



GENERAL PURPOSE THYRISTOR MODULE

Features:

- . Electrical insulation between chip and base plate, 2500V AC insulation
- . Compact structure
- . Excellent temperature characteristics and power cycling capability
- . Small size & light weight

Typical application:

- . AC / DC motor control
- . Various rectification power supplies
- . Frequency converter



ELECTRICAL CHARACTERISTICS AND RATINGS

| Symbol | Parameter | Conditions | Tj (°C) | Value | | | Unit |
|--------------------------------------|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|---------|-------|-----|-------|----------------------------------|
| | | | | Min | Typ | Max | |
| I _{T(AV)} | Mean on-state current | Sine wave 180°, 50Hz Single side cooling, T _c =85°C | 125 | | | 110 | A |
| I _{T(RMS)} | RMS on-state current | | 125 | | | 173 | A |
| V _{DRM} V _{RRM} | Repetitive peak off-state voltage Repetitive peak reverse voltage | V _{DRM} &V _{RRM} tp=10ms V _{DSM} &V _{RSM} =V _{DRM} &V _{RRM} +200V | 25 | 1200 | | 2000 | V |
| I _{DRM} | Repetitive peak off-state current | V _{DM} = V _{DRM} | 125 | | | 15 | mA |
| I _{RRM} | Repetitive peak reverse current | V _{RM} = V _{RRM} | | | | | |
| I _{TSM} | Surge on-state current | 10ms bottom width, half sine wave | 125 | | | 2.4 | KA |
| I ² t | I squared t | V _R =0.6V _{RRM} | | | | 29 | A ² s*10 ³ |
| V _{TO} | On-state threshold voltage | | 125 | | | 0.8 | V |
| r _T | Slope resistance | | | | | 2.29 | mΩ |
| V _{TM} | Peak on-state voltage | I _{TM} =330A | 25 | | | 1.45 | V |
| dv/dt | Critical rise rate of off-state voltage | V _{DM} =67%V _{DRM} | 125 | | | 1000 | V/μs |
| di/dt | Critical rise rate of on-state current | I _{TM} =220A Amplitude of gate trigger current I _{GM} = 1.5A Gate current rise time t _r ≤0.5 s | 125 | | | 100 | A/μs |
| I _{GT} | Gate trigger current | V _O =12V, R _L =3Ω | 25 | 30 | | 100 | mA |
| V _{GT} | Gate trigger voltage | | | 0.8 | | 1.5 | V |
| I _H | Holding current | | | 20 | | 150 | mA |
| I _L | Latching Current | | | | | 1000 | mA |
| V _{GD} | Gate non-trigger voltage | V _{DM} =67%V _{DRM} | 125 | 0.2 | | | V |
| R _{th(j-c)} | Thermal impedance(junction to case) | 180°sine wave, single side heat dissipation | | | | 0.250 | °C /W |
| R _{th(c-h)} | Thermal impedance(case to heatsink) | 180°sine wave, single side heat dissipation | | | | 0.15 | °C /W |
| V _{iso} | Insulation voltage | 50Hz,R.M.S,t=1min,I _{iso} :1mA(MAX) | | 2500 | | | V |
| F _m | Electrode mounting torque (M5) | | | | | 4 | N·m |
| | Base plate mounting torque (M6) | | | | | 6 | N·m |
| T _{stg} | Storage temperature | | | -40 | | 125 | °C |
| W _t | Weight | | | | | 160 | g |

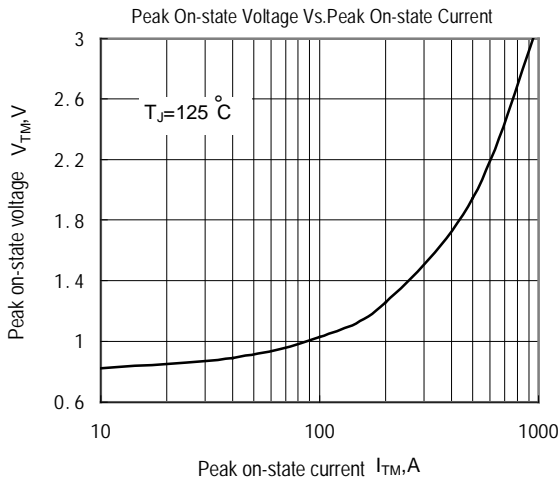


Fig.1 On-state Volt-ampere Characteristic

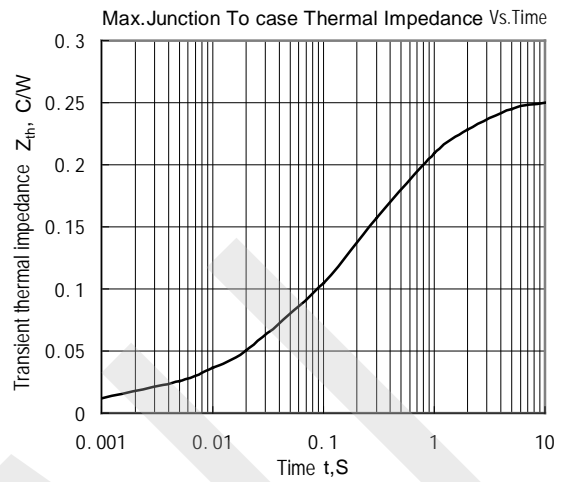


Fig.2 Transient Thermal Impedance of Junction to Case

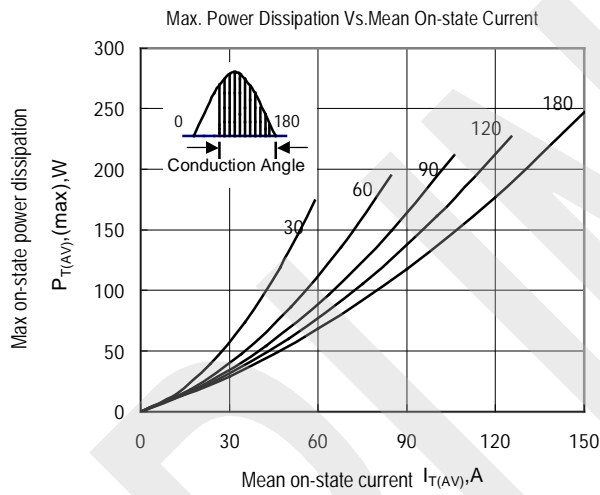


Fig.3 Max Power Dissipation Vs. Mean On-state Current

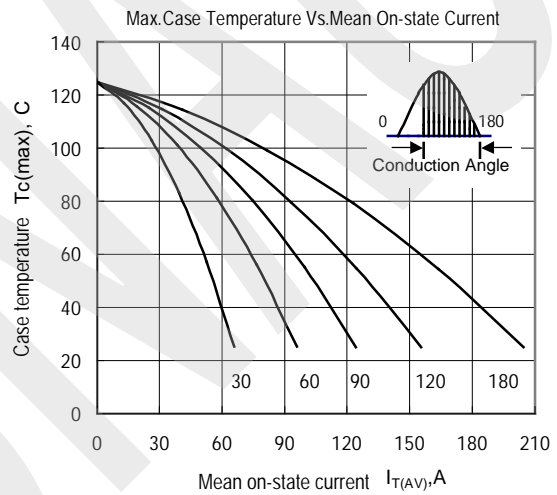


Fig.4 Max case Temperature Vs. Mean on-state Current

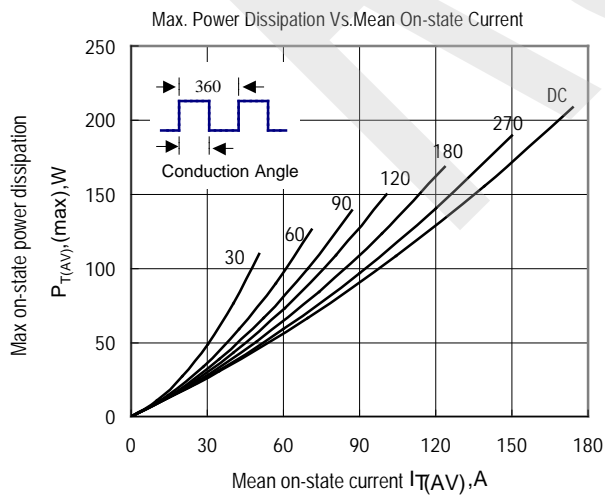


Fig.5 Max Power Dissipation Vs. Mean On-state Current

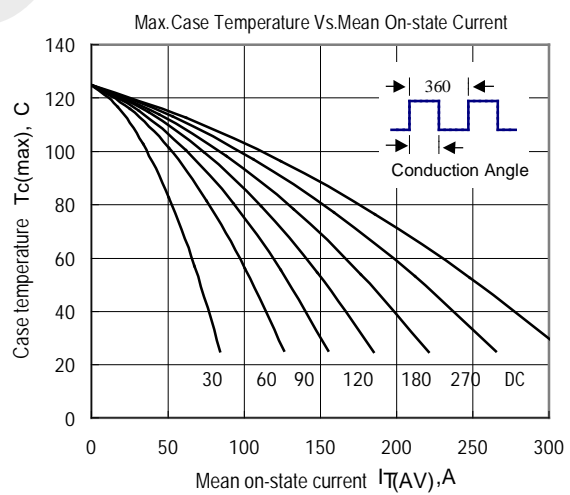


Fig.6 Max Case Temperature Vs. Mean On-state Current

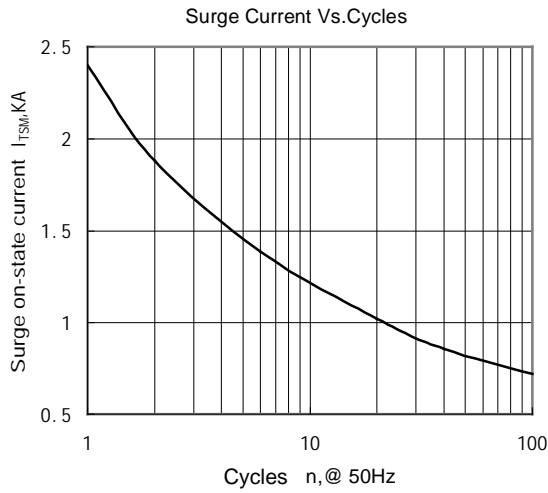


Fig.7 Surge Current Vs.Cycles

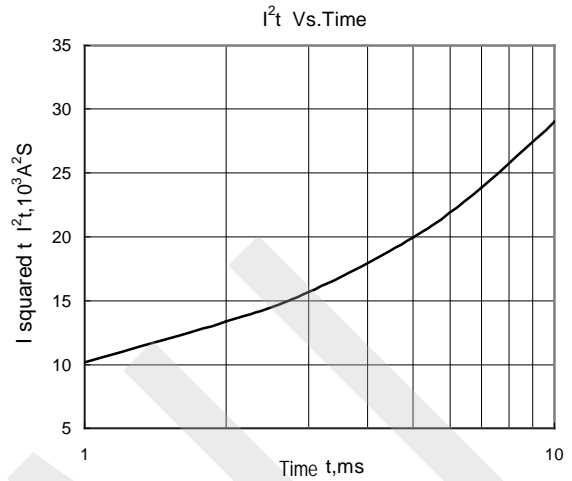


Fig.8 I^2t Vs.Time

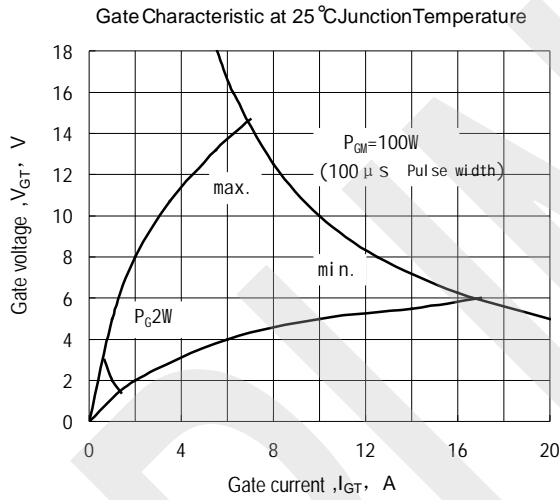


Fig.9 Gate Power Graph

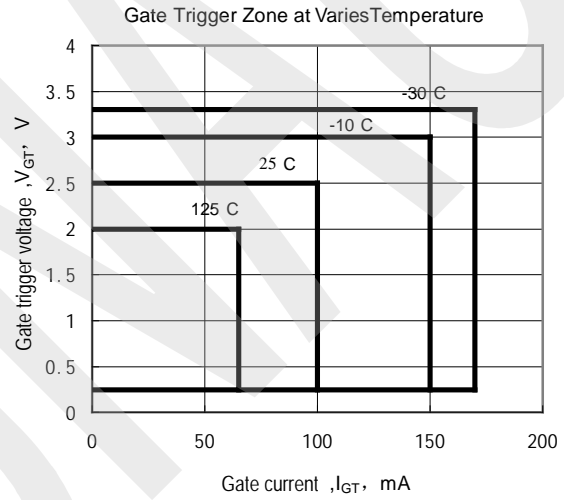


Fig.10 Gate Trigger Characteristic Graph

OUTLINE

