

# TRIAC(ISOLATED TYPE)

# TMG10C40/60F

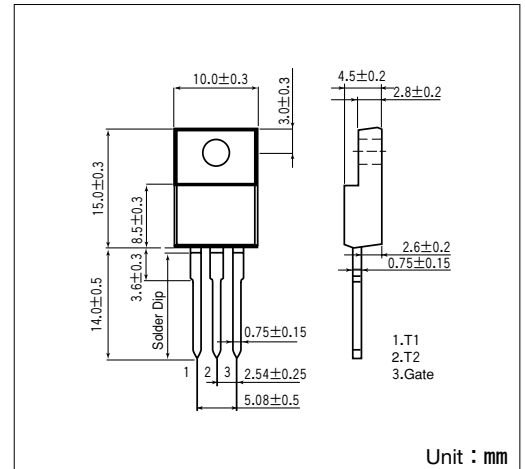
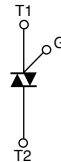
TOP



UL:E76102 (M)

TMG10C40/60F are isolated mold triac suitable for wide range of applications like copier, microwave oven, solid state switch, motor control, light and heater control.

- $I_T(\text{RMS})$  10A
- High surge capability 110A
- Full molded isolated type
- Three types of lead forming



## Maximum Ratings

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

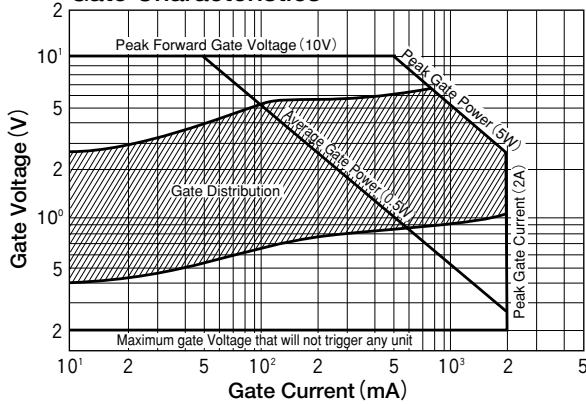
| Symbol           | Item                              | Ratings   |           | Unit |
|------------------|-----------------------------------|-----------|-----------|------|
|                  |                                   | TMG10C40F | TMG10C60F |      |
| $V_{\text{DRM}}$ | Repetitive Peak Off-State Voltage | 400       | 600       | V    |

| Symbol             | Item                                 | Conditions                                 | Ratings         | Unit                 |
|--------------------|--------------------------------------|--------------------------------------------|-----------------|----------------------|
| $I_T(\text{RMS})$  | R.M.S. On-State Current              | $T_c=83^\circ\text{C}$                     | 10              | A                    |
| $I_{\text{TSM}}$   | Surge On-State Current               | One cycle, 50Hz/60Hz, peak, non-repetitive | 100/110         | A                    |
| $I^2t$             | $I^2t$                               |                                            | 50              | $\text{A}^2\text{S}$ |
| $P_{\text{GM}}$    | Peak Gate Power Dissipation          |                                            | 5               | W                    |
| $P_{\text{G(AV)}}$ | Average Gate Power Dissipation       |                                            | 0.5             | W                    |
| $I_{\text{GM}}$    | Peak Gate Current                    |                                            | 2               | A                    |
| $V_{\text{GM}}$    | Peak Gate Voltage                    |                                            | 10              | V                    |
| $V_{\text{ISO}}$   | Isolation Breakdown Voltage (R.M.S.) | A.C.1 minute                               | 1500            | V                    |
| $T_j$              | Operating Junction Temperature       |                                            | $-40$ to $+125$ | $^\circ\text{C}$     |
| $T_{\text{stg}}$   | Storage Temperature                  |                                            | $-40$ to $+125$ | $^\circ\text{C}$     |
|                    | Mass                                 |                                            | 2               | g                    |

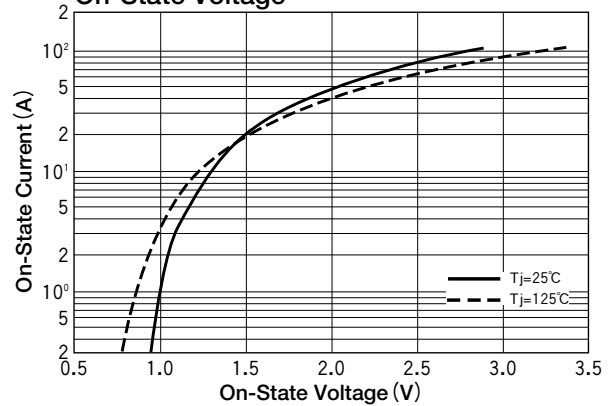
## Electrical Characteristics

| Symbol               | Item                                                   | Conditions                                                                            | Ratings |      |      | Unit                      |
|----------------------|--------------------------------------------------------|---------------------------------------------------------------------------------------|---------|------|------|---------------------------|
|                      |                                                        |                                                                                       | Min.    | Typ. | Max. |                           |
| $I_{\text{DRM}}$     | Reptitive Peak Off-State Current                       | $V_D=V_{\text{DRM}}$ , Single phase, half wave, $T_j=125^\circ\text{C}$               |         |      | 2    | mA                        |
| $V_{\text{TM}}$      | Peak On-State Voltage                                  | $I_T=15\text{A}$ , Inst. measurement                                                  |         |      | 1.4  | V                         |
| $I_{\text{GT1}}^+$   | Gate Trigger Current                                   | $V_D=6\text{V}$ , $R_L=10\Omega$                                                      |         |      | 30   | mA                        |
| $I_{\text{GT1}}^-$   |                                                        |                                                                                       |         |      | 30   |                           |
| $I_{\text{GT3}}^+$   |                                                        |                                                                                       |         |      | —    |                           |
| $I_{\text{GT3}}^-$   |                                                        |                                                                                       |         |      | 30   |                           |
| $V_{\text{GT1}}^+$   | Gate Trigger Voltage                                   | $V_D=6\text{V}$ , $R_L=10\Omega$                                                      |         |      | 1.5  | V                         |
| $V_{\text{GT1}}^-$   |                                                        |                                                                                       |         |      | 1.5  |                           |
| $V_{\text{GT3}}^+$   |                                                        |                                                                                       |         |      | —    |                           |
| $V_{\text{GT3}}^-$   |                                                        |                                                                                       |         |      | 1.5  |                           |
| $V_{\text{GD}}$      | Non-Trigger Gate Voltage                               | $T_j=125^\circ\text{C}$ , $V_D=\frac{1}{2}V_{\text{DRM}}$                             | 0.2     |      |      | V                         |
| $(dv/dt)_c$          | Critical Rate of Rise off-State Voltage at commutation | $T_j=125^\circ\text{C}$ , $(di/dt)_c=-5\text{A/ms}$ , $V_D=\frac{2}{3}V_{\text{DRM}}$ | 10      |      |      | $\text{V}/\mu\text{s}$    |
| $I_H$                | Holding Current                                        |                                                                                       |         | 20   |      | mA                        |
| $R_{\text{th(j-c)}}$ | Thermal Impedance                                      | Junction to case                                                                      |         |      | 3.5  | $^\circ\text{C}/\text{W}$ |

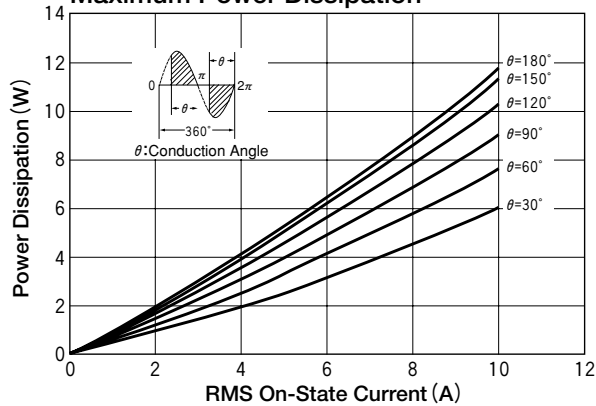
### Gate Characteristics



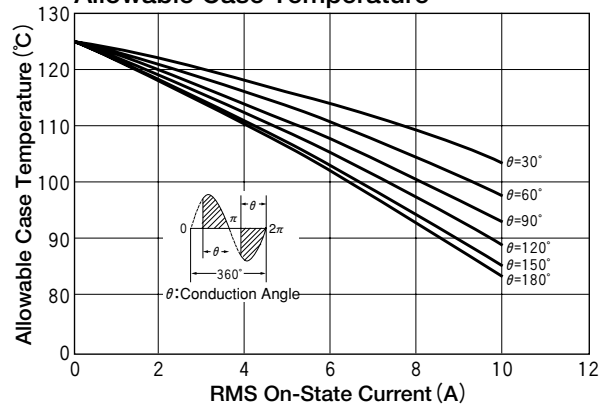
### On-State Voltage



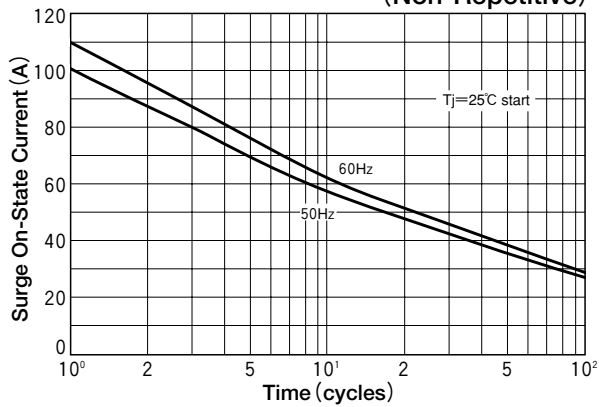
### On State Current vs. Maximum Power Dissipation



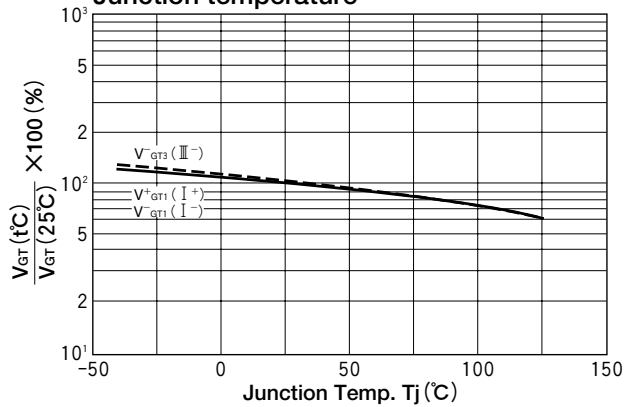
### On State Current vs. Allowable Case Temperature



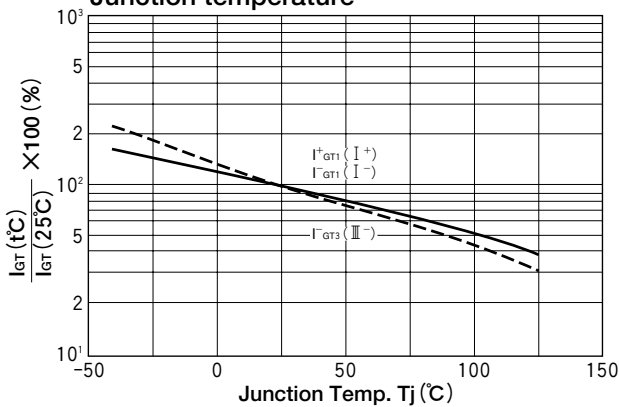
### Surge On-State Current Rating (Non-Repetitive)



### Gate trigger voltage vs. Junction temperature



### Gate trigger current vs. Junction temperature



### Transient Thermal Impedance

