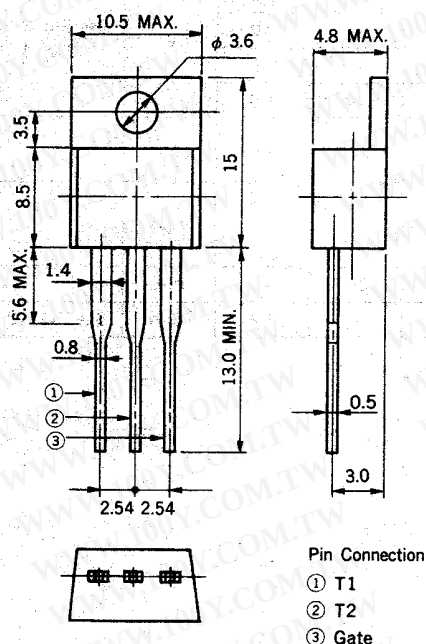


# AC10DGM to AC10FGM

## 10 A MOLD TRIAC

勝特力材料 886-3-5753170  
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### PACKAGE DIMENSIONS (Unit: mm)



The AC10DGM to AC10FGM are all diffused mold type triac granted RMS On-state current 10 Amps, with rated voltages up to 600 volts.

### FEATURES

- 80 A Surge Current
- TO-220AB mold package
- Low-cost

### APPLICATIONS

- Motor speed control
- Lamp dimmer, Temperature controllers
- Various solid state switches, etc.

### MAXIMUM RATINGS

| CHARACTERISTIC                  | SYMBOL          | AC10DGM                         | AC10EGM | AC10FGM | UNIT             | NOTE            |
|---------------------------------|-----------------|---------------------------------|---------|---------|------------------|-----------------|
| Repetitive Peak off Voltage     | $V_{DRM}$       | 400                             | 500     | 600     | V                |                 |
| Non-repetitive Peak off Voltage | $V_{DSM}$       | 500                             | 600     | 700     | V                |                 |
| RMS On-State Current            | $I_T$ (RMS)     | 10 ( $T_c = 103^\circ C$ )      |         |         | A                | See Fig. 11, 12 |
| Peak Surge On-State Current     | $I_{TSM}$       | 80 (50Hz, Non-repetitive)       |         |         | A                | See Fig. 2      |
| Fusing Current                  | $\int i_T^2 dt$ | 28 ( $1 ms \leq t \leq 10 ms$ ) |         |         | A <sup>2</sup> s |                 |
| Peak Gate Power Dissipation     | $P_{GM}$        | 5.0                             |         |         | W                |                 |
| Average Gate Power Dissipation  | $P_G$ (AV)      | 0.5                             |         |         | W                |                 |
| Peak Gate Current               | $I_{FGM}$       | $\pm 3$                         |         |         | A                |                 |
| Junction Temperature            | $T_j$           | -40 to +125                     |         |         | $^\circ C$       |                 |
| Storage Temperature             | $T_{stg}$       | -40 to +125                     |         |         | $^\circ C$       |                 |

ELECTRICAL CHARACTERISTICS ( $T_j = 25^\circ\text{C}$ )

| CHARACTERISTIC           | SYMBOL                | TEST CONDITIONS                                                                     | MIN. | TYP. | MAX. | UNIT               | NOTE                 |
|--------------------------|-----------------------|-------------------------------------------------------------------------------------|------|------|------|--------------------|----------------------|
| Peak off-State Current   | $I_{\text{DRM}}$      | $T_j = 125^\circ\text{C}$ , $V_{\text{DM}} = V_{\text{DRM}}$                        | —    | —    | 2    | mA                 |                      |
| On-State Voltage         | $V_{\text{TM}}$       | $I_{\text{TM}} = 10\text{ A}$                                                       | —    | —    | 1.4  | V                  | See Fig. 1           |
| Gate Trigger Current     | Trigger Mode<br>I     | $I_{\text{GT}}$<br><br>$V_{\text{DM}} = 12\text{ V}$<br>$R_L = 30\ \Omega$          | —    | —    | 30   | mA                 | See Fig. 3<br>Fig. 4 |
|                          |                       |                                                                                     | —    | —    | 80   |                    |                      |
|                          |                       |                                                                                     | —    | —    | 30   |                    |                      |
|                          |                       |                                                                                     | —    | —    | 30   |                    |                      |
| Gate Trigger Voltage     | Trigger Mode<br>I     | $V_{\text{GT}}$<br><br>$V_{\text{DM}} = 12\text{ V}$<br>$R_L = 30\ \Omega$          | —    | —    | 1.5  | V                  | See Fig. 3<br>Fig. 4 |
|                          |                       |                                                                                     | —    | —    | 2.0  |                    |                      |
|                          |                       |                                                                                     | —    | —    | 1.5  |                    |                      |
|                          |                       |                                                                                     | —    | —    | 1.5  |                    |                      |
| Gate Non-Trigger Voltage | $V_{\text{GD}}$       | $T_j = 125^\circ\text{C}$<br>$V_{\text{DM}} = 1/2 V_{\text{DRM}}$                   | 0.3  | —    | —    | V                  |                      |
| Commutating dv/dt        | $(dv/dt)_C$           | $T_j = 125^\circ\text{C}$<br>$(di_T/dt)_C = -5\text{ A/ms}$<br>$V_D = 400\text{ V}$ | 10   | —    | —    | V/ $\mu\text{s}$   |                      |
| Holding Current          | $I_{\text{H}}$        | $V_D = 24\text{ V}$                                                                 | —    | 30   | —    | mA                 |                      |
| Thermal Resistance       | $R_{\text{th}} (j-c)$ | Junction to Case                                                                    | —    | —    | 1.8  | $^\circ\text{C/W}$ | See Fig. 13          |

## Trigger Mode &amp; Test Circuit

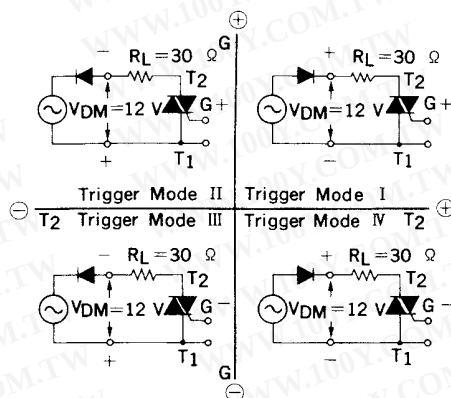
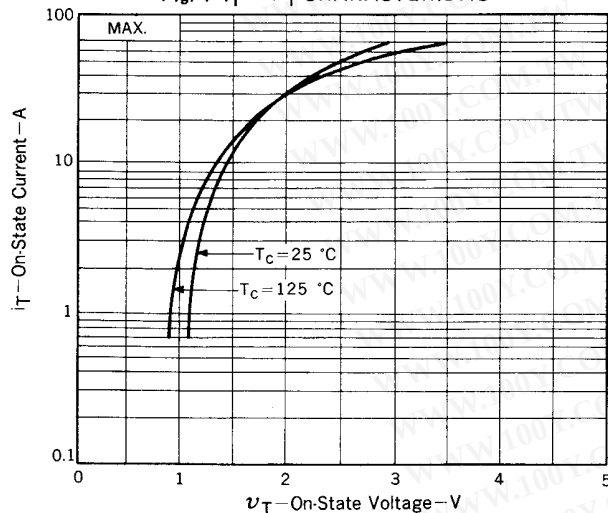
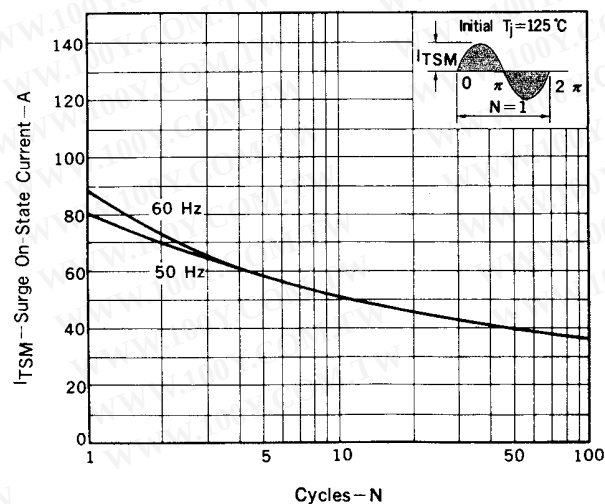
Fig. 1  $i_T - v_T$  CHARACTERISTICFig. 2  $I_{\text{TSM}}$  RATING

Fig. 3  $V_G - I_G$  RATING

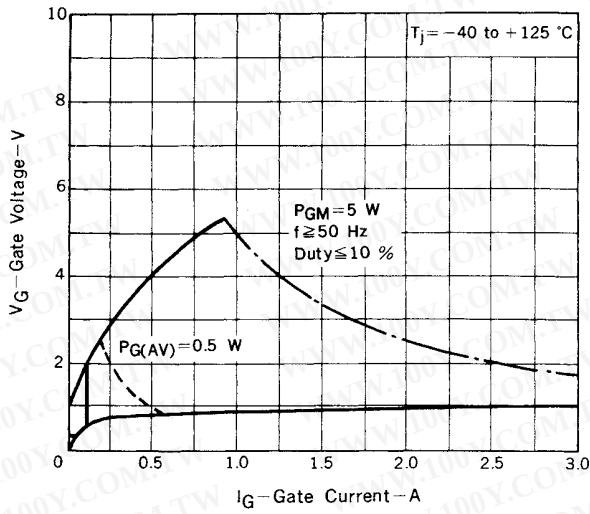


Fig. 4  $V_{GT} - I_{GT}$  CHARACTERISTIC

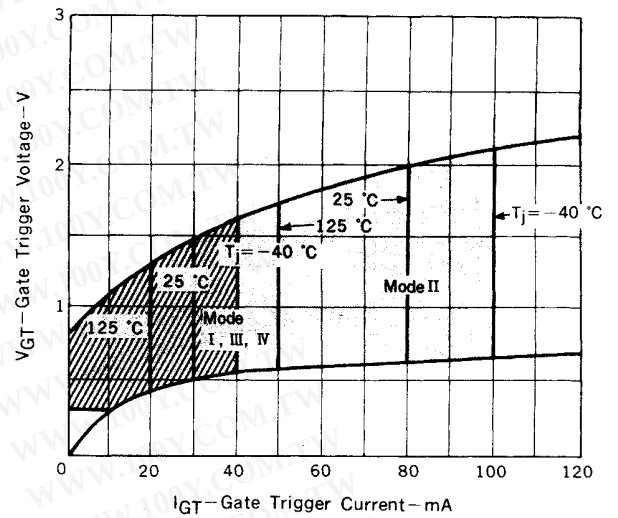


Fig. 5  $I_{GT} - T_a$  TYPICAL DISTRIBUTION

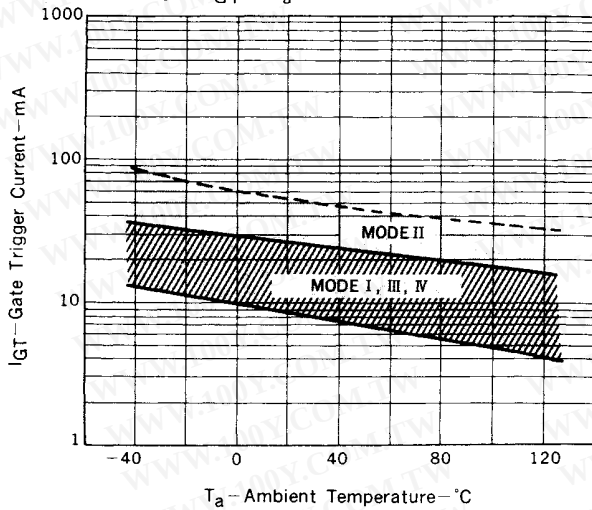


Fig. 6  $V_{GT} - T_a$  TYPICAL DISTRIBUTION

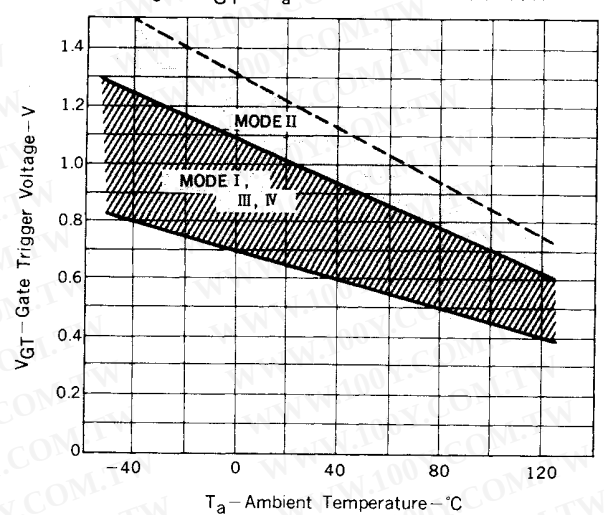


Fig. 7  $I_{GT} - \tau$  TYPICAL DISTRIBUTION

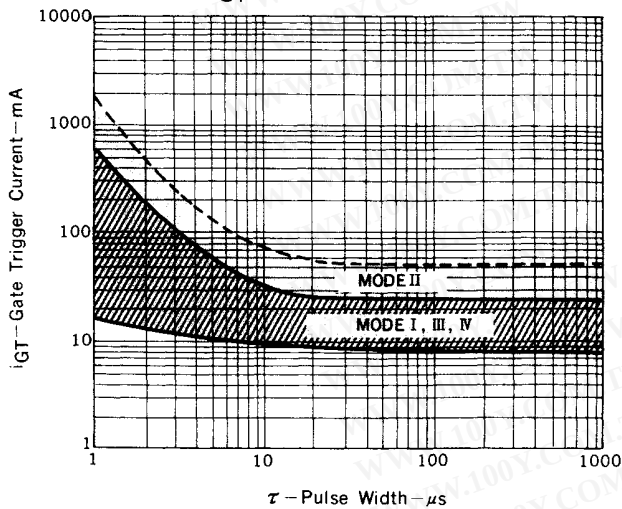


Fig. 8  $v_{GT} - \tau$  TYPICAL DISTRIBUTION

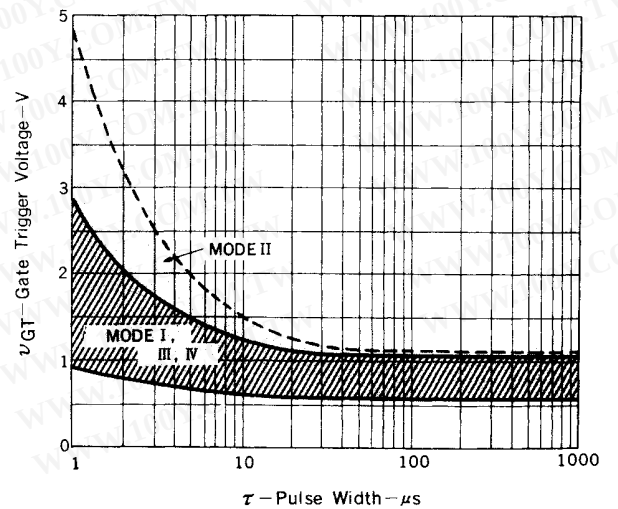


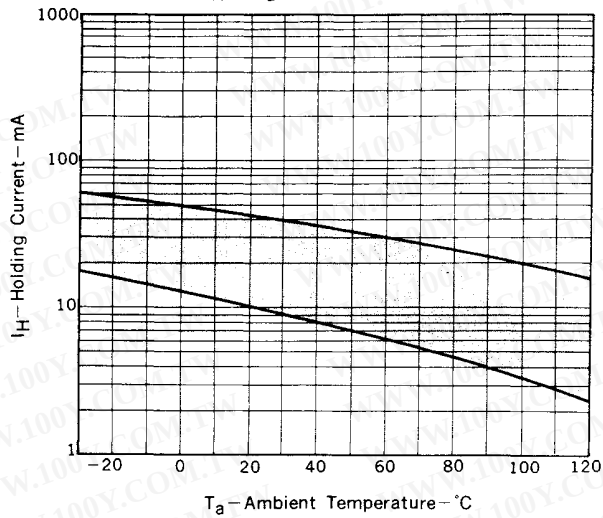
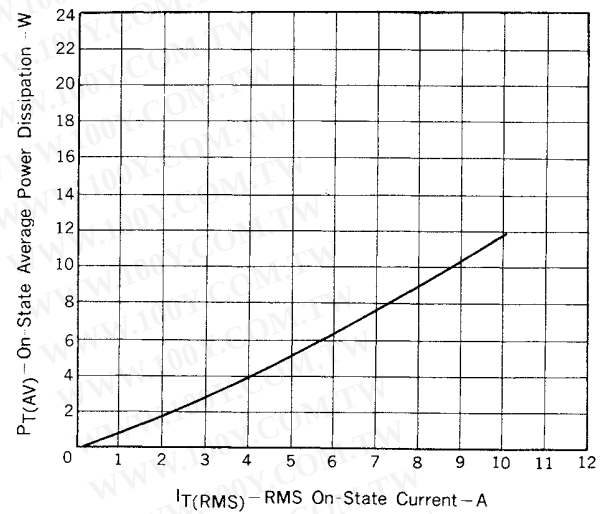
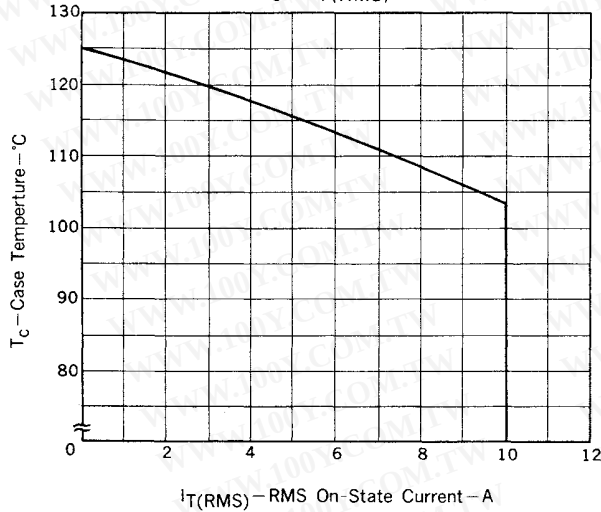
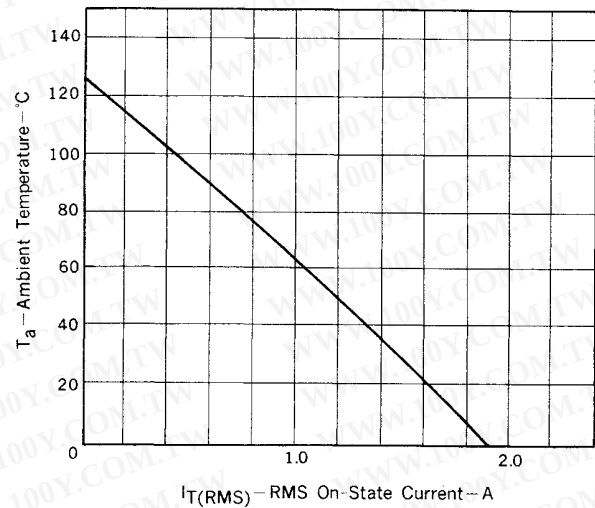
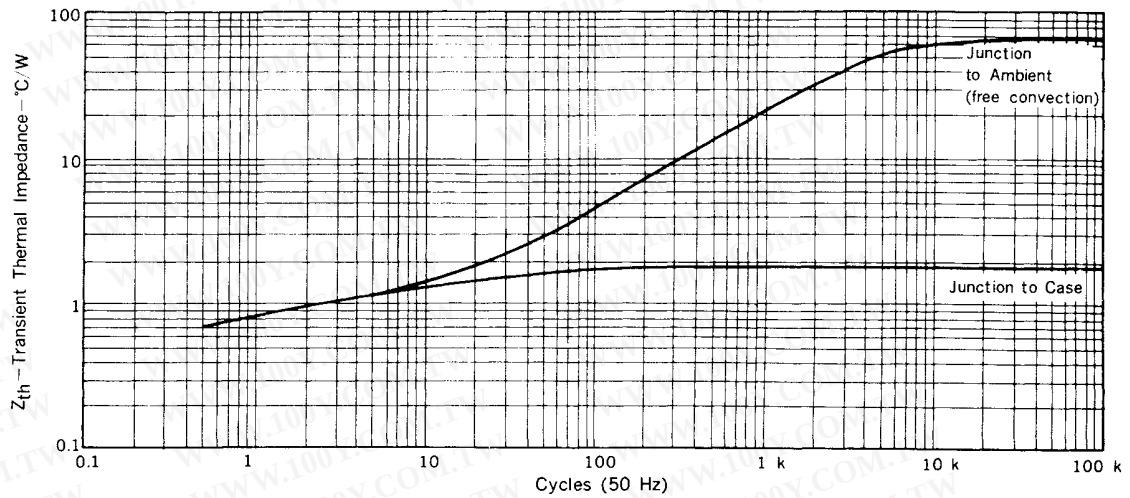
Fig. 9  $I_H - T_a$  TYPICAL DISTRIBUTIONFig. 10  $P_{T(AV)} - I_{T(RMS)}$  CHARACTERISTICFig. 11  $T_c - I_{T(RMS)}$  RATINGFig. 12  $T_a - I_{T(RMS)}$  RATING

Fig. 13  $Z_{th}$  CHARACTERISTIC



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