

# TRIAC(Through Hole / Non-isolated)

# TMG8C60

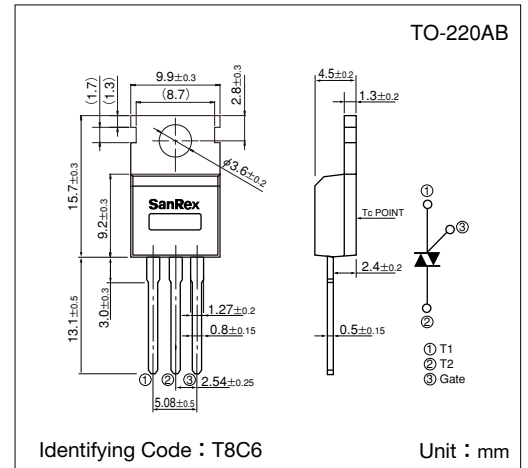
**SanRex** Triac TMG8C60 is designed for full wave AC control applications. It can be used as an ON/OFF function or for phase control operation.

### 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

- $I_{T(RMS)}=8A$
- High Surge Current
- Low Voltage Drop
- Lead-Free Package



### Maximum Ratings

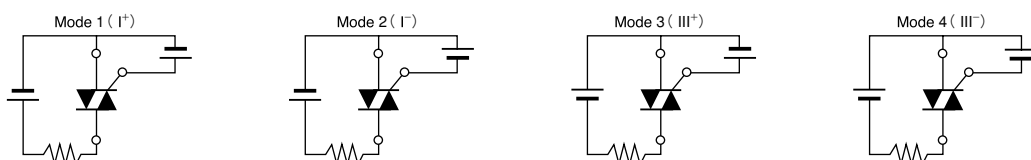
( $T_j=25^\circ\text{C}$  unless otherwise specified)

| Symbol       | Item                              | Reference                                       | Ratings         | Unit             |
|--------------|-----------------------------------|---|-----------------|------------------|
| $V_{DRM}$    | Repetitive Peak Off-State Voltage |   | 600             | V                |
| $I_{T(RMS)}$ | R.M.S. On-State Current           | $T_c=105^\circ\text{C}$                         | 8               | A                |
| $I_{TSM}$    | Surge On-State Current            | One cycle, 50Hz/60Hz, Peak value non-repetitive | 80/88           | A                |
| $I^2t$       | $I^2t$ (for fusing)               |   | 32              | $A^2S$           |
| $P_{GM}$     | 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                |
| $T_j$        | Operating Junction Temperature    |   | $-40 \sim +125$ | $^\circ\text{C}$ |
| $T_{stg}$    | Storage Temperature               |   | $-40 \sim +150$ | $^\circ\text{C}$ |
|              | Mass                              |   | 2               | g                |

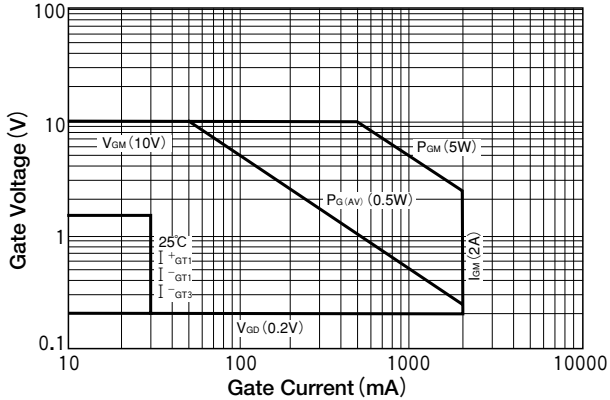
### Electrical Characteristics

| Symbol      | Item  | Reference   | Ratings |      |      | Unit               |   |
|-------------|---|---|---------|------|------|--------------------|---|
|             |   |   | Min.    | Typ. | Max. |                    |   |
| $I_{DRM}$   | Repetitive Peak Off-State Current                         | $V_D=V_{DRM}$ , Single phase, half wave, $T_j=125^\circ\text{C}$        |         |      | 2    | mA                 |   |
| $V_{TM}$    | Peak On-State Voltage                                     | $I_T=12A$ , Inst. measurement   |         |      | 1.4  | V                  |   |
| $I_{GT1}^+$ | Gate Trigger Current                                      | $V_D=6V$ , $R_L=10\Omega$   |         |      | 30   | mA                 |   |
| $I_{GT1}^-$ |   |   |         |      | 30   |                    |   |
| $I_{GT3}^+$ |   |   |         |      | —    |                    |   |
| $I_{GT3}^-$ |   |   |         |      | 30   |                    |   |
| $V_{GT1}^+$ | Gate Trigger Voltage                                      |   |         |      |      | 1.5                | V |
| $V_{GT1}^-$ |   |   |         |      |      | 1.5                |   |
| $V_{GT3}^+$ |   |   |         |      |      | —                  |   |
| $V_{GT3}^-$ |   |   |         |      |      | 1.5                |   |
| $V_{GD}$    | Non-Trigger Gate Voltage                                  | $T_j=125^\circ\text{C}$ , $V_D=\frac{1}{2}V_{DRM}$                      | 0.2     |      |      | V                  |   |
| $[dv/dt]_c$ | Critical Rate of Rise of Off-State Voltage at Commutation | $T_j=125^\circ\text{C}$ , $[di/dt]_c=-4A/ms$ , $V_D=\frac{2}{3}V_{DRM}$ | 10      |      |      | $V/\mu s$          |   |
| $I_H$       | Holding Current   |   |         | 15   |      | mA                 |   |
| $R_{th}$    | Thermal Resistance  | Junction to case  |         |      | 2.0  | $^\circ\text{C}/W$ |   |

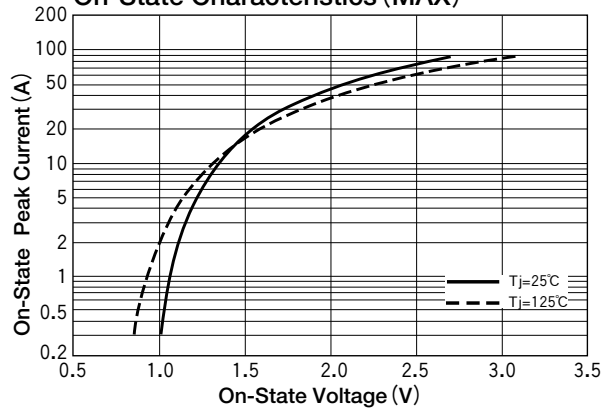
Trigger mode of the triac



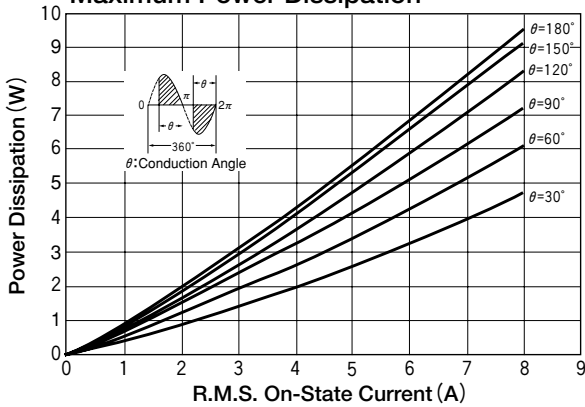
**Gate Characteristics**



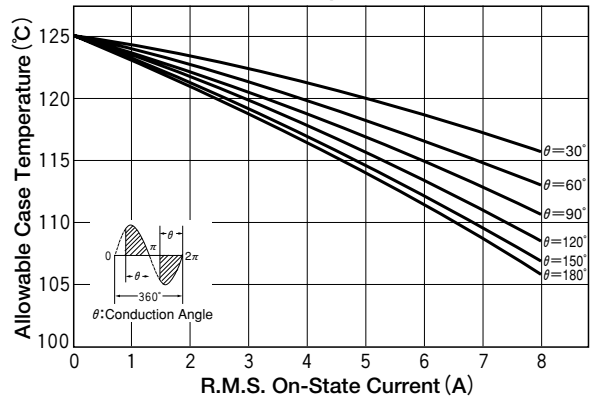
**On-State Characteristics (MAX)**



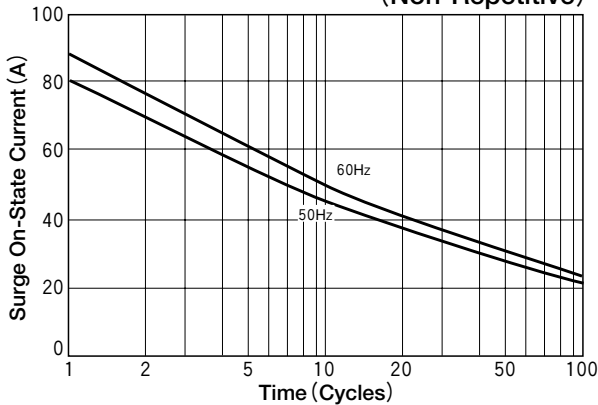
**R.M.S. On-State vs Maximum Power Dissipation**



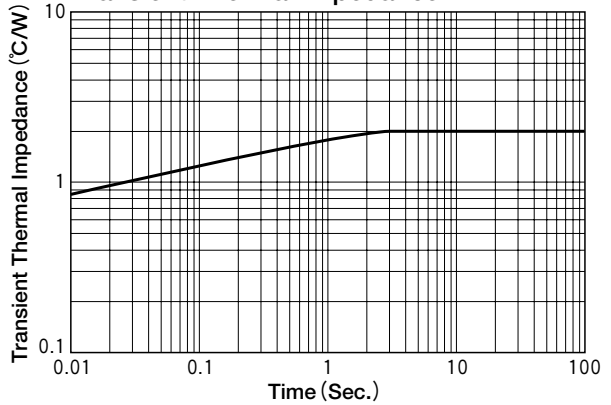
**R.M.S. On-State vs Allowable Case Temperature**



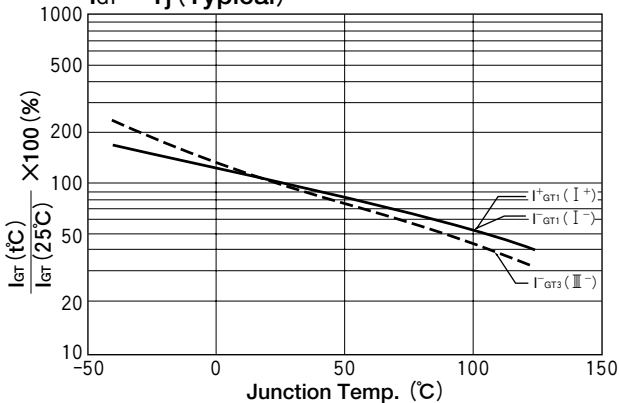
**Surge On-State Current Rating (Non-Repetitive)**



**Transient Thermal Impedance**



**I<sub>GT</sub> - T<sub>j</sub> (Typical)**



**V<sub>GT</sub> - T<sub>j</sub> (Typical)**

