

## TRIAC(Through Hole/Non-isolated)

## TMG2DQ60C

(T<sub>j</sub>=150°C / Sensitive Gate)

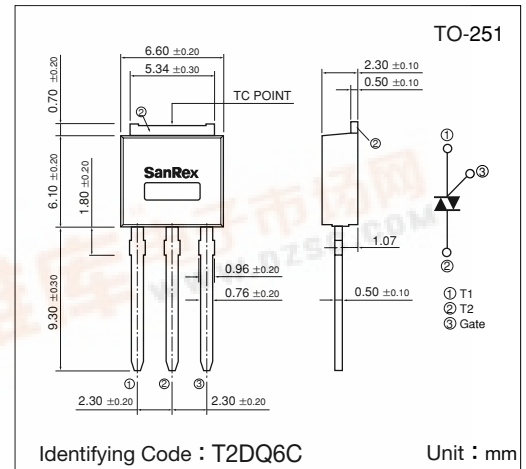
**SanRex** Triac **TMG2DQ60C** is designed for full wave AC control applications. It can be used as an ON/OFF function or for phase control operation.

## 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<sub>T(RMS)</sub>=2A
- High Surge Current
- Lead-Free Package



## Maximum Ratings

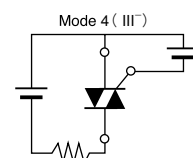
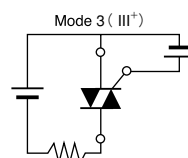
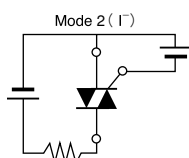
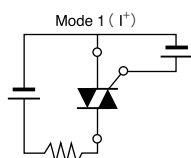
(T<sub>j</sub>=25°C unless otherwise specified)

| Symbol              | Item                              | Reference                                       | Ratings  | Unit             |
|---------------------|-----------------------------------|-------------------------------------------------|----------|------------------|
| V <sub>DRM</sub>    | Repetitive Peak Off-State Voltage |                                                 | 600      | V                |
| I <sub>T(RMS)</sub> | R.M.S. On-State Current           | T <sub>c</sub> =134°C                           | 2        | A                |
| I <sub>TSM</sub>    | Surge On-State Current            | One cycle, 50Hz/60Hz, Peak value non-repetitive | 18/20    | A                |
| I <sub>t</sub>      | I <sub>t</sub> (for fusing)       |                                                 | 1.67     | A <sup>2</sup> S |
| P <sub>GM</sub>     | Peak Gate Power Dissipation       |                                                 | 1.5      | W                |
| P <sub>G(AV)</sub>  | Average Gate Power Dissipation    |                                                 | 0.1      | W                |
| I <sub>GM</sub>     | Peak Gate Current                 |                                                 | 1        | A                |
| V <sub>GM</sub>     | Peak Gate Voltage                 |                                                 | 7        | V                |
| T <sub>j</sub>      | Operating Junction Temperature    |                                                 | -40~+150 | °C               |
| T <sub>stg</sub>    | Storage Temperature               |                                                 | -40~+150 | °C               |
|                     | Mass                              |                                                 | 0.39     | g                |

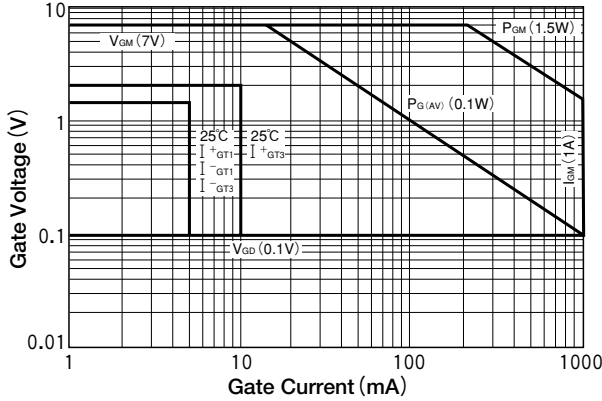
## Electrical Characteristics

| Symbol                        | Item                                                      | Reference                                                                              | Ratings |      |      | Unit |     |
|-------------------------------|-----------------------------------------------------------|----------------------------------------------------------------------------------------|---------|------|------|------|-----|
|                               |                                                           |                                                                                        | Min.    | Typ. | Max. |      |     |
| I <sub>DRM</sub>              | Repetitive Peak Off-State Current                         | V <sub>D</sub> =V <sub>DRM</sub> , Single phase, half wave, T <sub>j</sub> =150°C      |         |      | 1    | mA   |     |
| V <sub>TM</sub>               | Peak On-State Voltage                                     | I <sub>T</sub> =3A, Inst. measurement                                                  |         |      | 1.6  | V    |     |
| I <sub>GT1</sub> <sup>+</sup> | 1Gate Trigger Current                                     | V <sub>D</sub> =6V, R <sub>L</sub> =10Ω                                                |         |      | 5    | mA   |     |
| I <sub>GT1</sub> <sup>-</sup> |                                                           |                                                                                        | 2       |      |      |      | 5   |
| I <sub>GT3</sub> <sup>+</sup> |                                                           |                                                                                        | 3       |      |      |      | 10  |
| I <sub>GT3</sub> <sup>-</sup> |                                                           |                                                                                        | 4       |      |      |      | 5   |
| V <sub>GT1</sub> <sup>+</sup> | 1Gate Trigger Voltage                                     |                                                                                        |         |      | 1.5  | V    |     |
| V <sub>GT1</sub> <sup>-</sup> |                                                           |                                                                                        | 2       |      |      |      | 1.5 |
| V <sub>GT3</sub> <sup>+</sup> |                                                           |                                                                                        | 3       |      |      |      | 2.0 |
| V <sub>GT3</sub> <sup>-</sup> |                                                           |                                                                                        | 4       |      |      |      | 1.5 |
| V <sub>GD</sub>               | Non-Trigger Gate Voltage                                  | T <sub>j</sub> =150°C, V <sub>D</sub> =½V <sub>DRM</sub>                               | 0.1     |      |      | V    |     |
| [dv/dt] <sub>c</sub>          | Critical Rate of Rise of Off-State Voltage at Commutation | T <sub>j</sub> =150°C, [di/dt] <sub>c</sub> =-1A/ms, V <sub>D</sub> =⅔V <sub>DRM</sub> | 1       |      |      | V/μs |     |
| I <sub>H</sub>                | Holding Current                                           |                                                                                        |         | 2    |      | mA   |     |
| R <sub>th</sub> (j-c)         | Thermal Resistance                                        | Junction to case                                                                       |         |      | 5.8  | °C/W |     |
| R <sub>th</sub> (j-a)         |                                                           | Junction to ambient                                                                    |         |      | 60   | °C/W |     |

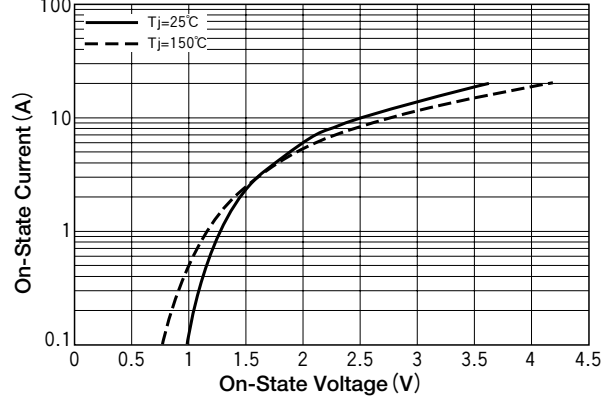
Trigger mode of the triac



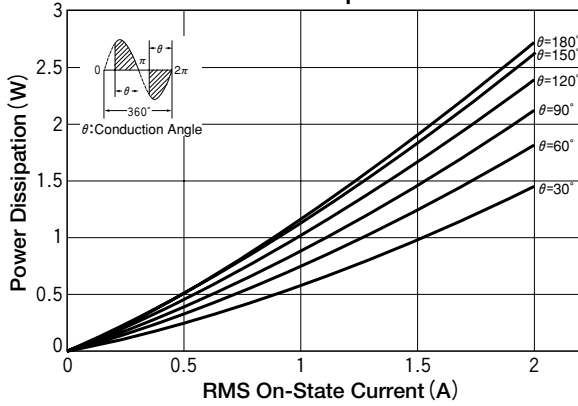
## Gate Characteristics



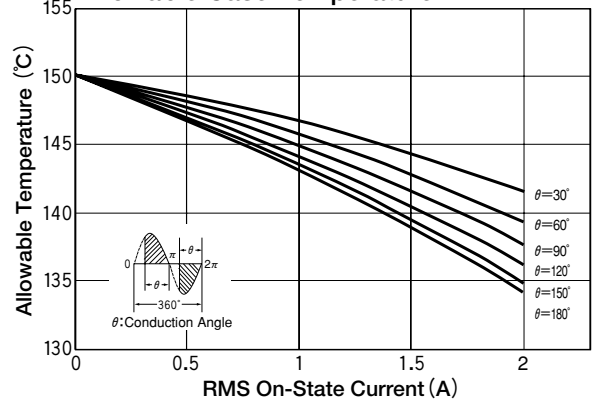
## On-State Characteristics (MAX)



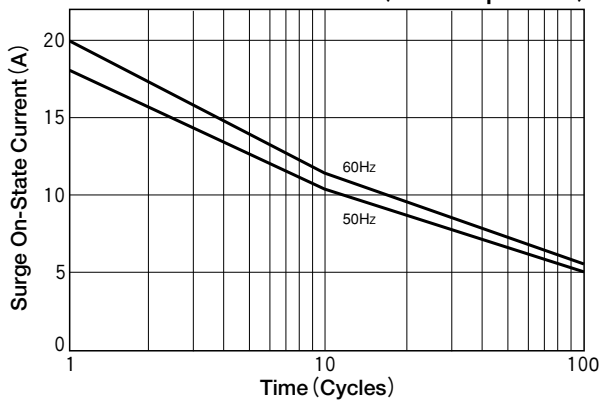
## RMS On-State Current vs Maximum Power Dissipation



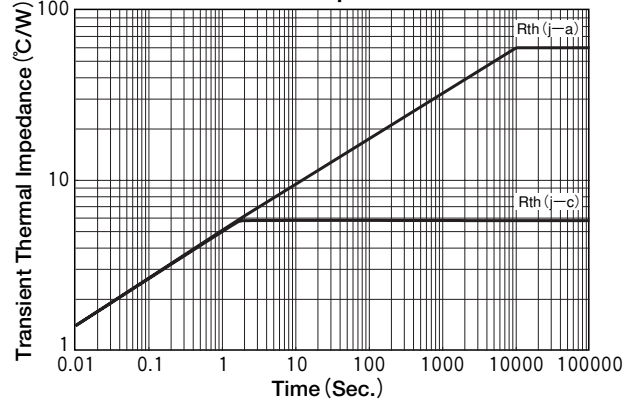
## RMS On-State vs Allowable Case Temperature



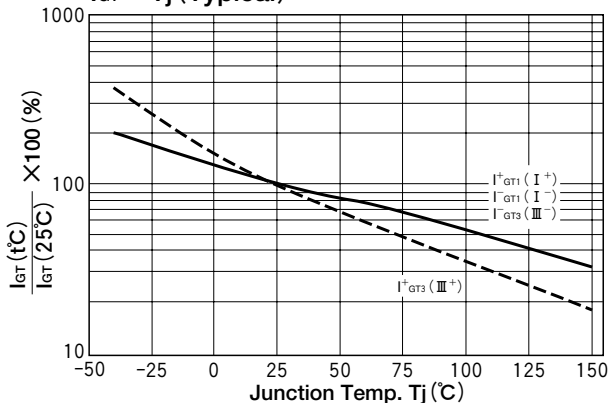
## Surge On-State Current Rating (Non-Repetitive)



## Transient Thermal Impedance



## IGT — Tj (Typical)



## VGT — Tj (Typical)

