

TRIAC(Surface Mount Device / Non-isolated)

TMG3CQ60D

(T_j=150°C)

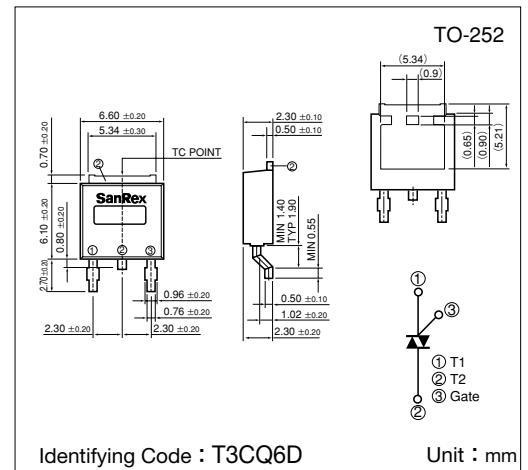
SanRex Triac TMG3CQ60D is designed for full wave AC control applications. It can be used as an ON/OFF function or for phase control operation.

Typical Applications

- Home Appliances : Washing Machines, Vacuum Cleaners, Rice Cookers, Micro Wave Ovens, Hair Dryers, other control applications
- Industrial Use : SMPS, Copier Machines, Motor Controls, Dimmer, SSR, Heater Controls, Vending Machines, other control applications

Features

- I_{T(RMS)}=3A
- High Surge Current
- Low Voltage Drop
- Lead-Free Package



Maximum Ratings

(T_j=25°C unless otherwise specified)

| Symbol | Item | Reference | Ratings | Unit |
|---------------------|-----------------------------------|---|----------|------------------|
| V _{DRM} | Repetitive Peak Off-State Voltage | | 600 | V |
| I _{T(RMS)} | R.M.S. On-State Current | T _c =136°C | 3 | A |
| I _{TSM} | Surge On-State Current | One cycle, 50Hz/60Hz, Peak value non-repetitive | 27/30 | A |
| I ² t | I ² t (for fusing) | | 3.7 | A ² S |
| P _{GM} | Peak Gate Power Dissipation | | 1.5 | W |
| P _{G(AV)} | Average Gate Power Dissipation | | 0.1 | W |
| I _{GM} | Peak Gate Current | | 1 | A |
| V _{GM} | Peak Gate Voltage | | 7 | V |
| T _j | Operating Junction Temperature | | -40~+150 | °C |
| T _{stg} | Storage Temperature | | -40~+150 | °C |
| | Mass | | 0.32 | g |

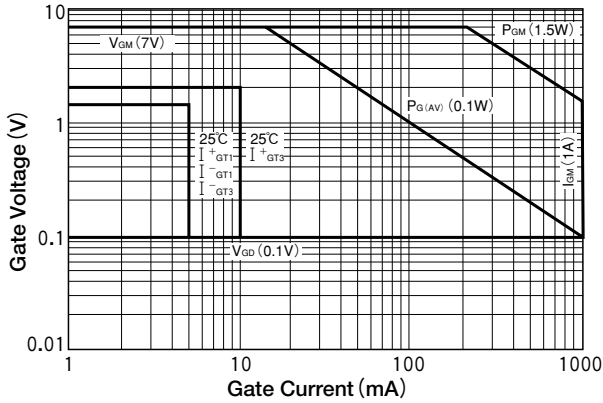
Electrical Characteristics

| Symbol | Item | Reference | Ratings | | | Unit |
|-------------------------------|---|--|---------|------|------|------|
| | | | Min. | Typ. | Max. | |
| I _{DRM} | Repetitive Peak Off-State Current | V _D =V _{DRM} , Single phase, half wave, T _j =150°C | | | 1 | mA |
| V _{TM} | Peak On-State Voltage | I _T =4.5A, Inst. measurement | | | 1.4 | V |
| I _{GT1} ⁺ | Gate Trigger Current | V _D =6V, R _L =10Ω | | | 15 | mA |
| I _{GT1} ⁻ | | | | | 15 | |
| I _{GT3} ⁺ | | | | | — | |
| I _{GT3} ⁻ | | | | | 15 | |
| V _{GT1} ⁺ | Gate Trigger Voltage | | | | 1.5 | V |
| V _{GT1} ⁻ | | | | | 1.5 | |
| V _{GT3} ⁺ | | | | | — | |
| V _{GT3} ⁻ | | | | | 1.5 | |
| V _{GD} | Non-Trigger Gate Voltage | T _j =150°C, V _D =1/2V _{DRM} | 0.1 | | | V |
| [dv/dt] _c | Critical Rate of Rise of Off-State Voltage at Commutation | T _j =150°C, [di/dt] _c =-1.5A/ms, V _D =2/3V _{DRM} | 5 | | | V/μs |
| I _H | Holding Current | | | 2 | | mA |
| R _{th(j-c)} | Thermal Resistance | Junction to case | | | 3.8 | °C/W |
| R _{th(j-a)} | | Junction to ambient | | | 60 | |

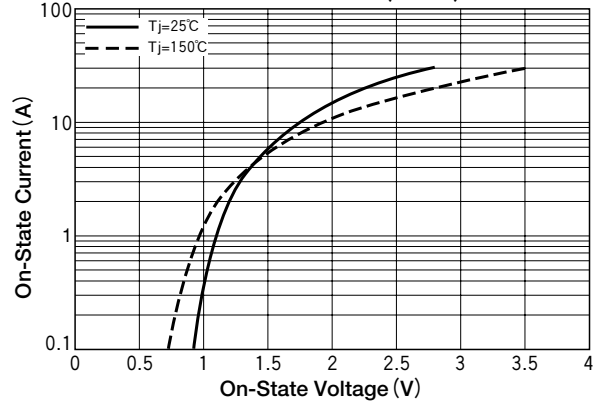
Trigger mode of the triac



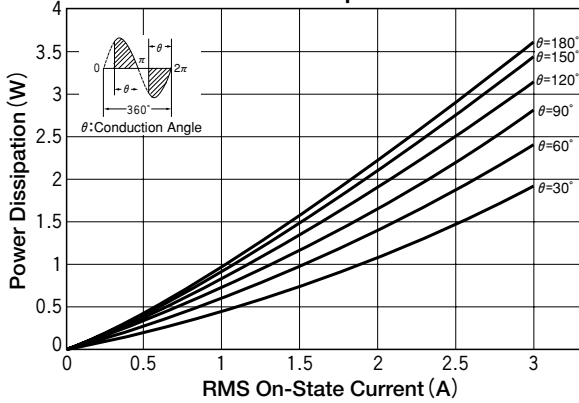
Gate Characteristics



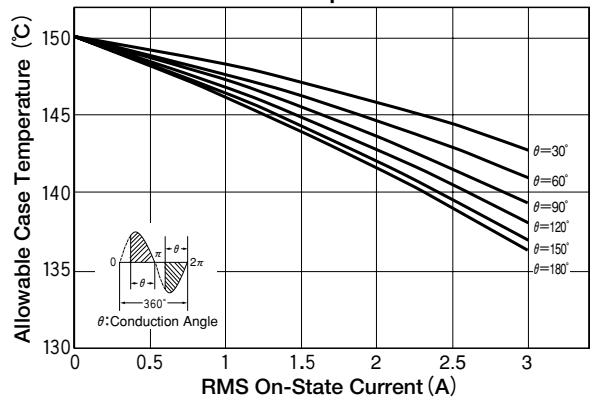
On-State Characteristics (MAX)



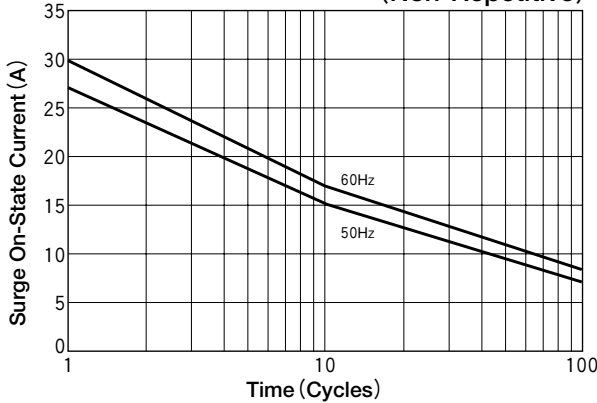
RMS On-State Current vs Maximum Power Dissipation



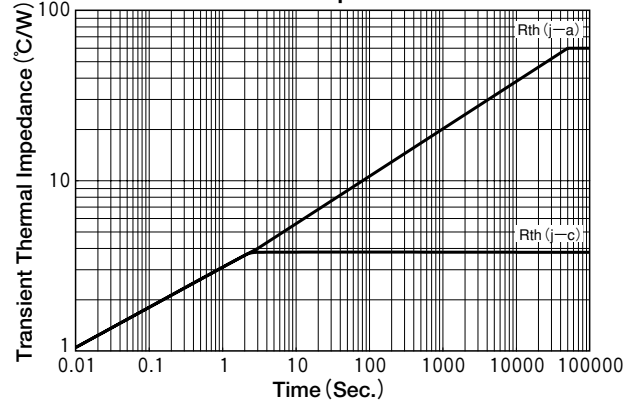
RMS On-State vs Allowable Case Temperature



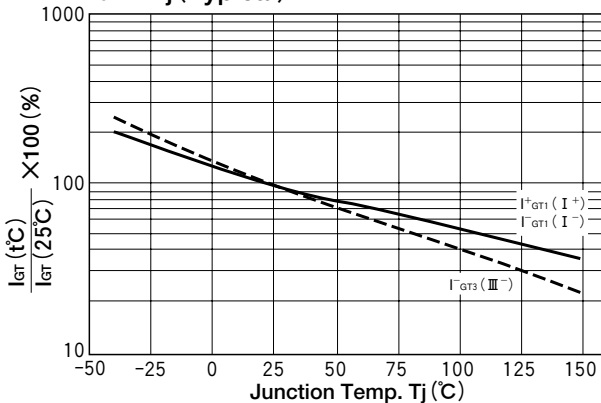
Surge On-State Current Rating (Non-Repetitive)



Transient Thermal Impedance



$I_{GT} - T_j$ (Typical)



$V_{GT} - T_j$ (Typical)

