

# TRIAC(Through Hole / Isolated)

# TMG25C60F

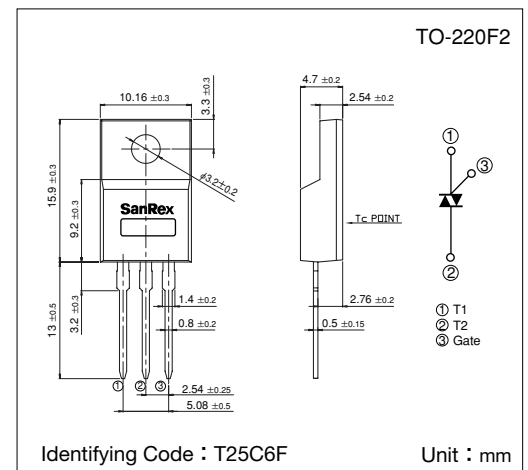
**SanRex** Triac TMG25C60F is designed for full wave AC control applications. It can be used as an ON/OFF function or for phase control operation.

## 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

- $I_{T(RMS)}=25A$
- High Surge Current
- Low Voltage Drop
- Lead-Free Package



## Maximum Ratings

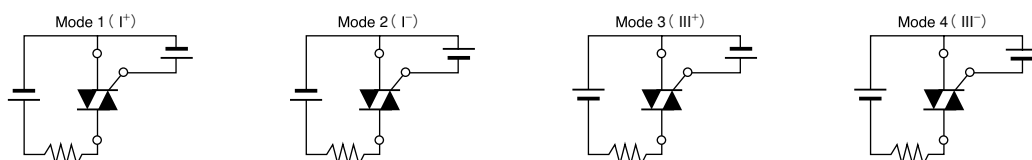
( $T_j=25^{\circ}C$  unless otherwise specified)

| Symbol       | Item                                 | Reference                                       | Ratings         | Unit        |
|--------------|--------------------------------------|-------------------------------------------------|-----------------|-------------|
| $V_{DRM}$    | Repetitive Peak Off-State Voltage    |                                                 | 600             | V           |
| $I_{T(RMS)}$ | R.M.S. On-State Current              | $T_c=68^{\circ}C$                               | 25              | A           |
| $I_{TSM}$    | Surge On-State Current               | One cycle, 50Hz/60Hz, Peak value non-repetitive | 225/250         | A           |
| $I^2t$       | $I^2t$ (for fusing)                  |                                                 | 260             | $A^2S$      |
| PGM          | Peak Gate Power Dissipation          |                                                 | 5               | W           |
| $P_G(AV)$    | Average Gate Power Dissipation       |                                                 | 0.5             | W           |
| $I_{GM}$     | Peak Gate Current                    |                                                 | 2               | A           |
| $V_{GM}$     | Peak Gate Voltage                    |                                                 | 10              | V           |
| $V_{ISO}$    | Isolation Breakdown Voltage (R.M.S.) | A.C. 1minute                                    | 1500            | V           |
| $T_j$        | Operating Junction Temperature       |                                                 | $-40 \sim +125$ | $^{\circ}C$ |
| $T_{stg}$    | Storage Temperature                  |                                                 | $-40 \sim +150$ | $^{\circ}C$ |
|              | Mass                                 |                                                 | 2.2             | g           |

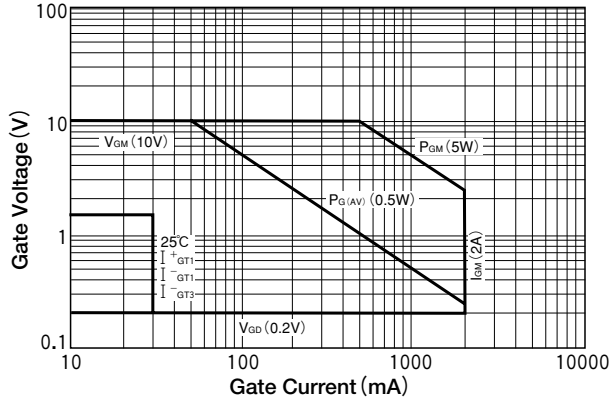
## Electrical Characteristics

| Symbol            | Item                                                      | Reference                                  | Ratings              |      |      | Unit |   |
|-------------------|-----------------------------------------------------------|--------------------------------------------|----------------------|------|------|------|---|
|                   |                                                           |                                            | Min.                 | Typ. | Max. |      |   |
| IDRM              | Repetitive Peak Off-State Current                         | VD=VDRM, Single phase, half wave, Tj=125°C |                      |      | 5    | mA   |   |
| VTM               | Peak On-State Voltage                                     | IT=35A, Inst. measurement                  |                      |      | 1.4  | V    |   |
| IGT1 <sup>+</sup> | 1                                                         | VD=6V, RL=10Ω                              |                      |      | 30   | mA   |   |
| IGT1 <sup>−</sup> | 2                                                         |                                            |                      |      | 30   |      |   |
| IGT3 <sup>+</sup> | 3                                                         |                                            |                      |      | —    |      |   |
| IGT3 <sup>−</sup> | 4                                                         |                                            |                      |      | 30   |      |   |
| VGT1 <sup>+</sup> | 1                                                         |                                            | Gate Trigger Voltage |      |      | 1.5  | V |
| VGT1 <sup>−</sup> | 2                                                         |                                            |                      |      |      | 1.5  |   |
| VGT3 <sup>+</sup> | 3                                                         |                                            |                      |      |      | —    |   |
| VGT3 <sup>−</sup> | 4                                                         |                                            |                      |      |      | 1.5  |   |
| VGD               | Non-Trigger Gate Voltage                                  | Tj=125°C, VD=½VDRM                         | 0.2                  |      |      | V    |   |
| (dv/dt)c          | Critical Rate of Rise of Off-State Voltage at Commutation | Tj=125°C, [di/dt)c=−12.5A/ms, VD=⅔VDRM     | 10                   |      |      | V/μs |   |
| IH                | Holding Current                                           |                                            |                      | 35   |      | mA   |   |
| Rth               | Thermal Resistance                                        | Junction to case                           |                      |      | 1.9  | °C/W |   |

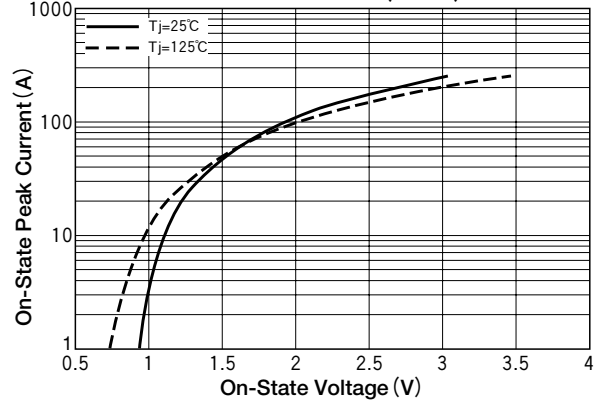
Trigger mode of the triac



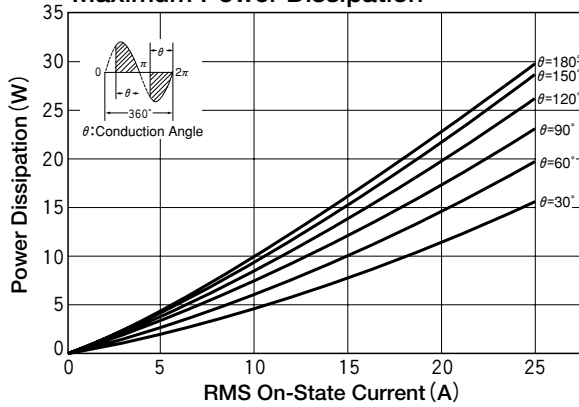
## Gate Characteristics



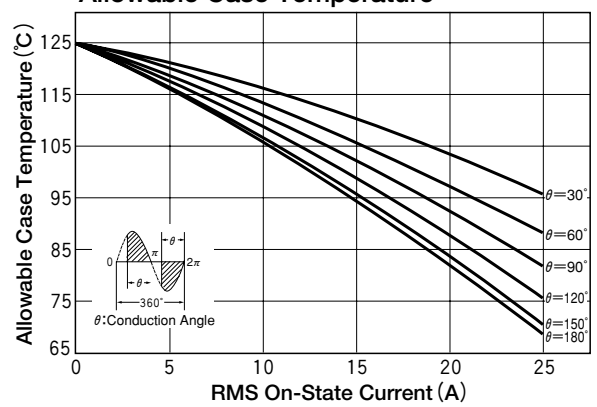
## On-State Characteristics (MAX)



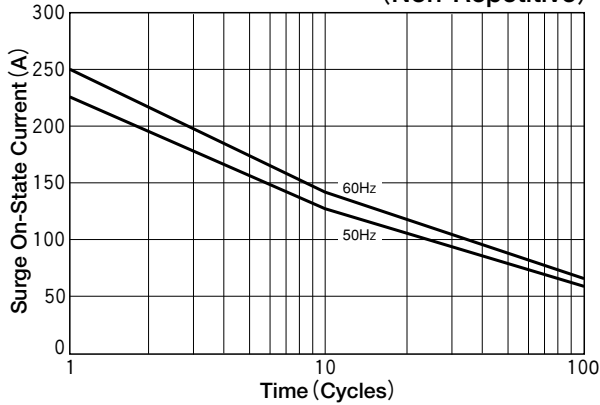
## RMS On-State Current vs Maximum Power Dissipation



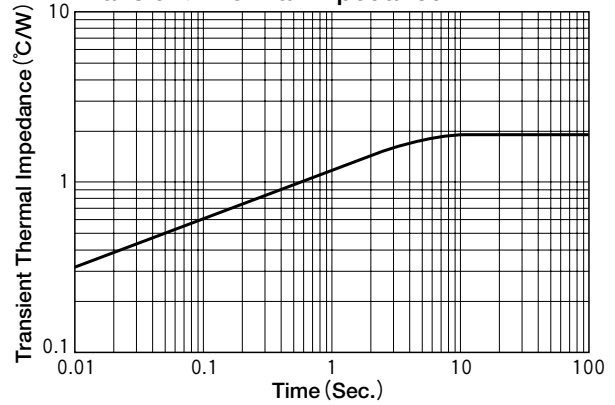
## RMS On-State vs Allowable Case Temperature



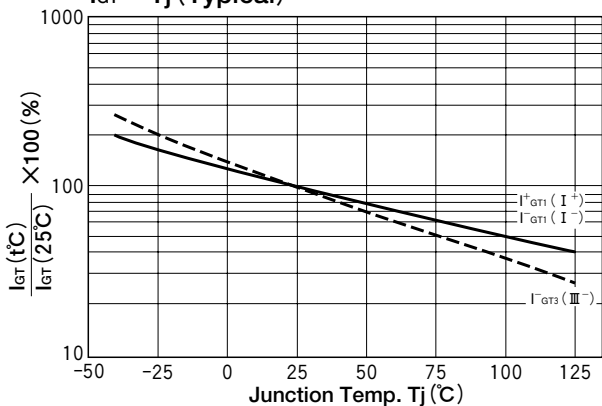
## Surge On-State Current Rating (Non-Repetitive)



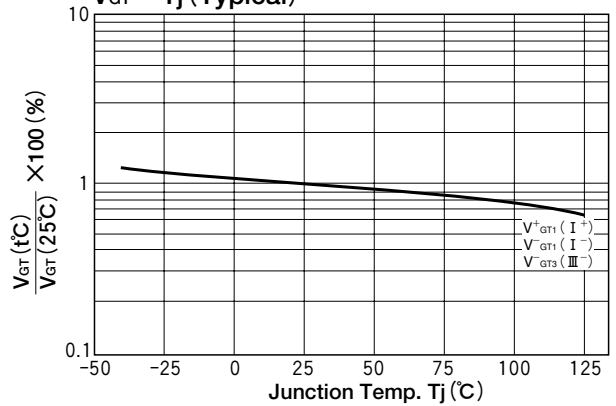
## Transient Thermal Impedance



## $I_{GT} - T_J$ (Typical)



## $V_{GT} - T_J$ (Typical)



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