|
| ITAV   | Sine 180°;Tc=85℃                       | 300        | A     |
| ITSM   | Tvj=125℃ t=10ms, sine                  | 9100       | A     |
| i²t    | Tvj=125℃ t=10ms, sine                  | 414000     | A²s   |
| Visol  | a.c.50HZ;r.m.s.;1min,Iiso :2mA(MAX)    | 2500       | V     |
| Tvj    |                                        | -40 to 125 | ℃     |
| Tstg   |                                        | -40 to 125 | ℃     |
| Mt     | To terminals(M8)                       | 12±15%     | Nm    |
| Ms     | To heatsink(M6)                        | 6±15%      | Nm    |
| di/dt  | Tvj= TvJM ,IGM=1.5A tr≤1.5             | 100        | A/us  |
| dv/dt  | Tj= TvJM ,2/3VDRM, linear voltage rise | 1000       | V/us  |
| Weight | Module(Approximately)                  | 690        | g     |

### Thermal Characteristics

| Symbol   | Conditions | Values | Units |
|----------|------------|--------|-------|
| Rth(j-c) | per chip   | 0.104  | ℃/W   |
| Rth(c-h) | per module | 0.04   | ℃/W   |

## Electrical Characteristics

| Symbol            | Conditions                                                       | Values |      |      | Units      |
|-------------------|------------------------------------------------------------------|--------|------|------|------------|
|                   |                                                                  | Min.   | Typ. | Max. |            |
| $V_{TM}$          | $T=25^{\circ}\text{C}$ $I_{TM}=900\text{A}$                      |        |      | 1.55 | V          |
| $I_{RRM}/I_{DRM}$ | $T_{VJ}=T_{VJM}$ , $V_R=V_{RRM}$ , $V_D=V_{DRM}$                 |        |      | 25   | mA         |
| $V_{TO}$          | $T_{VJ}=T_{VJM}$                                                 |        |      | 0.8  | V          |
| $r_T$             | $T_{VJ}=T_{VJM}$                                                 |        |      | 0.65 | m $\Omega$ |
| $V_{GT}$          | $T_{VJ}=25^{\circ}\text{C}$ , $V_D=12\text{V}$ , $R_G=3\ \Omega$ | 0.8    |      | 2.5  | V          |
| $I_{GT}$          | $T_{VJ}=25^{\circ}\text{C}$ , $V_D=12\text{V}$ , $R_G=3\ \Omega$ | 30     |      | 150  | mA         |
| $I_L$             | $T_{VJ}=25^{\circ}\text{C}$ , $V_D=12\text{V}$ , $R_G=3\ \Omega$ |        |      | 1000 | mA         |
| $I_H$             | $T_{VJ}=25^{\circ}\text{C}$ , $V_D=12\text{V}$ , $R_G=3\ \Omega$ | 20     |      | 150  | mA         |

## Performance Curves

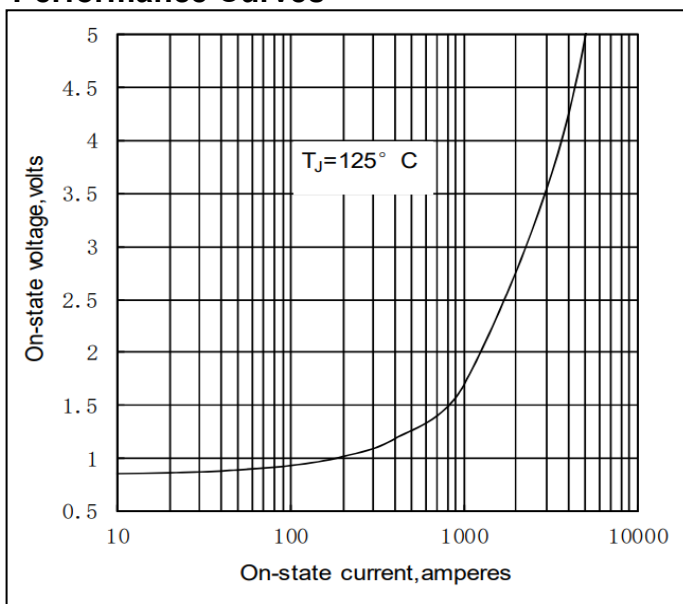


Fig1. Peak On-state Voltage Vs Peak On-state

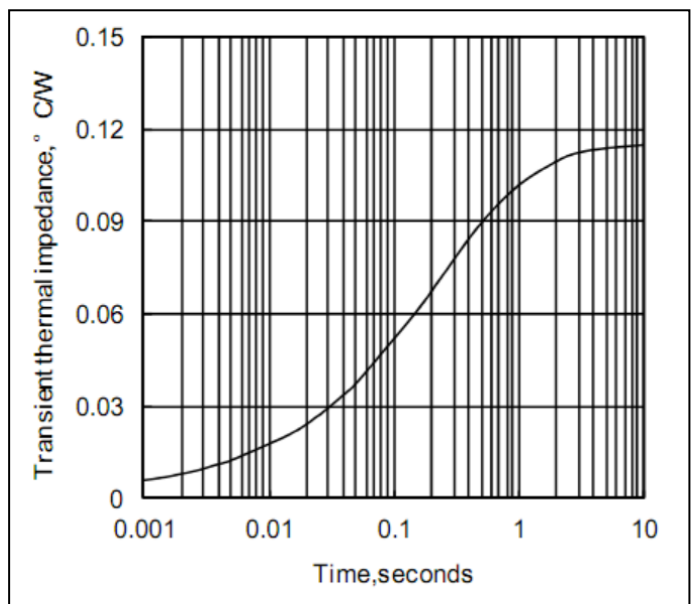


Fig2. Max. junction To case Thermal Impedance Vs Time

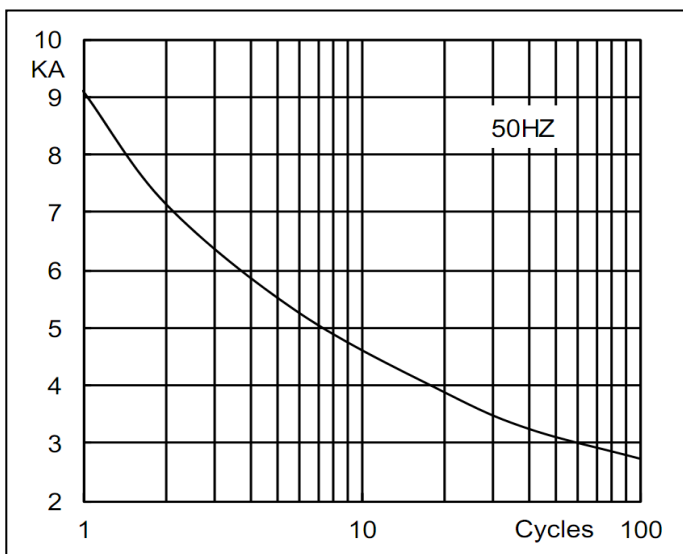


Fig3. Surge Current Vs Cycles

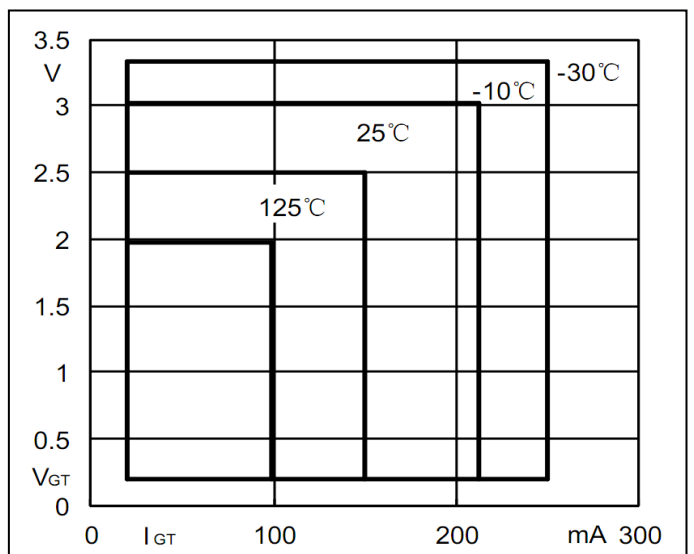
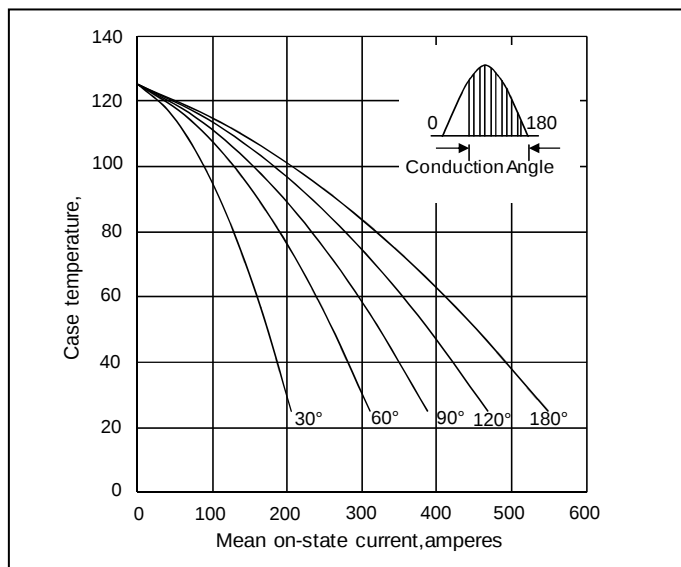
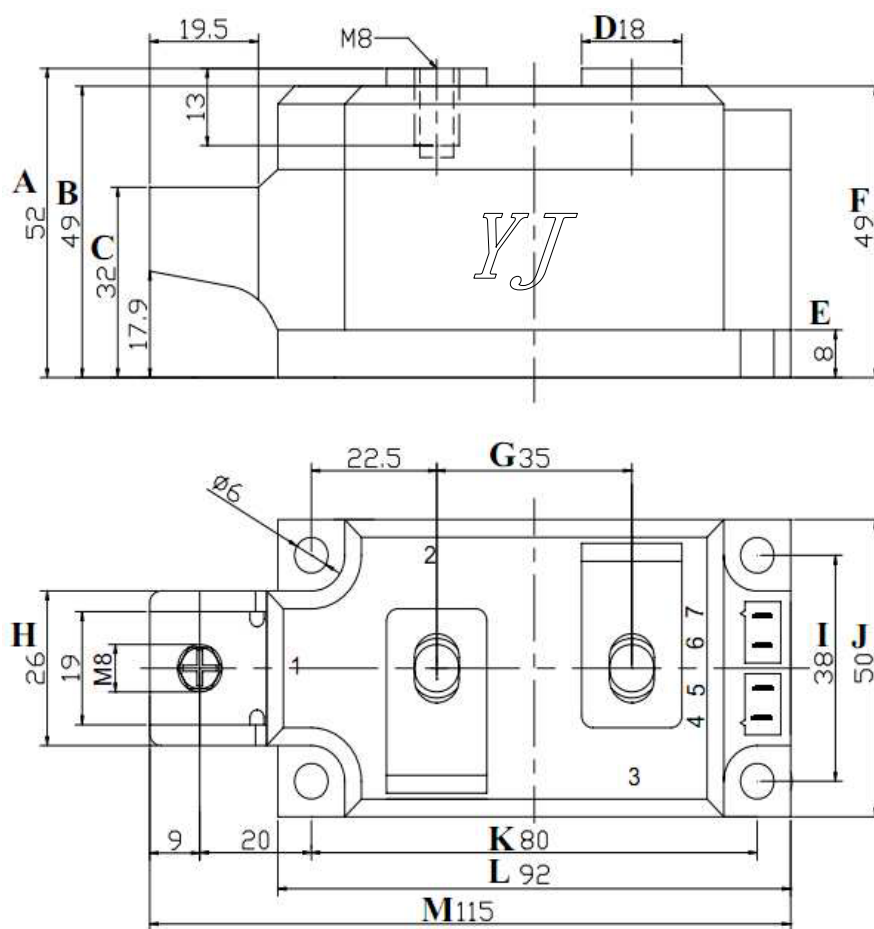


Fig4. Gate Trigger Zone at varies temperature



**Fig6. Max case Temperature Vs Mean On-state Current**

### CASE: T3



**Dimensions in mm**