

THYRISTOR(Through Hole)

SMG05C60 5

(Sensitive Gate)

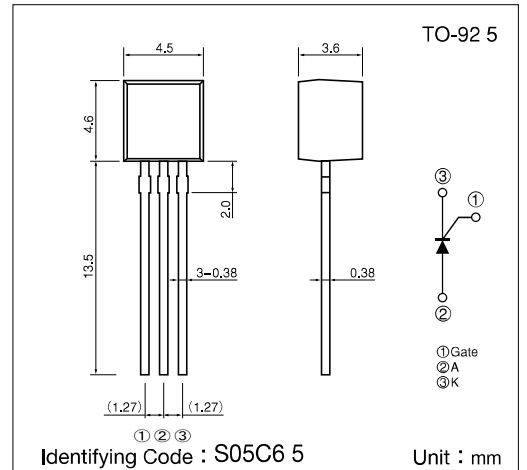
SanRex Thyristor SMG05C60 5 is designed for full wave AC control applications. It can be used as an ON/OFF function or for phase control operation.

Typical Applications

- Home Appliances : Electric Blankets, Starter for FL, other control applications
- Industrial Use : SMPS, Solenoid for Breakers, Motor Controls, Heater Controls, other control applications

Features

- $I_{T(AV)}=0.5A$
- High Surge Current
- Low Voltage Drop



Maximum Ratings

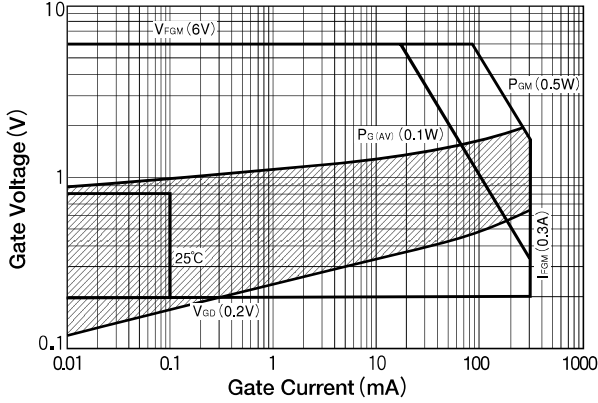
($T_j=25^{\circ}C$ unless otherwise specified)

| Symbol | Item | Reference | Ratings | Unit |
|--------------|-------------------------------------|--|-----------------|-------------|
| V_{RRM} | Repetitive Peak Reverse Voltage | | 600 | V |
| V_{RSM} | Non-Repetitive Peak Reverse Voltage | | 720 | V |
| V_{DRM} | Repetitive Peak Off-State Voltage | | 600 | V |
| $I_{T(AV)}$ | Average On-State Current | Single phase, half wave, 180° , conduction, $T_a=39^{\circ}C$ | 0.5 | A |
| $I_{T(RMS)}$ | R.M.S. On-State Current | Single phase, half wave, 180° , conduction, $T_a=39^{\circ}C$ | 0.78 | A |
| I_{TSM} | Surge On-State Current | 50/60Hz, $\frac{1}{2}$ cycle, Peak value, non-repetitive | 18/20 | A |
| I^2t | I^2t | | 1.65 | A^2s |
| P_{GM} | Peak Gate Power Dissipation | | 0.5 | W |
| $P_{G(AV)}$ | Average Gate Power Dissipation | | 0.1 | W |
| I_{FGM} | Peak Gate Current | | 0.3 | A |
| V_{FGM} | Peak Gate Voltage (Forward) | | 6 | V |
| V_{RGM} | Peak Gate Voltage (Reverse) | | 6 | V |
| T_j | Operating Junction Temperature | | $-40 \sim +125$ | $^{\circ}C$ |
| T_{stg} | Storage Temperature | | $-40 \sim +150$ | $^{\circ}C$ |
| | Mass | | 0.2 | g |

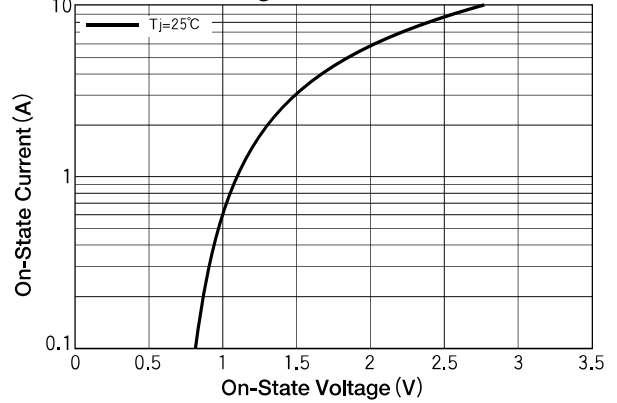
Electrical Characteristics

| Symbol | Item | Reference | Ratings | | | Unit |
|---------------|-----------------------------------|---|---------|------|------|---------------|
| | | | Min. | Typ. | Max. | |
| I_{DRM} | Repetitive Peak Off-State Current | $T_j=125^{\circ}C, V_D=V_{DRM}, R_{GK}=1k\Omega$ | | | 0.5 | mA |
| I_{RRM} | Repetitive Peak Reverse Current | $T_j=125^{\circ}C, V_R=V_{RRM}, R_{GK}=1k\Omega$ | | | 0.5 | mA |
| V_{TM} | Peak On-State Voltage | $I_T=1.5A$, Inst. measurement | | | 1.2 | V |
| I_{GT} | Gate Trigger Current | $V_D=6V, R_L=100\Omega$ | | | 100 | μA |
| V_{GT} | Gate Trigger Voltage | | | | 0.8 | V |
| V_{GD} | Non-Trigger Gate Voltage | $T_j=125^{\circ}C, V_D=\frac{1}{2}V_{DRM}, R_{GK}=1k\Omega$ | 0.2 | | | V |
| I_H | Holding Current | | | 300 | | μA |
| $R_{th(j-a)}$ | Thermal Resistance | Junction to ambient | | | 150 | $^{\circ}C/W$ |

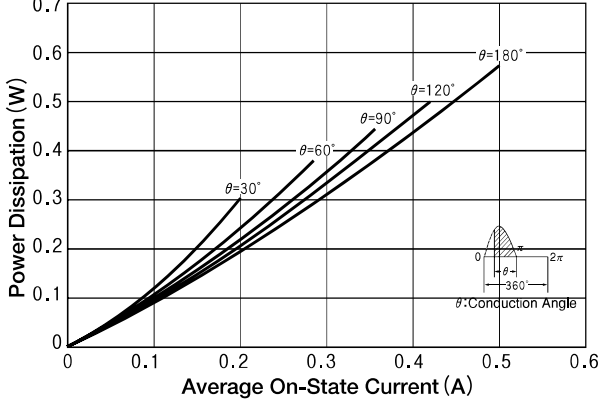
Gate Characteristics



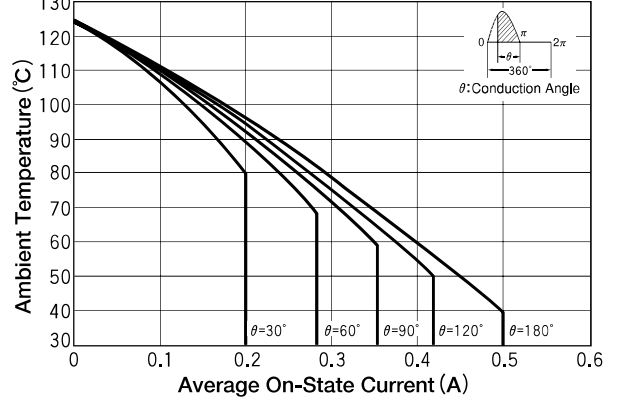
On-State Voltage (MAX)



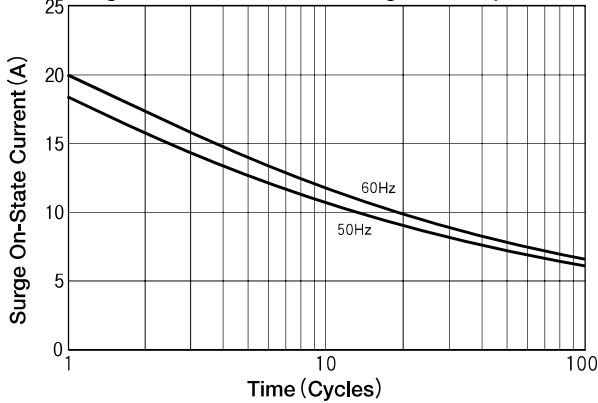
Average On-State Current vs Power Dissipation (Single phase half wave)



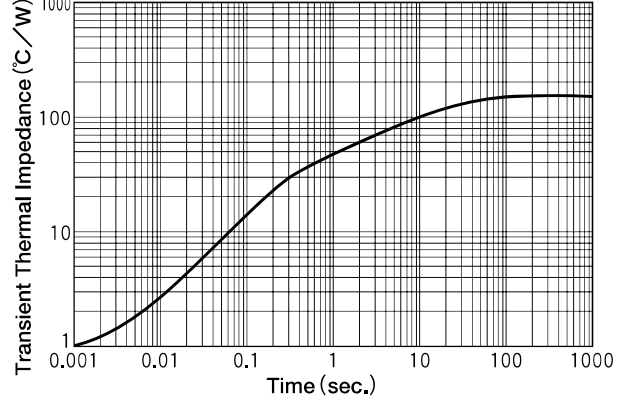
Average On-State Current vs Ambient Temperature (Single phase half wave)



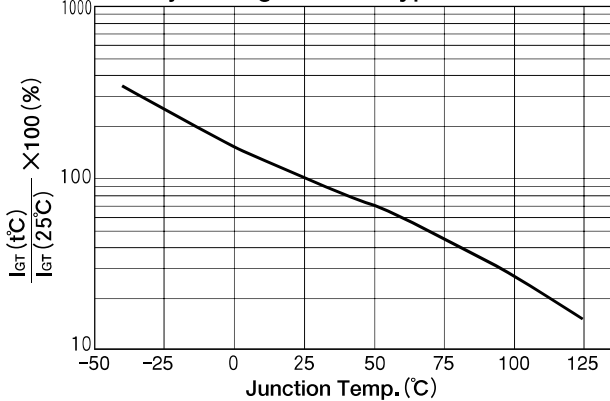
Surge On-State Current Rating (Non-Repetitive)



Maximum Transient Thermal Impedance Characteristics



$I_{GT} - T_j$ [Change Rate] (Typical)



$V_{GT} - T_j$ (Typical)

