



## JX008NP2 0.8A Sensitive SCR

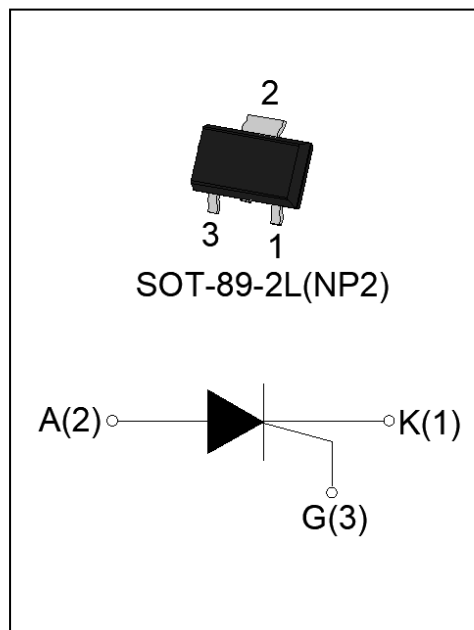
Rev.A.1.0

### DESCRIPTION:

The JX008NP2 SCR provides high  $dV/dt$  rate with strong resistance to electromagnetic interface. It is especially recommended for use on residual current circuit breaker, straight hair, igniter etc. Package SOT-89-2L is RoHS compliant.

### MAIN FEATURES

| Symbol              | Value | Unit    |
|---------------------|-------|---------|
| $I_{T(RMS)}$        | 0.8   | A       |
| $V_{DRM} / V_{RRM}$ | 800   | V       |
| $I_{GT}$            | 200   | $\mu A$ |



### 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 ( $T_j=25^\circ C$ )                                 | $V_{DRM}$    | 800     | V         |
| Repetitive peak reverse voltage ( $T_j=25^\circ C$ )                                   | $V_{RRM}$    | 800     | V         |
| Average on-state current ( $T_c = 68^\circ C$ )  | $I_{T(AV)}$  | 0.5     | A         |
| RMS on-state current ( $T_c = 68^\circ C$ )  | $I_{T(RMS)}$ | 0.8     | A         |
| Non repetitive surge peak on-state current ( $t_p=10ms, T_j=25^\circ C$ )              | $I_{TSM}$    | 8       | A         |
| Non repetitive surge peak on-state current ( $t_p=8.3ms, T_j=25^\circ C$ )             |              | 9       |           |
| $I^2t$ value for fusing ( $t_p=10ms, T_j=25^\circ C$ )                                 | $I^2t$       | 0.32    | $A^2s$    |
| Critical rate of rise of on-state current ( $I_G=2 I_{GT}, f=100Hz, T_j=125^\circ C$ ) | $di/dt$      | 50      | $A/\mu s$ |
| Peak gate current ( $t_p=20\mu s, T_j=125^\circ C$ )                                   | $I_{GM}$     | 1       | A         |
| Average gate power dissipation ( $T_j=125^\circ C$ )                                   | $P_{G(AV)}$  | 0.1     | W         |

|  |          |   |    |
|--|----------|---|----|
| Peak gate power  | $P_{GM}$ | 2 | W  |
| Peak pulse voltage<br>( $T_j=25$ ; non-repetitive,off-state;FIG.8) | $V_{pp}$ | 1 | kV |

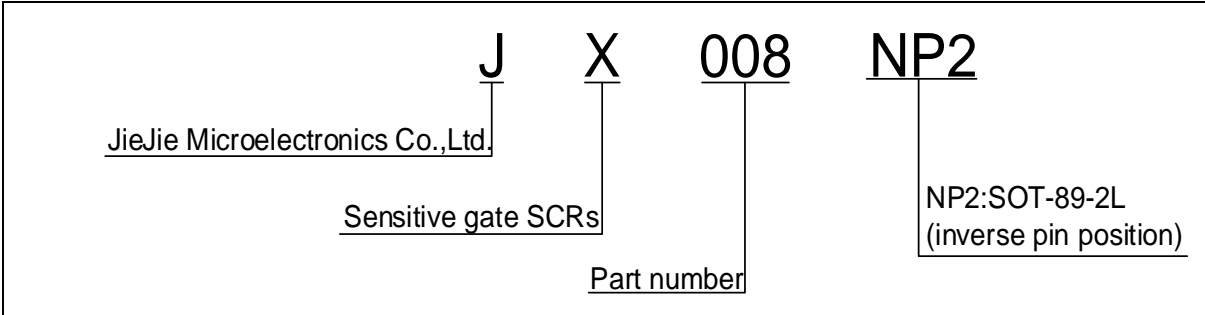
**NOTE 1:** When we parallel connect a 1K resistor between Gate and Cathode, the  $T_j$  can reach 125 ; if without this resistor, the  $T_j$  only can reach 110 .

**ELECTRICAL CHARACTERISTICS** unless otherwise specified

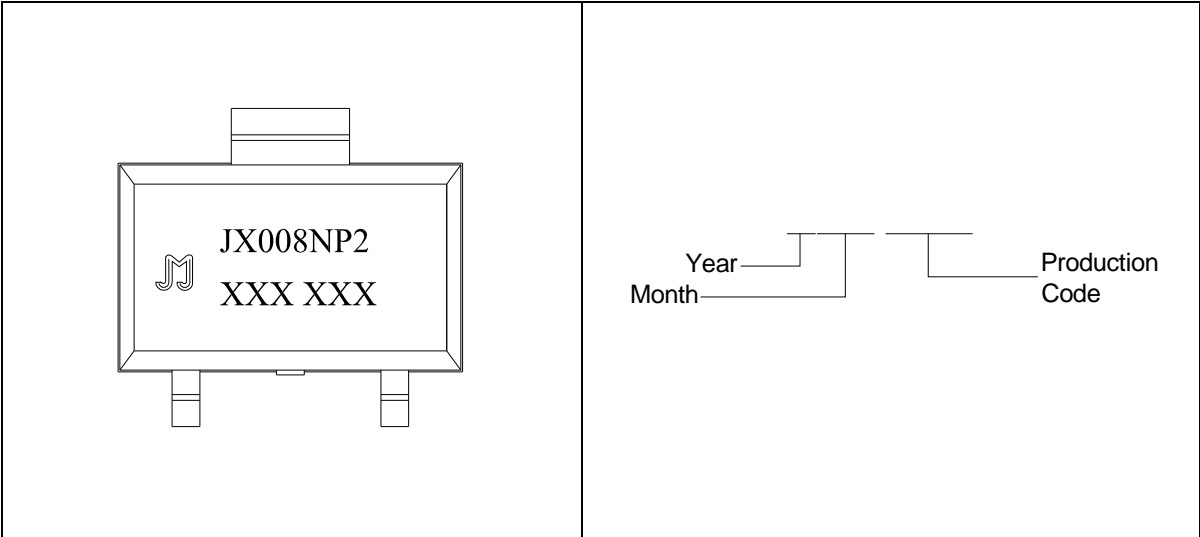
| Symbol   | Test Condition        | Value |      |      | Unit    |
|----------|-----------------------|-------|------|------|---------|
|          |                       | MIN.  | TYP. | MAX. |         |
| $I_{GT}$ | $V_D=12V R_L=33$      | -     | 50   | 200  | $\mu A$ |
| $V_{GT}$ |                       | -     | 0.5  | -    | V       |
| $V_{GD}$ | $V_D=V_{DRM} T_j=125$ | 0.2   | -    | -    | V       |

$I_L$   $I_G$

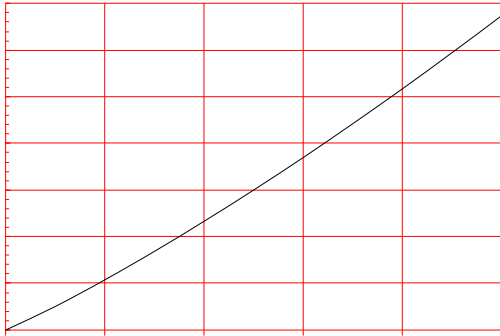
ORDERING INFORMATION



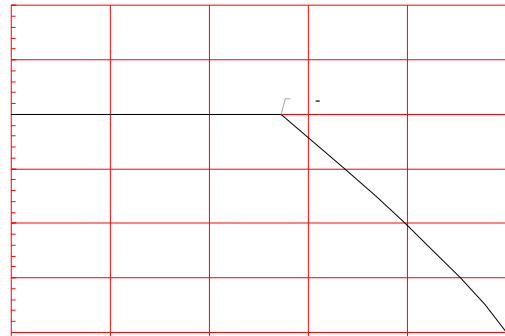
MARKING



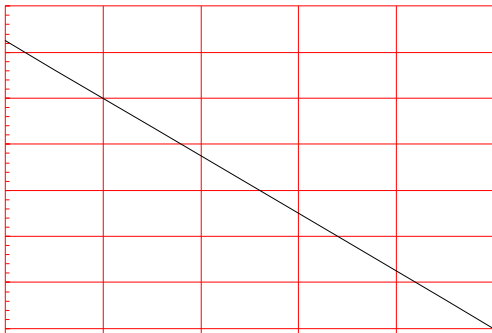
**FIG.1** Maximum power dissipation versus RMS on-state current



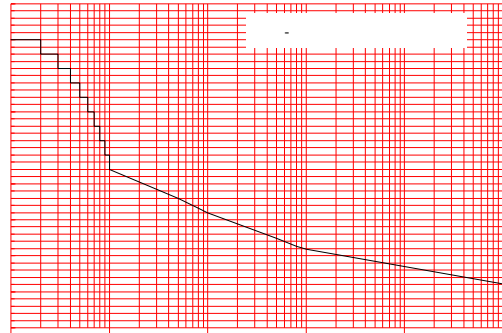
**FIG.2:** RMS on-state current versus case temperature



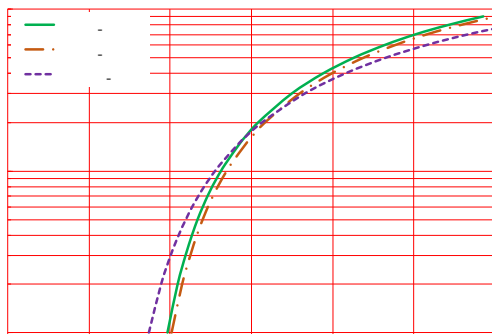
**FIG.3:** RMS on-state current versus ambient temperature (printed circuit board FR4,copper thickness:35μm)(full cycle)



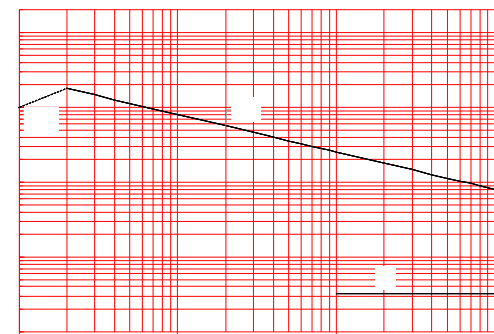
**FIG.4:** Surge peak on-state current versus number of cycles



**FIG.5:** On-state characteristics



**FIG.6:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$ , and corresponding value of  $I^2t$  ( $di/dt < 50\text{A}/\mu\text{s}$ )



**FIG.7:** Relative variations of gate trigger current, holding current and latching current versus junction temperature

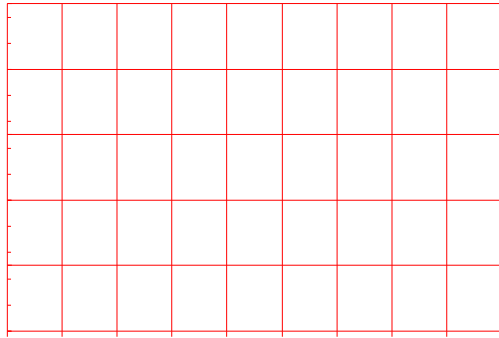
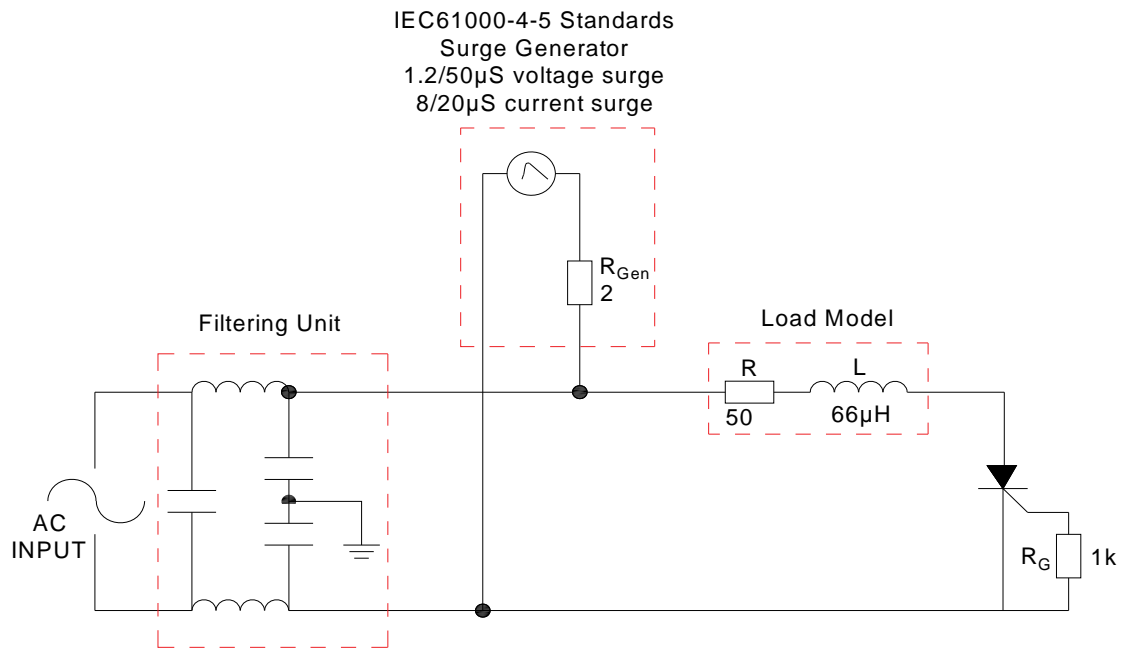


FIG.8 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards.



**ORDERING INFORMATION**

| Order code | Voltage<br>$V_{DRM}/V_{RRM}$ (V) | IGT( $\mu$ A) | Package   | Base qty.<br>(pcs) | Delivery<br>mode |
|------------|----------------------------------|---------------|-----------|--------------------|------------------|
| JX008NP2   | 800                              | 200           | SOT-89-2L | 4,000              | Tape & Reel      |

**Document Revision History**

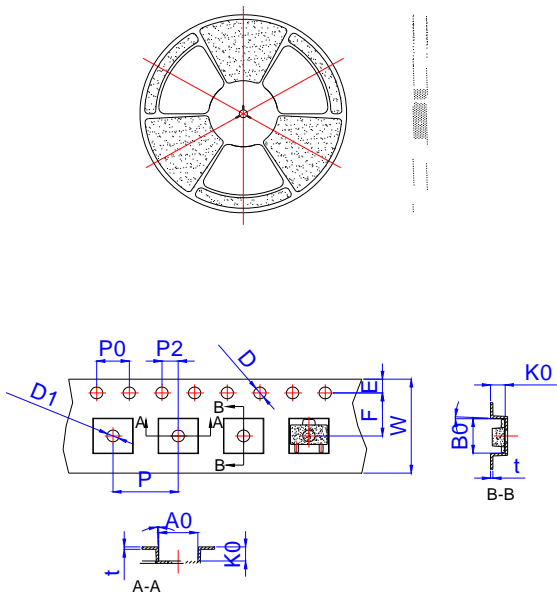
| Date         | Revision | Changes     |
|--------------|----------|-------------|
| Apr.12, 2023 | A.1.0    | Last update |

PACKAGE MECHANICAL DATA






DELIVERY MODE



| Ref. | Dimensions  |       |       |        |       |       |
|------|-------------|-------|-------|--------|-------|-------|
|      | Millimeters |       |       | Inches |       |       |
|      | Min.        | Typ.  | Max.  | Min.   | Typ.  | Max.  |
| E    | 1.65        | 1.75  | 1.85  | 0.065  | 0.069 | 0.073 |
| F    | 5.45        | 5.50  | 5.55  | 0.215  | 0.217 | 0.219 |
| P2   | 1.90        | 2.00  | 2.10  | 0.075  | 0.079 | 0.082 |
| D    | -           | 1.50  | 1.60  | -      | 0.059 | 0.063 |
| D1   | 1.50        | -     | -     | 0.059  | -     | -     |
| P0   | 3.90        | 4.00  | 4.10  | 0.154  | 0.157 | 0.161 |
| 10P0 | 39.80       | 40.00 | 40.20 | 1.567  | 1.575 | 1.583 |
| W    | -           | -     | 12.30 | -      | -     | 0.482 |
| P    | 7.90        | 8.00  | 8.10  | 0.311  | 0.315 | 0.319 |
| A0   | 5.20        | 5.30  | 5.40  | 0.204  | 0.208 | 0.212 |
| B0   | 4.80        | 4.90  | 5.00  | 0.188  | 0.192 | 0.196 |
| K0   | 1.75        | 1.85  | 1.95  | 0.069  | 0.073 | 0.076 |
| t    | 0.20        | 0.25  | 0.30  | 0.008  | 0.010 | 0.012 |
|      | 3°          |       | 5°    | 3°     |       | 5°    |

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