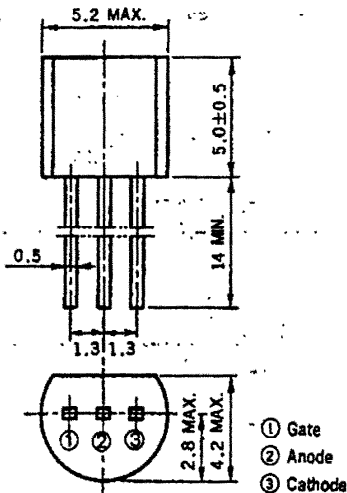


0.47 A(R.M.S.) ALL DIFFUSED MOLD TYPE SCR

PACKAGE DIMENSIONS

in millimeters



DESCRIPTION

The 03P2M and 03P4M are P-gate all diffused mold type SCR rated at 0.47 Amps RMS maximum on-state current, with rated voltages up to 400 volts.

FEATURES

- Plastic TO-92 package.
- 200 μ A gate sensitivity.
- 5 mA holding current.
- 8 A surge current.

APPLICATIONS

- Cassette tape recorder, Television
- Automobile equipment
- Photoflash
- Automatic gas lighter,
- Solid-state relay
- Light display equipment
- Motor, solenoid and temperature control etc.

MAXIMUM RATINGS ($R_{GK} = 1 \text{ k}\Omega$)

| ITEM | SYMBOL | 03P2M | 03P4M | UNIT |
|---------------------------------------|-----------------|--|-------|----------------------|
| Non-Repetitive Peak Reverse Voltage | V_{RSM} | 300 | 500 | V |
| Non-Repetitive Peak Off-State Voltage | V_{DSM} | 300 | 500 | V |
| Repetitive Peak Reverse Voltage | V_{RRM} | 200 | 400 | V |
| Repetitive Peak Off-State Voltage | V_{DRM} | 200 | 400 | V |
| Average On-State Current | $I_T(AV)$ | 0.3 ($T_g = 30^\circ\text{C}$, Single phase half wave) | | A |
| RMS On-State Current | $I_T(RMS)$ | 0.47 | | A |
| Surge On-State Current | I_{TSM} | 8 ($f = 50 \text{ Hz}$, 1 cycle) | | A |
| Fusing Current | $\int i_T^2 dt$ | 0.15 ($1 \text{ ms} \leq t \leq 10 \text{ ms}$) | | A^2s |
| Peak Gate Power Dissipation | P_{GM} | 0.1 ($f \geq 50 \text{ Hz}$, duty $\leq 10\%$) | | W |
| Average Gate Power Dissipation | $P_{G(AV)}$ | 0.01 | | W |
| Peak Gate Forward Current | I_{FGM} | 0.1 ($f \geq 50 \text{ Hz}$, duty $\leq 10\%$) | | A |
| Peak Gate Reverse Voltage | V_{RGM} | 6 | | V |
| Junction Temperature | T_j | -40 to +125 | | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | -40 to +150 | | $^\circ\text{C}$ |

ELECTRICAL CHARACTERISTICS ($T_j = 25^\circ\text{C}$, $R_{GK} = 1\text{ k}\Omega$)

| ITEM | SYMBOL | TEST CONDITIONS | MIN. | TYP. | MAX. | UNIT | |
|--|---------------------|---|---------------------------|---------------|--|------------------------|---------------|
| Repetitive Peak Reverse Current | I_{RRM} | $V_{RM} = V_{RRM}$ | $T_j = 25^\circ\text{C}$ | — | — | 10 | μA |
| | | | $T_j = 125^\circ\text{C}$ | — | — | 100 | |
| Repetitive Peak Off-State Current | I_{DRM} | $V_{DM} = V_{DRM}$ | $T_j = 25^\circ\text{C}$ | — | — | 10 | μA |
| | | | $T_j = 125^\circ\text{C}$ | — | — | 100 | |
| Critical Rate of Rise of Off-State Voltage | dv/dt | $V_{DM} = \frac{2}{3} V_{DRM}$, $T_j = 125^\circ\text{C}$ | — | 40 | — | $\text{V}/\mu\text{s}$ | |
| On-State Voltage | V_{TM} | $I_{TM} = 4\text{ A}$ | — | — | 2.5 | V | |
| Gate Trigger Current | I_{GT} | $V_{DM} = 6\text{ V}$, $R_L = 100\ \Omega$ | — | — | 200 | μA | |
| Gate Trigger Voltage | V_{GT} | $V_{DM} = 6\text{ V}$, $R_L = 100\ \Omega$ | — | — | 0.8 | V | |
| Gate Non-Trigger Voltage | V_{GD} | $V_{DM} = \frac{1}{2} V_{DRM}$, $T_j = 125^\circ\text{C}$ | 0.1 | — | — | V | |
| Holding Current | I_H | $V_{DM} = 24\text{ V}$, $I_{TM} = 4\text{ A}$ | — | — | 5 | mA | |
| Commutating Turn-Off Time | t_q | $I_{TM} = 200\text{ mA}$, $di/dt = 15\text{ A}/\mu\text{s}$ $V_{RM} \geq 25\text{ V}$, $V_{DM} = \frac{2}{3} V_{DRM}$ $dv/dt = 20\text{ V}/\mu\text{s}$, $T_j = 125^\circ\text{C}$ | — | 25 | — | μs | |
| | | | Thermal Resistance | $R_{th(j-c)}$ | Junction to Case (flat side of case is temperature reference point) | — | — |
| $R_{th(j-a)}$ | Junction to Ambient | — | — | 230 | | | |

Fig. 1 $I_{TM} - V_{TM}$ CHARACTERISTICS

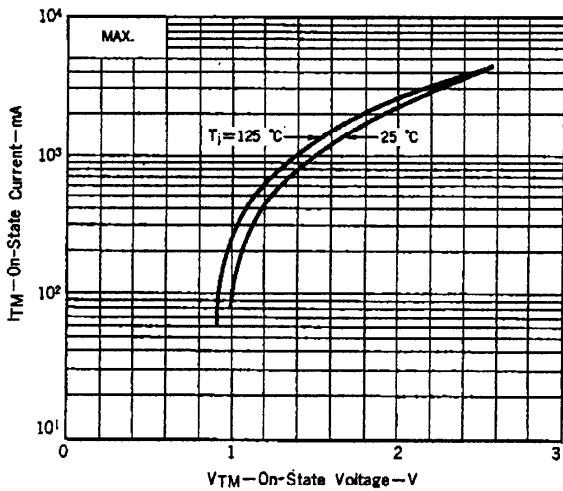


Fig. 2 I_{TSM} RATING

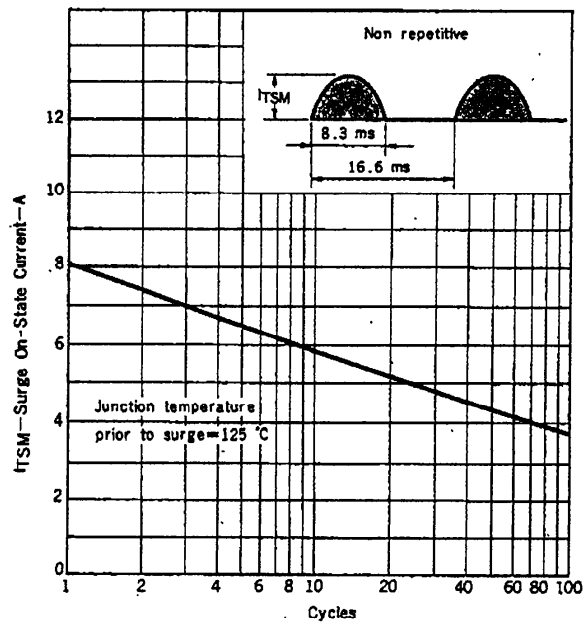


Fig. 3 GATE POWER RATINGS

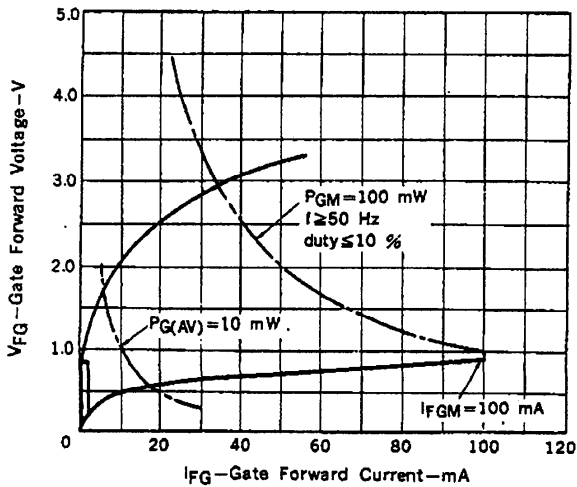


Fig. 4 $I_{GS} - V_{GT}$ DISTRIBUTION

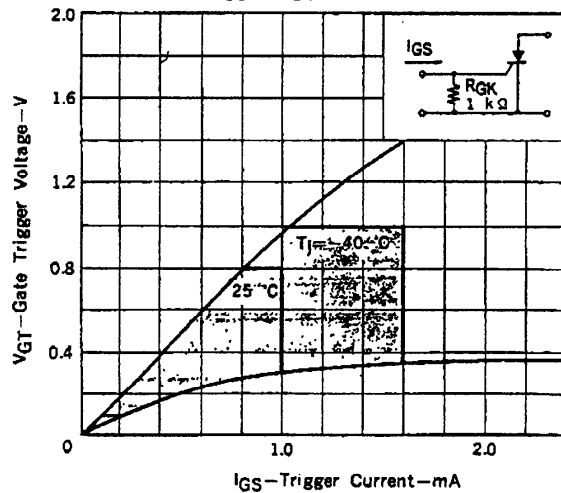


Fig. 5 $I_{GT} - T_a$ TYPICAL DISTRIBUTION

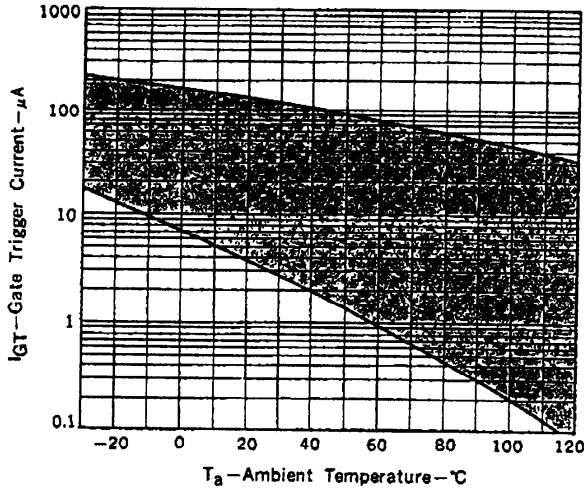


Fig. 6 $V_{GT} - T_a$ TYPICAL DISTRIBUTION

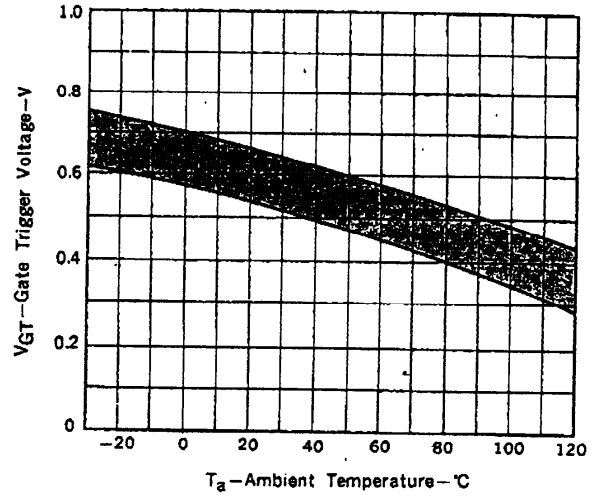


Fig. 7 $I_{GS} - \tau_G$ TYPICAL DISTRIBUTION

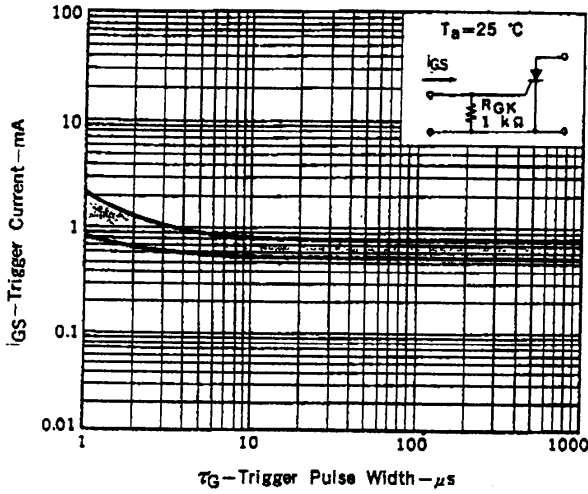


Fig. 8 $V_{GT} - \tau_G$ TYPICAL DISTRIBUTION

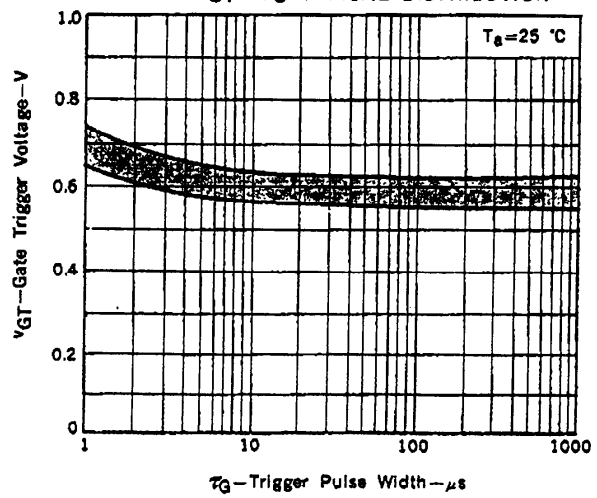


Fig. 9 $P_{T(AV)} - I_{T(AV)}$ CHARACTERISTICS

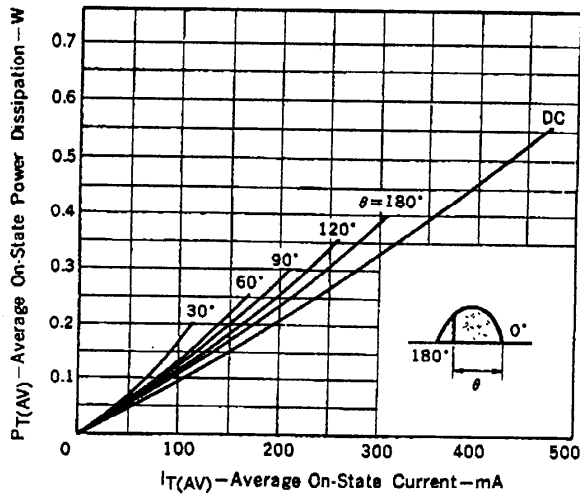


Fig. 10 $I_{T(AV)} - T_a$ RATINGS

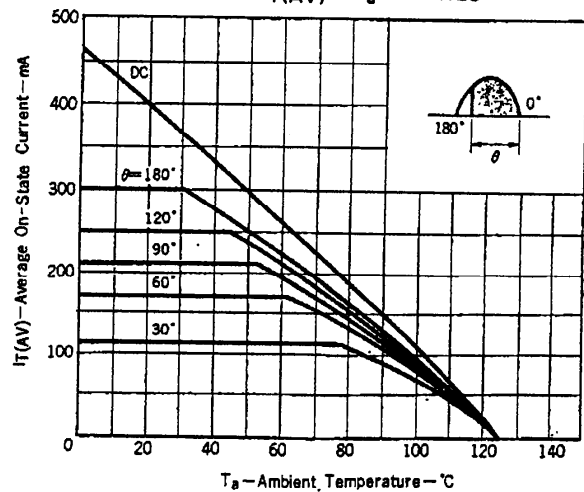


Fig. 11 $I_H - T_a$ TYPICAL DISTRIBUTION

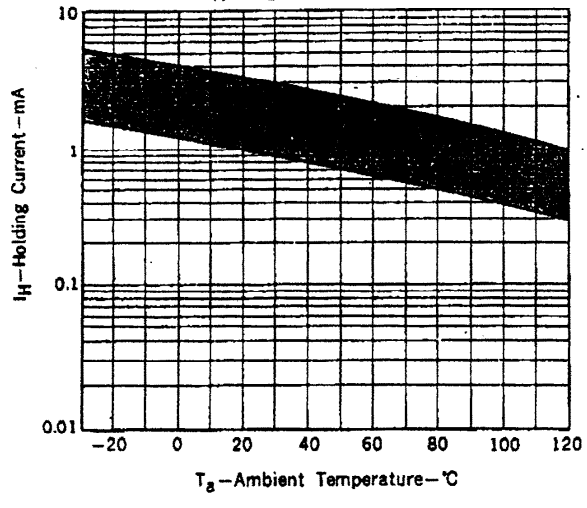
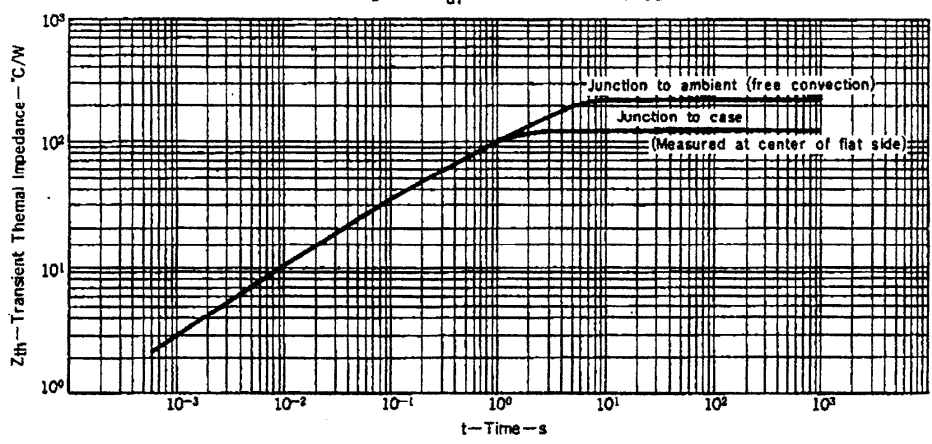


Fig. 12 Z_{th} CHARACTERISTICS



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