


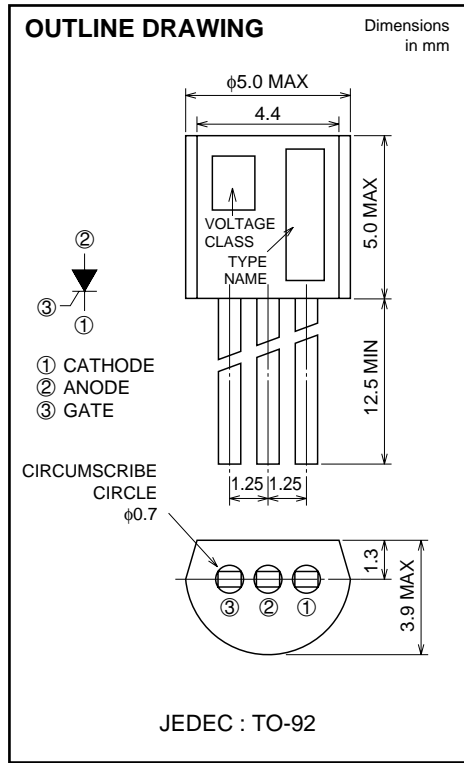
CR03AM

LOW POWER USE
NON-INSULATED TYPE, GLASS PASSIVATION TYPE

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- $I_T (AV)$ **0.3A**
- V_{DRM} **400V/600V**
- I_{GT} **100 μ A**



APPLICATION

Leakage protector, timer, gas ignitor

MAXIMUM RATINGS

| Symbol | Parameter | Voltage class | | Unit |
|------------|--|---------------|-----|------|
| | | 8 | 12 | |
| V_{RRM} | Repetitive peak reverse voltage | 400 | 600 | V |
| V_{RSM} | Non-repetitive peak reverse voltage | 500 | 800 | V |
| $V_R (DC)$ | DC reverse voltage | 320 | 480 | V |
| V_{DRM} | Repetitive peak off-state voltage *1 | 400 | 600 | V |
| V_{DSM} | Non-repetitive peak off-state voltage *1 | 500 | 800 | V |
| $V_D (DC)$ | DC off-state voltage *1 | 320 | 480 | V |

| Symbol | Parameter | Conditions | Ratings | Unit |
|-------------|--------------------------------|--|------------|------------------|
| $I_T (RMS)$ | RMS on-state current | | 0.47 | A |
| $I_T (AV)$ | Average on-state current | Commercial frequency, sine half wave, 180° conduction, $T_a=47^\circ C$ | 0.3 | A |
| I_{TSM} | Surge on-state current | 60Hz sine half wave 1 full cycle, peak value, non-repetitive | 20 | A |
| I^2_t | I^2_t for fusing | Value corresponding to 1 cycle of half wave 60Hz, surge on-state current | 1.6 | A ² s |
| P_{GM} | Peak gate power dissipation | | 0.5 | W |
| $P_G (AV)$ | Average gate power dissipation | | 0.1 | W |
| V_{FGM} | Peak gate forward voltage | | 6 | V |
| V_{RGM} | Peak gate reverse voltage | | 6 | V |
| I_{FGM} | Peak gate forward current | | 0.3 | A |
| T_j | Junction temperature | | -40 ~ +110 | °C |
| T_{stg} | Storage temperature | | -40 ~ +125 | °C |
| — | Weight | Typical value | 0.23 | g |

*1. With gate to cathode resistance $R_{GK}=1k\Omega$.

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ELECTRICAL CHARACTERISTICS

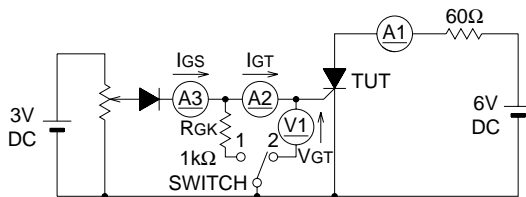
| Symbol | Parameter | Test conditions | Limits | | | Unit |
|----------------------|-----------------------------------|---|--------|------|-------|--------------------|
| | | | Min. | Typ. | Max. | |
| IRRM | Repetitive peak reverse current | $T_j=110^\circ\text{C}$, V_{RRM} applied | — | — | 0.1 | mA |
| IDRM | Repetitive peak off-state current | $T_j=110^\circ\text{C}$, V_{DRM} applied, $R_{GK}=1\text{k}\Omega$ | — | — | 0.1 | mA |
| V _{TM} | On-state voltage | $T_a=25^\circ\text{C}$, $I_{TM}=4\text{A}$, instantaneous value | — | — | 1.8 | V |
| V _{GT} | Gate trigger voltage | $T_j=25^\circ\text{C}$, $V_D=6\text{V}$, $I_T=0.1\text{A}$ *3 | — | — | 0.8 | V |
| V _{GD} | Gate non-trigger voltage | $T_j=110^\circ\text{C}$, $V_D=1/2V_{DRM}$, $R_{GK}=1\text{k}\Omega$ | 0.2 | — | — | V |
| I _{GT} | Gate trigger current | $T_j=25^\circ\text{C}$, $V_D=6\text{V}$, $I_T=0.1\text{A}$ *3 | 1 | — | 100*2 | μA |
| I _H | Holding current | $T_j=25^\circ\text{C}$, $V_D=12\text{V}$, $R_{GK}=1\text{k}\Omega$ | — | 1.5 | 3 | mA |
| R _{th(j-a)} | Thermal resistance | Junction to ambient | — | — | 180 | $^\circ\text{C/W}$ |

*2. If special values of I_{GT} are required, choose at least two items from those listed in the table below. (Example: AB, BC)

| Item | A | B | C |
|-----------------------------------|--------|---------|----------|
| I _{GT} (μA) | 1 ~ 30 | 20 ~ 50 | 40 ~ 100 |

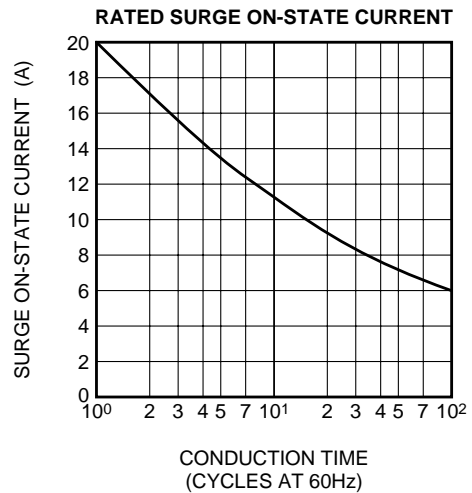
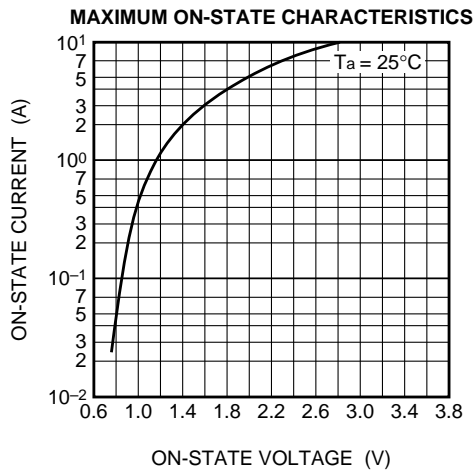
The above values do not include the current flowing through the 1k Ω resistance between the gate and cathode.

*3. I_{GT}, V_{GT} measurement circuit.



SWITCH 1 : I_{GT} measurement
 SWITCH 2 : V_{GT} measurement
 (Inner resistance of voltage meter is about 1k Ω)

PERFORMANCE CURVES

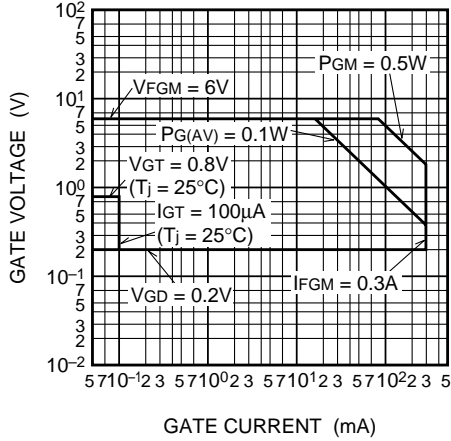


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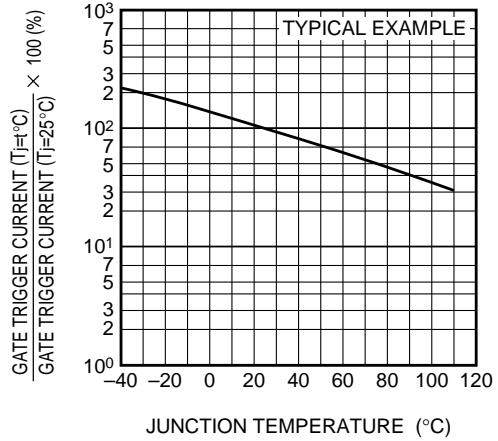
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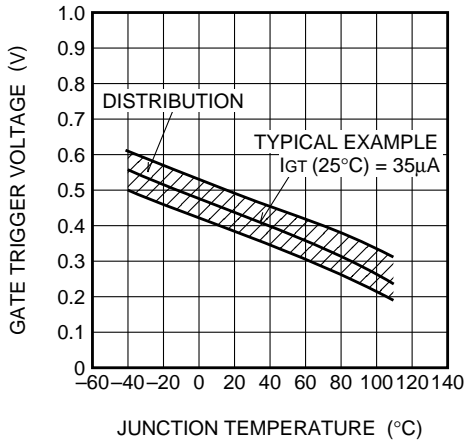
GATE CHARACTERISTICS



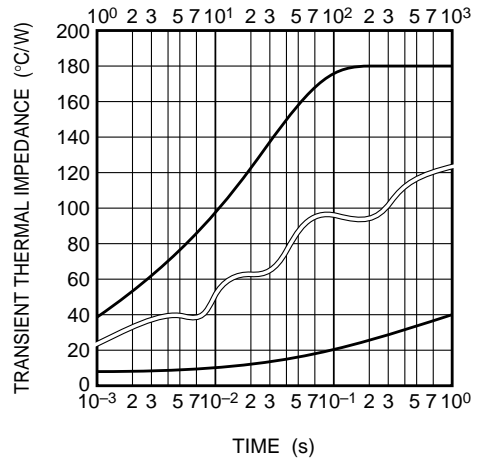
GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE



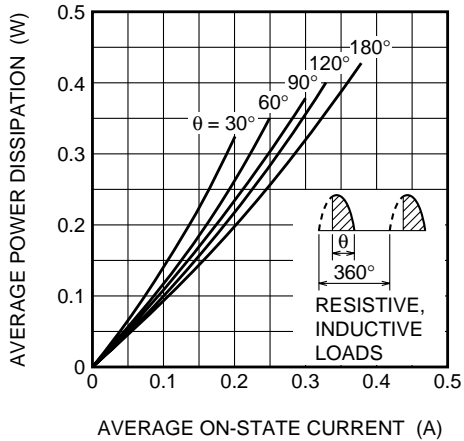
GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE



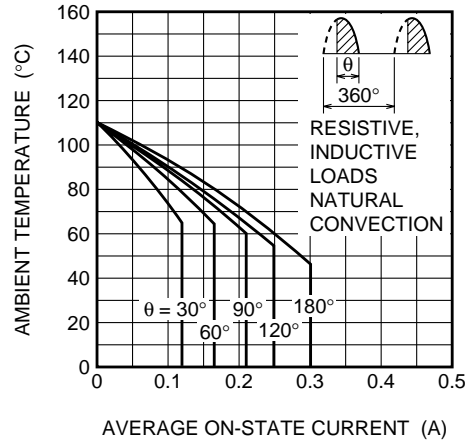
MAXIMUM TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION TO AMBIENT)



MAXIMUM AVERAGE POWER DISSIPATION (SINGLE-PHASE HALF WAVE)

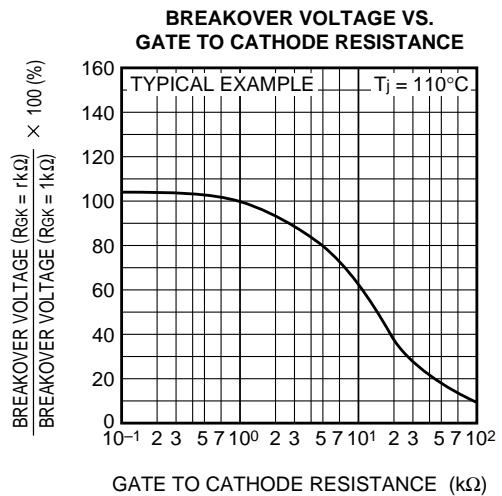
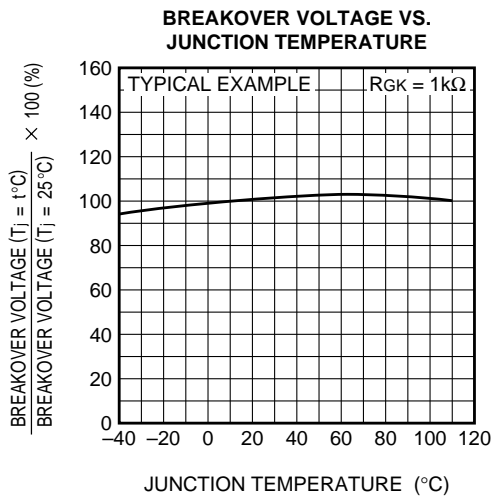
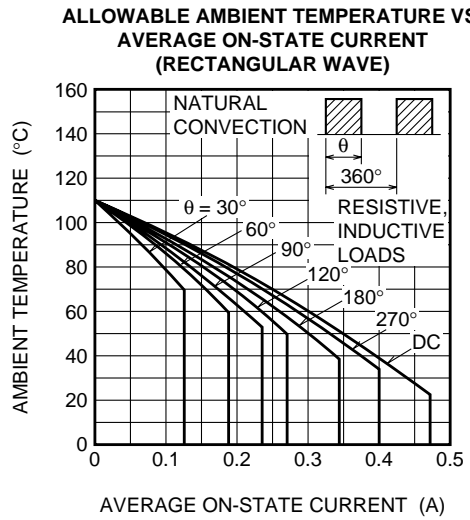
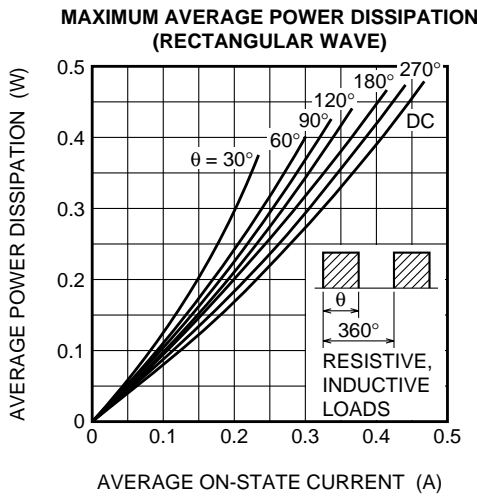
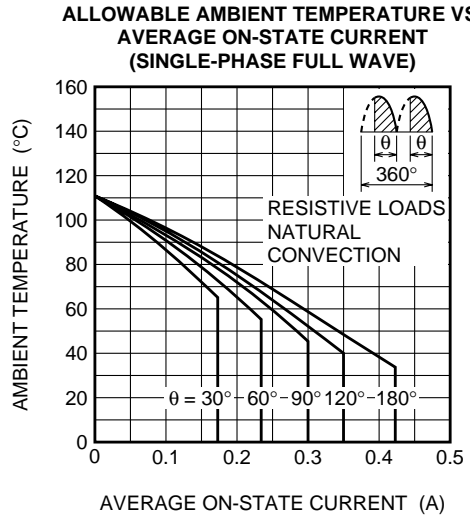
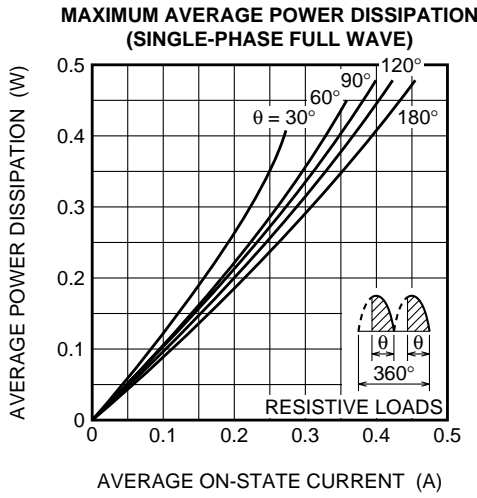


ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE HALF WAVE)



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