

TRIAC(Through Hole / Non-isolated)

TMG12C80

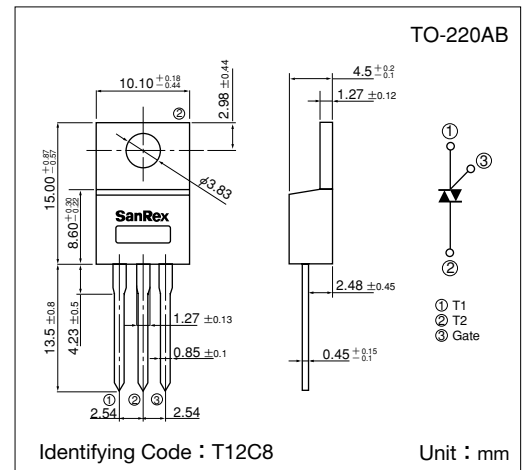
SanRex Triac TMG12C80 is designed for full wave AC control applications. It can be used as an ON/OFF function or for phase control operation.

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

- $I_{T(RMS)}=12A$
- High Surge Current
- Low Voltage Drop
- Lead-Free Package



Maximum Ratings

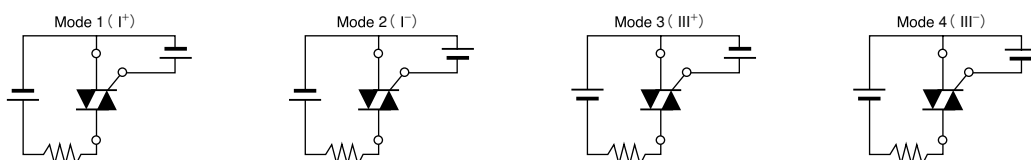
($T_j=25^\circ C$ unless otherwise specified)

| Symbol | Item | Reference | Ratings | Unit |
|--------------|-----------------------------------|-------------------------------------------------|----------|------------------|
| V_{DRM} | Repetitive Peak Off-State Voltage | | 800 | V |
| $I_{T(RMS)}$ | R.M.S. On-State Current | $T_c=100^\circ C$ | 12 | A |
| I_{TSM} | Surge On-State Current | One cycle, 50Hz/60Hz, Peak value non-repetitive | 119/130 | A |
| I^2t | I^2t (for fusing) | | 71 | A ² S |
| 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 |
| T_j | Operating Junction Temperature | | -40~+125 | $^\circ C$ |
| T_{stg} | Storage Temperature | | -40~+150 | $^\circ C$ |
| | Mass | | 2 | g |

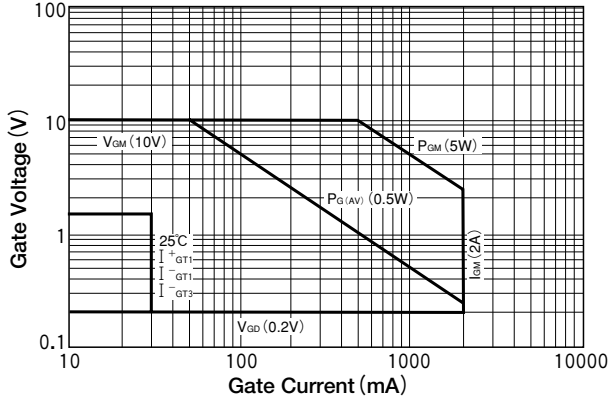
Electrical Characteristics

| Symbol | Item | Reference | Ratings | | | Unit | |
|-------------|-----------------------------------------------------------|------------------------------------------------------------|---------|------|------|--------------|---|
| | | | Min. | Typ. | Max. | | |
| I_{DRM} | Repetitive Peak Off-State Current | $V_D=V_{DRM}$, Single phase, half wave, $T_j=125^\circ C$ | | | 2 | mA | |
| V_{TM} | Peak On-State Voltage | $I_T=20A$, 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 | $T_j=125^\circ C$, $V_D=1/2 V_{DRM}$ | 0.2 | | | V | |
| $[dv/dt]_c$ | Critical Rate of Rise of Off-State Voltage at Commutation | $T_j=125^\circ C$, $[di/dt]_c=-6A/ms$, $V_D=400V$ | 10 | | | V/ μs | |
| I_H | Holding Current | | | 20 | | mA | |
| R_{th} | Thermal Resistance | Junction to case | | | 1.8 | $^\circ C/W$ | |

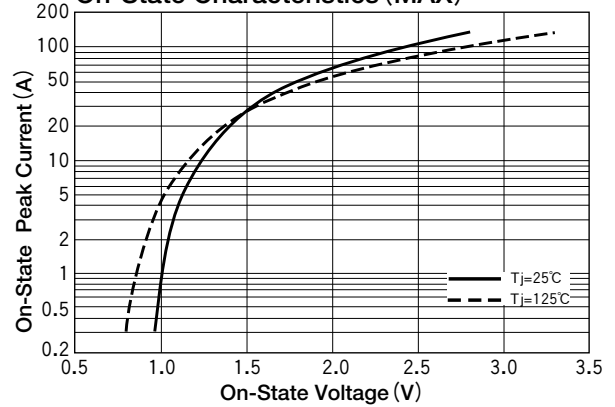
Trigger mode of the triac



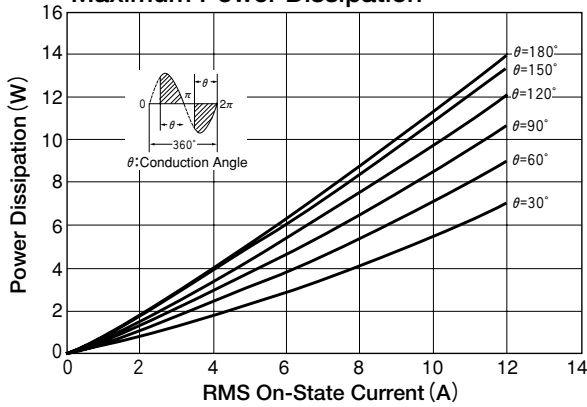
Gate Characteristics



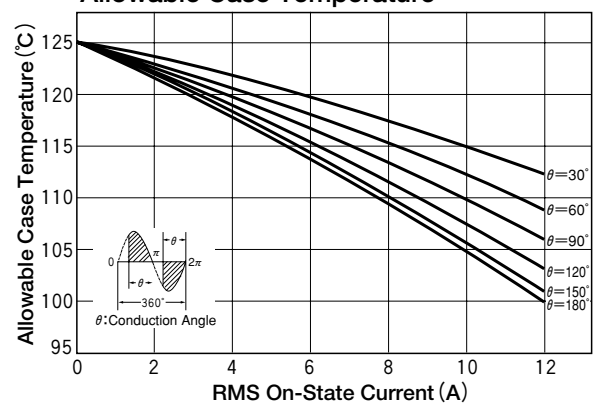
On-State Characteristics (MAX)



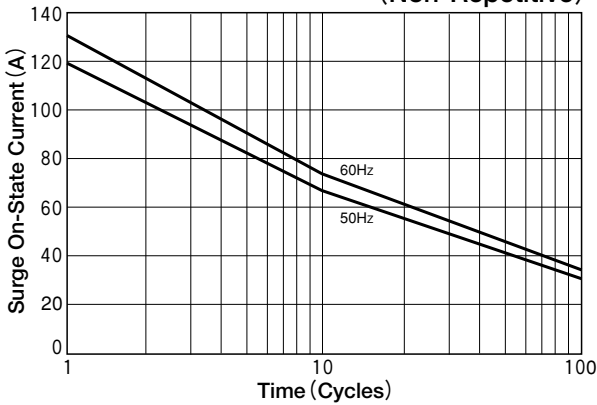
RMS On-State Current vs Maximum Power Dissipation



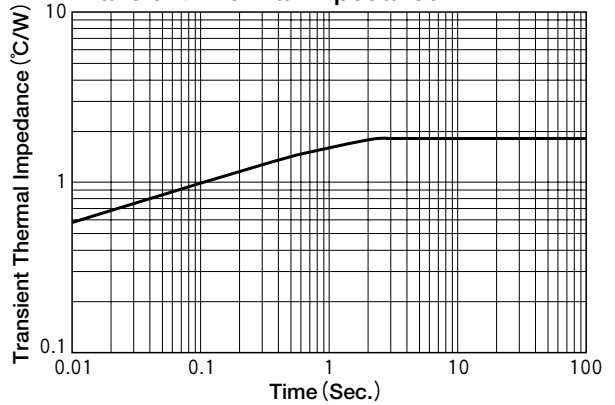
RMS On-State vs Allowable Case Temperature



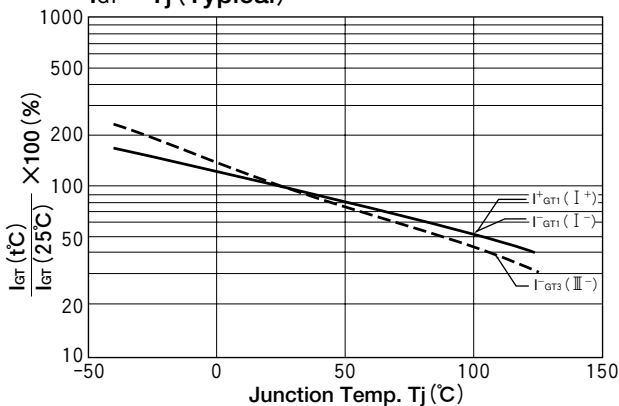
Surge On-State Current Rating (Non-Repetitive)



Transient Thermal Impedance



I_{GT} - T_j (Typical)



V_{GT} - T_j (Typical)

