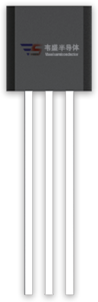
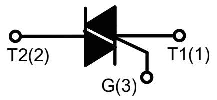
## DESCRIPTION:

The Z0107NA SCR series with the parallel resistor between Gate and Cathode are especially recommended for use on straight hair, igniter, anion generator, etc.


TO-92



## MAIN FEATURES

| Symbol | Value | Unit |
|---|---|---|
| $I_{T(RMS)}$ | 1 | A |
| $I_{TSM}$ | 16 | A |
| $V_{TM}$ | ≤1.5 | V |

## ABSOLUTE MAXIMUM RATINGS

| Parameter | | Symbol | Value | Unit |
|---|---|---|---|---|
| Storage junction temperature range | | $T_{stg}$ | -40 - 150 | ℃ |
| Operating junction temperature range | | $T_j$ | -40 - 125 | ℃ |
| Repetitive peak off-state voltage ($T_j$=25℃) | | $V_{DRM}$ | 600/800 | V |
| Repetitive peak reverse voltage ($T_j$=25℃) | | $V_{RRM}$ | 600/800 | V |
| Non repetitive surge peak off-state voltage | | $V_{DSM}$ | $V_{DRM}$ + 100 | V |
| Non repetitive peak reverse voltage | | $V_{RSM}$ | $V_{RRM}$ + 100 | V |
| RMS on-state current | TO-92 ($T_C$=50℃) | $I_{T(RMS)}$ | 1 | A |
| Non repetitive surge peak on-state current (full cycle, F=50Hz) | | $I_{TSM}$ | 16 | A |
| $I^2t$ value for fusing (tp=10ms) | | $I^2t$ | 1.28 | $A^2s$ |
| Critical rate of rise of on-state current ($I_G$=2×$I_{GT}$) | | dI/dt | 20 | A/μs |
| Peak gate current | | $I_{GM}$ | 2 | A |
| Average gate power dissipation | | $P_{G(AV)}$ | 0.5 | W |
| Peak gate power | | $P_{GM}$ | 5 | W |

## ELECTRICAL CHARACTERISTICS ($T_j$=25℃ unless otherwise specified)

| Symbol | Test Condition | Quadrant | | Value | | Unit |
|---|---|---|---|---|---|---|
| | | | | T | D | |
| $I_{GT}$ | $V_D$=12V $R_L$=33Ω | I - II -III | MAX | 5 | 5 | mA |
| | | IV | | 5 | 10 | |
| $V_{GT}$ | | ALL | MAX | 1.3 | | V |
| $V_{GD}$ | $V_D$=$V_{DRM}$ $T_j$=125℃<br>$R_L$=3.3KΩ | ALL | MIN | 0.2 | | V |
| $I_L$ | $I_G$=1.2$I_{GT}$ | I -III | MAX | 5 | 5 | mA |
| | | II -IV | | 10 | 20 | |
| $I_H$ | $I_T$=200mA | | MAX | 5 | 7 | mA |
| dV/dt | $V_D$=2/3$V_{DRM}$ Gate Open $T_j$=125℃ | | MIN | 15 | 20 | V/μs |

## STATIC CHARACTERISTICS

| Symbol | Parameter | | Value(MAX) | Unit |
|---|---|---|---|---|
| $V_{TM}$ | $I_{TM}$=1.4A tp=380μs | $T_j$=25℃ | 1.5 | V |
| $I_{DRM}$ | $V_D$=$V_{DRM}$ $V_R$=$V_{RRM}$ | $T_j$=25℃ | 5 | μA |
| $I_{RRM}$ | | $T_j$=125℃ | 500 | μA |

## THERMAL RESISTANCES

| Symbol | Parameter | | Value | Unit |
|---|---|---|---|---|
| $R_{th(j-c)}$ | junction to case(AC) | TO-92 | 60 | ℃/W |

**FIG.1:** Maximum power dissipation versus RMS on-state current

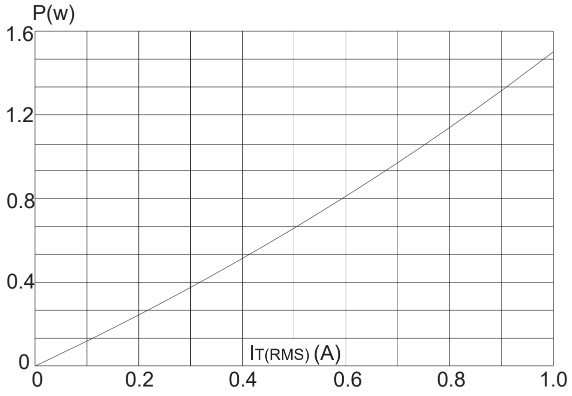


**FIG.2:** RMS on-state current versus case temperature

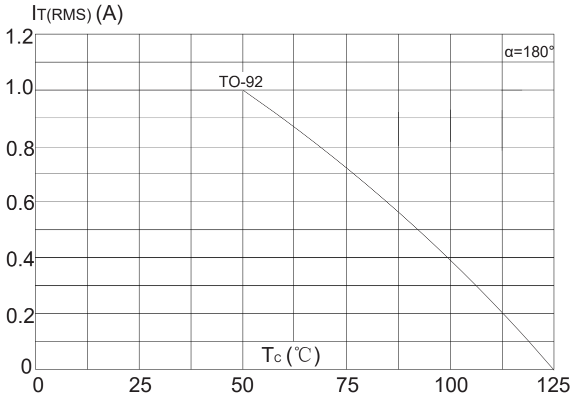


**FIG.3:** Surge peak on-state current versus number of cycles

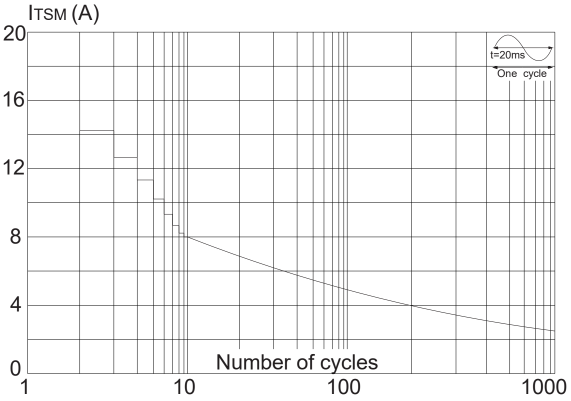


**FIG.4:** On-state characteristics (maximum values)

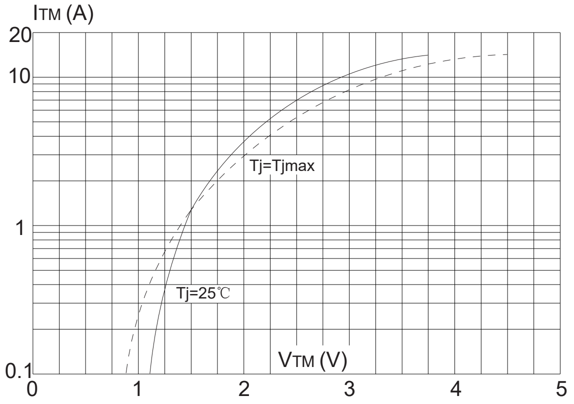


**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<20ms and corresponding value of $I^2t$ (dI/dt < 20A/μs)

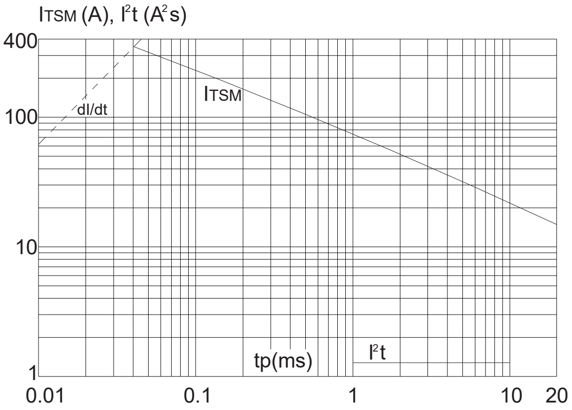


**FIG.6:** Relative variations of gate trigger current, holding current and latching current versus junction temperature