

TRIAC(Through Hole/Non-isolated)

TMG5D60C

(Sensitive Gate)

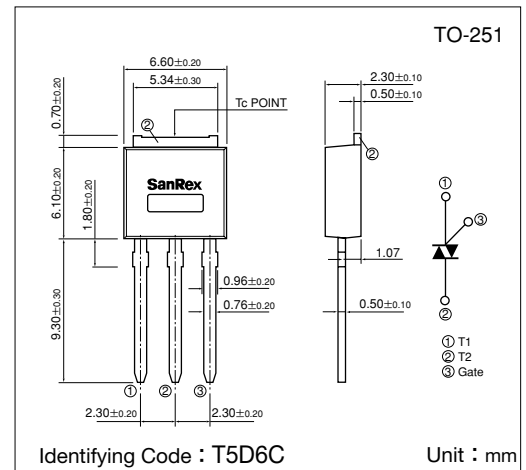
SanRex Triac TMG5D60C is designed for full wave AC control applications. It can be used as an ON/OFF function or for phase control operation.

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

- $I_{T(RMS)}=5A$
- High Surge Current
- Low Voltage Drop
- Lead-Free Package



Maximum Ratings

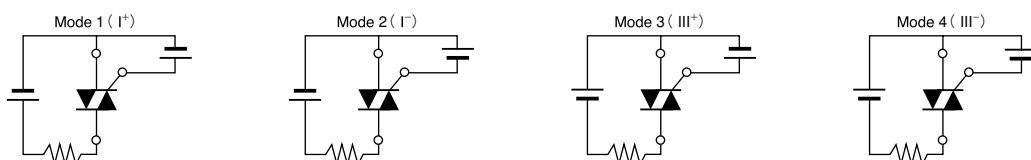
($T_j=25^{\circ}C$ unless otherwise specified)

| Symbol | Item | Reference | Ratings | Unit |
|--------------|-----------------------------------|-------------------------------------------------|-----------------|-------------|
| V_{DRM} | Repetitive Peak Off-State Voltage | | 600 | V |
| $I_{T(RMS)}$ | R.M.S. On-State Current | $T_c=107^{\circ}C$ | 5 | A |
| I_{TSM} | Surge On-State Current | One cycle, 50Hz/60Hz, Peak value non-repetitive | 50/55 | A |
| I^2t | I^2t (for fusing) | | 12.6 | A^2S |
| P_{GM} | Peak Gate Power Dissipation | | 3 | W |
| $P_{G(AV)}$ | Average Gate Power Dissipation | | 0.3 | W |
| I_{GM} | Peak Gate Current | | 2 | A |
| V_{GM} | Peak Gate Voltage | | 10 | V |
| T_j | Operating Junction Temperature | | $-40 \sim +125$ | $^{\circ}C$ |
| T_{stg} | Storage Temperature | | $-40 \sim +150$ | $^{\circ}C$ |
| | Mass | | 0.39 | g |

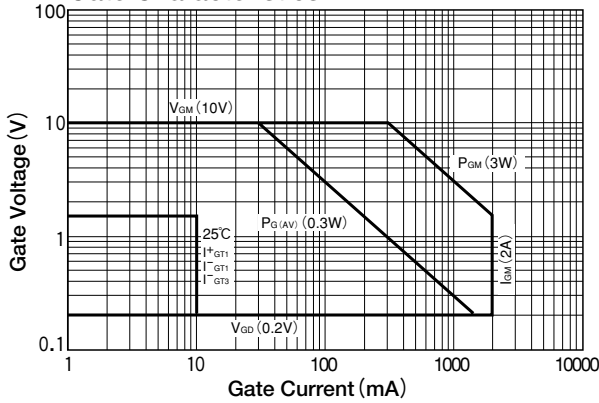
Electrical Characteristics

| Symbol | Item | Reference | Ratings | | | Unit | |
|---------------|-----------------------------------------------------------|--------------------------------------------------------------|---------|------|------|---------------|---|
| | | | Min. | Typ. | Max. | | |
| I_{DRM} | Repetitive Peak Off-State Current | $V_D=V_{DRM}$, Single phase, half wave, $T_j=125^{\circ}C$ | | | 1 | mA | |
| V_{TM} | Peak On-State Voltage | $I_T=7A$, Inst. measurement | | | 1.4 | V | |
| I_{GT1}^+ | Gate Trigger Current | $V_D=6V$, $R_L=10\Omega$ | | | 10 | mA | |
| I_{GT1}^- | | | | | 10 | | |
| I_{GT3}^+ | | | | | — | | |
| I_{GT3}^- | | | | | 10 | | |
| V_{GT1}^+ | Gate Trigger Voltage | | | | | 1.5 | V |
| V_{GT1}^- | | | | | | 1.5 | |
| V_{GT3}^+ | | | | | | — | |
| V_{GT3}^- | | | | | | 1.5 | |
| V_{GD} | Non-Trigger Gate Voltage | $T_j=125^{\circ}C$, $V_D=1/2V_{DRM}$ | 0.2 | | | V | |
| $[dv/dt]_c$ | Critical Rate of Rise of Off-State Voltage at Commutation | $T_j=125^{\circ}C$, $[di/dt]_c=-2.5A/ms$, $V_D=2/3V_{DRM}$ | 5 | | | $V/\mu s$ | |
| I_H | Holding Current | | | 10 | | mA | |
| $R_{th(j-c)}$ | Thermal Resistance | Junction to case | | | 3.0 | $^{\circ}C/W$ | |

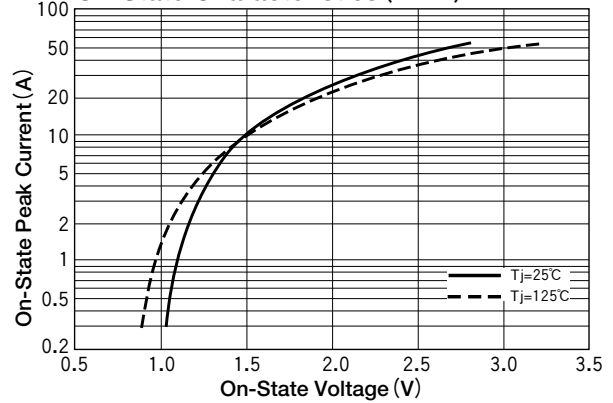
Trigger mode of the triac



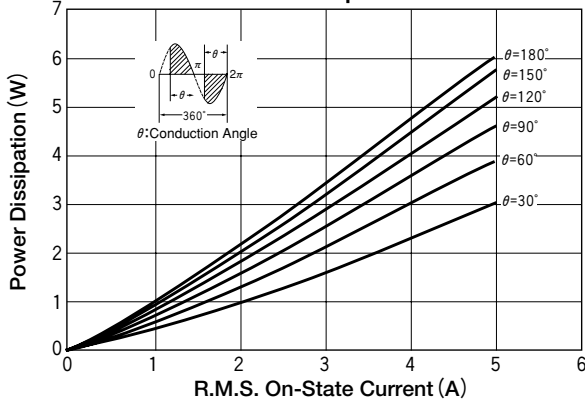
Gate Characteristics



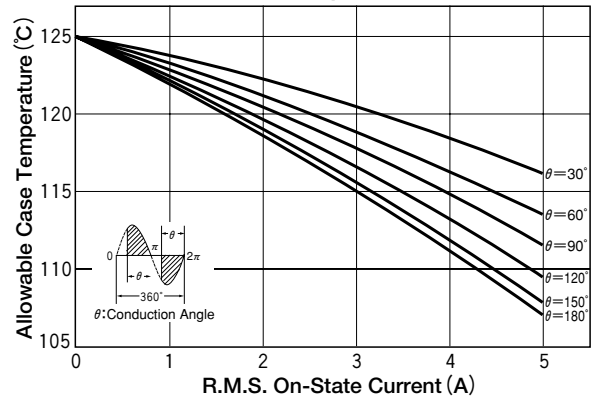
On-State Characteristics (MAX)



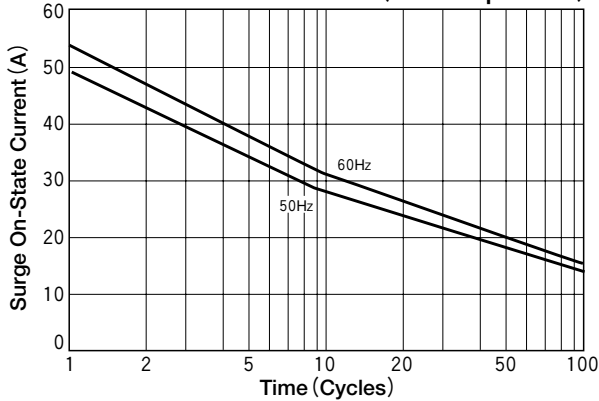
R.M.S. On-State Current vs Maximum Power Dissipation



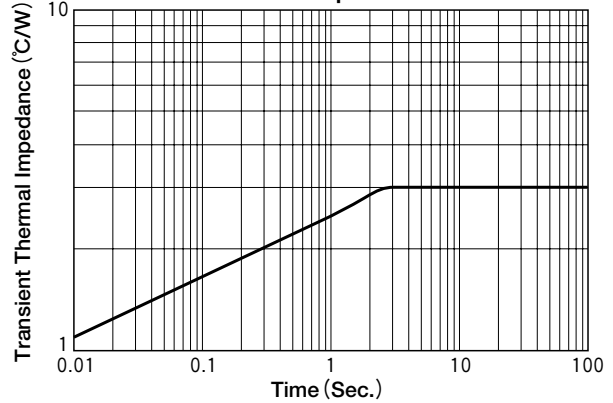
R.M.S. On-State vs Allowable Case Temperature



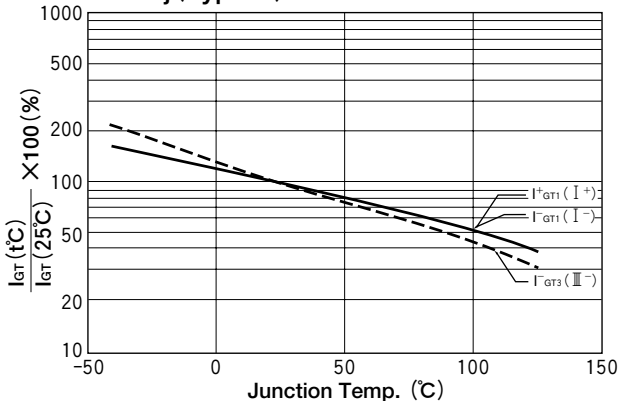
Surge On-State Current Rating (Non-Repetitive)



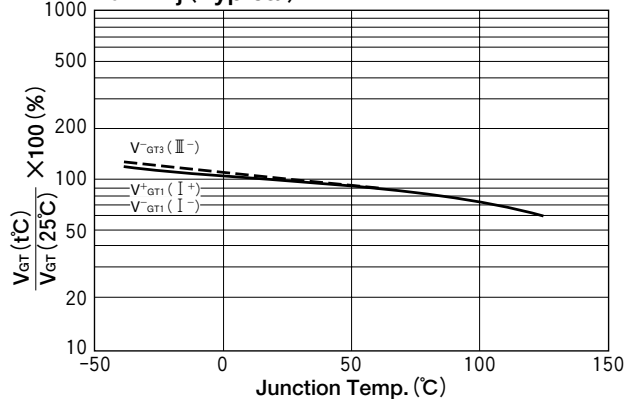
Transient Thermal Impedance



$I_{GT} - T_j$ (Typical)



$V_{GT} - T_j$ (Typical)



TRIAC(Through Hole/Non-isolated)

TMG5D80C

(Sensitive Gate)

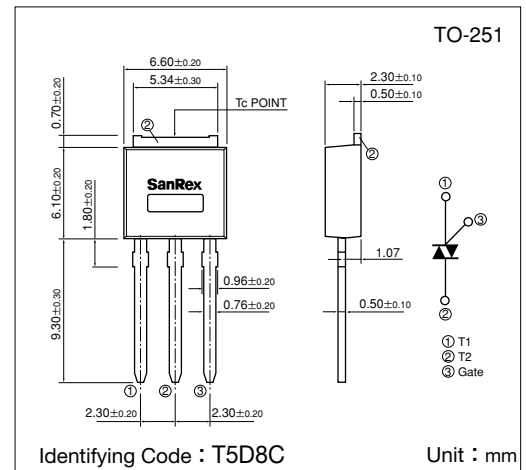
SanRex Triac TMG5D80C is designed for full wave AC control applications. It can be used as an ON/OFF function or for phase control operation.

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Features

- $I_{T(RMS)}=5A$
- High Surge Current
- Low Voltage Drop
- Lead-Free Package



Maximum Ratings

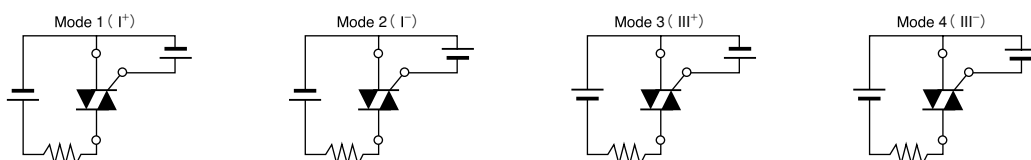
($T_j=25^{\circ}C$ unless otherwise specified)

| Symbol | Item | Reference | Ratings | Unit |
|--------------|-----------------------------------|-------------------------------------------------|-----------------|-------------|
| V_{DRM} | Repetitive Peak Off-State Voltage | | 800 | V |
| $I_{T(RMS)}$ | R.M.S. On-State Current | $T_c=107^{\circ}C$ | 5 | A |
| I_{TSM} | Surge On-State Current | One cycle, 50Hz/60Hz, Peak value non-repetitive | 50/55 | A |
| I^2t | I^2t (for fusing) | | 12.6 | A^2S |
| P_{GM} | Peak Gate Power Dissipation | | 3 | W |
| $P_{G(AV)}$ | Average Gate Power Dissipation | | 0.3 | W |
| I_{GM} | Peak Gate Current | | 2 | A |
| V_{GM} | Peak Gate Voltage | | 10 | V |
| T_j | Operating Junction Temperature | | $-40 \sim +125$ | $^{\circ}C$ |
| T_{stg} | Storage Temperature | | $-40 \sim +150$ | $^{\circ}C$ |
| | Mass | | 0.39 | g |

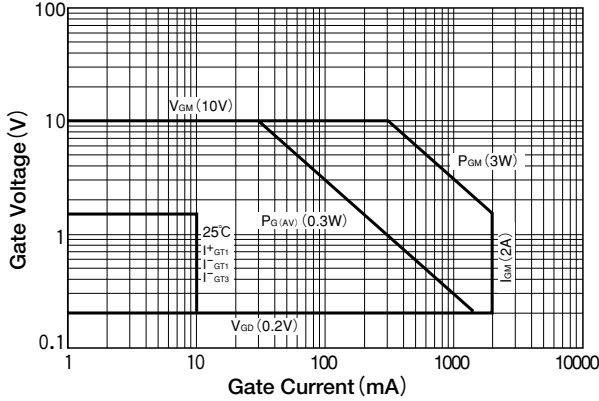
Electrical Characteristics

| Symbol | Item | Reference | Ratings | | | Unit | |
|---------------|-----------------------------------------------------------|-------------------------------------------------------------|---------|------|------|---------------|---|
| | | | Min. | Typ. | Max. | | |
| I_{DRM} | Repetitive Peak Off-State Current | $V_D=V_{DRM}$, Single phase, half wave, $T_j=125^{\circ}C$ | | | 1 | mA | |
| V_{TM} | Peak On-State Voltage | $I_T=7A$, Inst. measurement | | | 1.4 | V | |
| I_{GT1}^+ | Gate Trigger Current | $V_D=6V$, $R_L=10\Omega$ | | | 10 | mA | |
| I_{GT1}^- | | | | | 10 | | |
| I_{GT3}^+ | | | | | — | | |
| I_{GT3}^- | | | | | 10 | | |
| V_{GT1}^+ | Gate Trigger Voltage | | | | | 1.5 | V |
| V_{GT1}^- | | | | | | 1.5 | |
| V_{GT3}^+ | | | | | | — | |
| V_{GT3}^- | | | | | | 1.5 | |
| V_{GD} | Non-Trigger Gate Voltage | $T_j=125^{\circ}C$, $V_D=1/2V_{DRM}$ | 0.2 | | | V | |
| $[dv/dt]_c$ | Critical Rate of Rise of Off-State Voltage at Commutation | $T_j=125^{\circ}C$, $[di/dt]_c=-2.5A/ms$, $V_D=400V$ | 5 | | | $V/\mu s$ | |
| I_H | Holding Current | | | 10 | | mA | |
| $R_{th(j-c)}$ | Thermal Resistance | Junction to case | | | 3.0 | $^{\circ}C/W$ | |

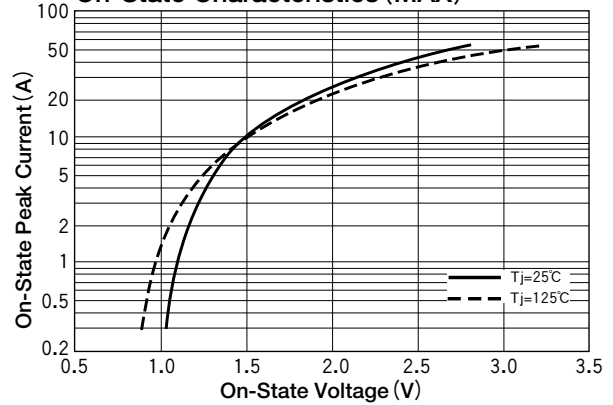
Trigger mode of the triac



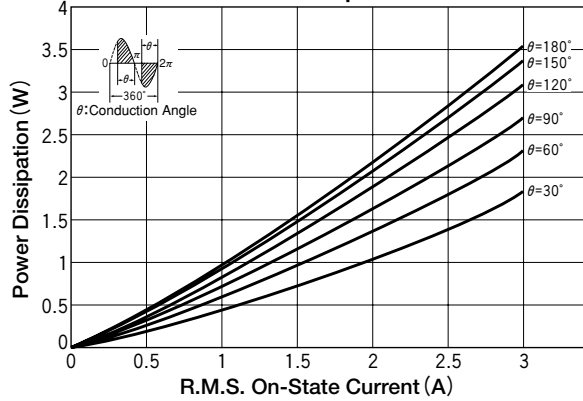
Gate Characteristics



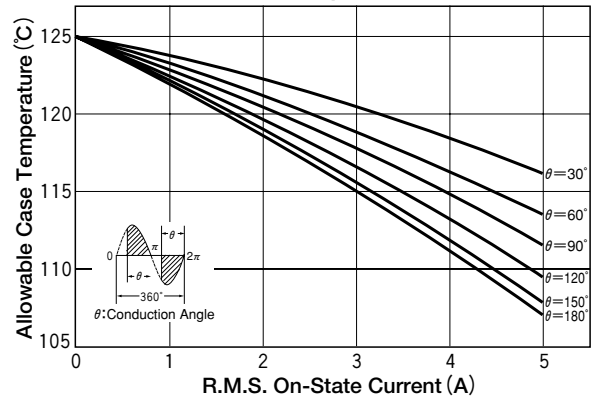
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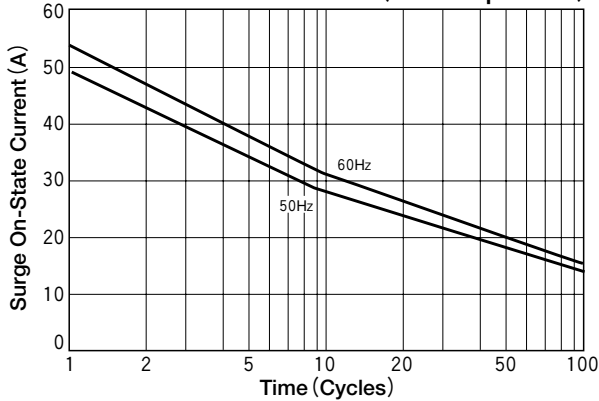
R.M.S. On-State Current vs Maximum Power Dissipation



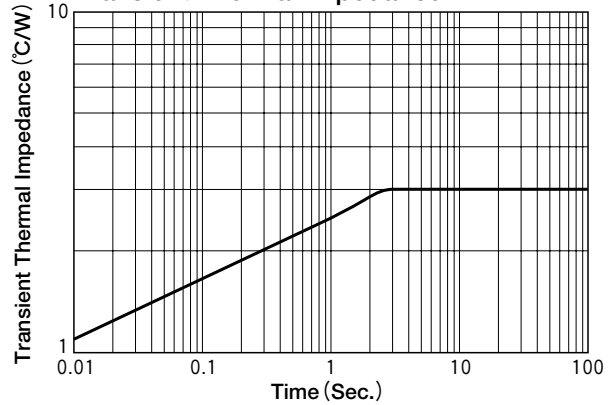
R.M.S. On-State vs Allowable Case Temperature



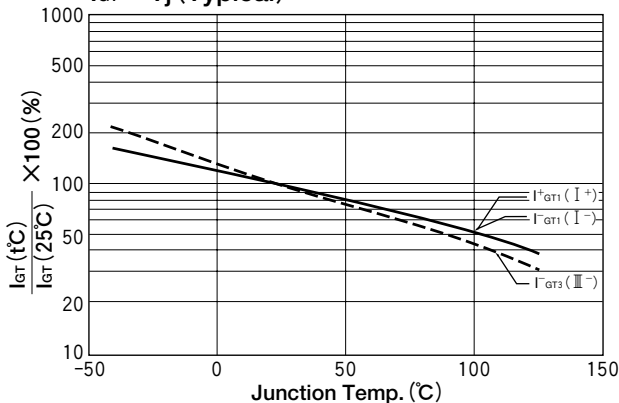
Surge On-State Current Rating (Non-Repetitive)



Transient Thermal Impedance



$I_{GT} - T_j$ (Typical)



$V_{GT} - T_j$ (Typical)

