



## JX020H 2A Sensitive SCR

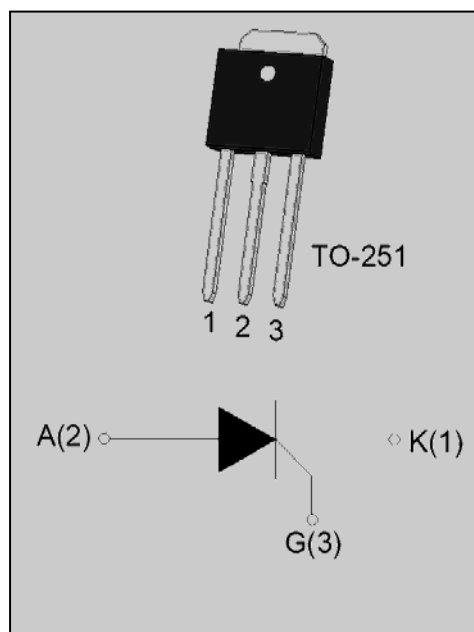
Rev.A.1.1

### DESCRIPTION:

The JX020H 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 TO-251 is RoHS compliant.

### MAIN FEATURES

| Symbol            | Value      | Unit    |
|-------------------|------------|---------|
| $I_{T(RMS)}$      | 2          | A       |
| $V_{DRM}/V_{RRM}$ | 600        | V       |
| $I_{GT}$          | $\leq 200$ | $\mu A$ |



### 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 ( $T_j=25^\circ C$ )                                              | $V_{DRM}$    | 600     | V         |
| Repetitive peak reverse voltage ( $T_j=25^\circ C$ )                                                | $V_{RRM}$    | 600     | V         |
| Average on-state current ( $T_c \leq 104^\circ C$ )                                                 | $I_{T(AV)}$  | 1.3     | A         |
| RMS on-state current ( $T_c \leq 104^\circ C$ )                                                     | $I_{T(RMS)}$ | 2       | A         |
| Non repetitive surge peak on-state current ( $t_p=10ms$ , $T_j=25^\circ C$ )                        | $I_{TSM}$    | 20      | A         |
| Non repetitive surge peak on-state current ( $t_p=8.3ms$ , $T_j=25^\circ C$ )                       |              | 22      |           |
| $I^2t$ value for fusing ( $t_p=10ms$ , $T_j=25^\circ C$ )                                           | $I^2t$       | 2       | $A^2s$    |
| Critical rate of rise of on-state current ( $I_G=2 \times I_{GT}$ , $f=100Hz$ , $T_j=125^\circ C$ ) | $di/dt$      | 50      | $A/\mu s$ |
| Peak gate current ( $t_p=20\mu s$ , $T_j=125^\circ C$ )                                             | $I_{GM}$     | 1.2     | A         |
| Average gate power dissipation ( $T_j=125^\circ C$ )                                                | $P_{G(AV)}$  | 0.2     | W         |



|                                                                                    |          |     |    |
|------------------------------------------------------------------------------------|----------|-----|----|
| Peak gate power                                                                    | $P_{GM}$ | 2   | W  |
| Peak pulse voltage<br>( $T_j=25^\circ\text{C}$ ; non-repetitive, off-state; FIG.7) | $V_{pp}$ | 0.5 | kV |

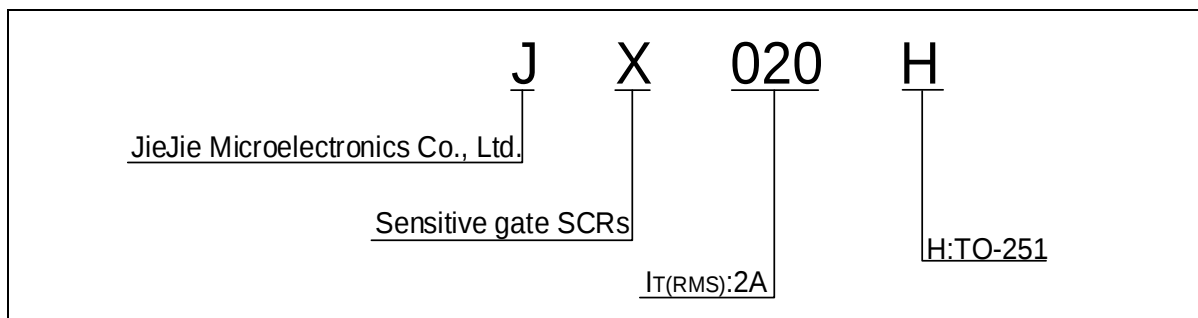
**NOTE 1:** Operating junction temperature  $T_j$  is up to  $125^\circ\text{C}$  when a resistor  $\leq 1\text{k}\Omega$  is connected between Gate and Cathode. Without this resistor, the  $T_j$  is up to  $110^\circ\text{C}$  only.

### ELECTRICAL CHARACTERISTICS ( $T_j=25^\circ\text{C}$ unless otherwise specified)

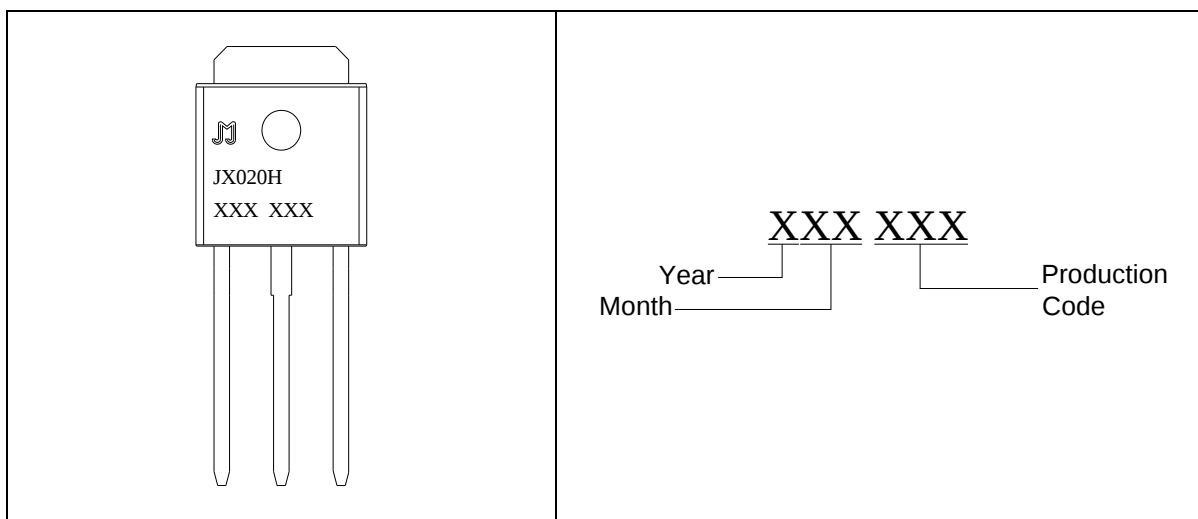
| Symbol                                                                                  | Test Condition                                                     | Value |      |      | Unit             |
|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------|-------|------|------|------------------|
|                                                                                         |                                                                    | MIN.  | TYP. | MAX. |                  |
| $I_{GT}$                                                                                | $V_D=12\text{V}$ $R_L=33\Omega$                                    | -     | 50   | 200  | $\mu\text{A}$    |
| $V_{GT}$                                                                                |                                                                    | -     | 0.6  | 0.8  | V                |
| $V_{GD}$                                                                                | $V_D=V_{DRM}$ $T_j=125^\circ\text{C}$                              | 0.2   | -    | -    | V                |
| $I_L$  | $I_G=1.2 I_{GT}$                                                   | -     | -    | 6    | mA               |
| $I_H$                                                                                   | $I_T=0.05\text{A}$                                                 | -     | -    | 5    | mA               |
| $dV/dt$                                                                                 | $V_D=400\text{V}$ $T_j=125^\circ\text{C}$ $R_{GK}=1\text{k}\Omega$ | 20    | -    | -    | V/ $\mu\text{s}$ |



## ORDERING INFORMATION



## MARKING



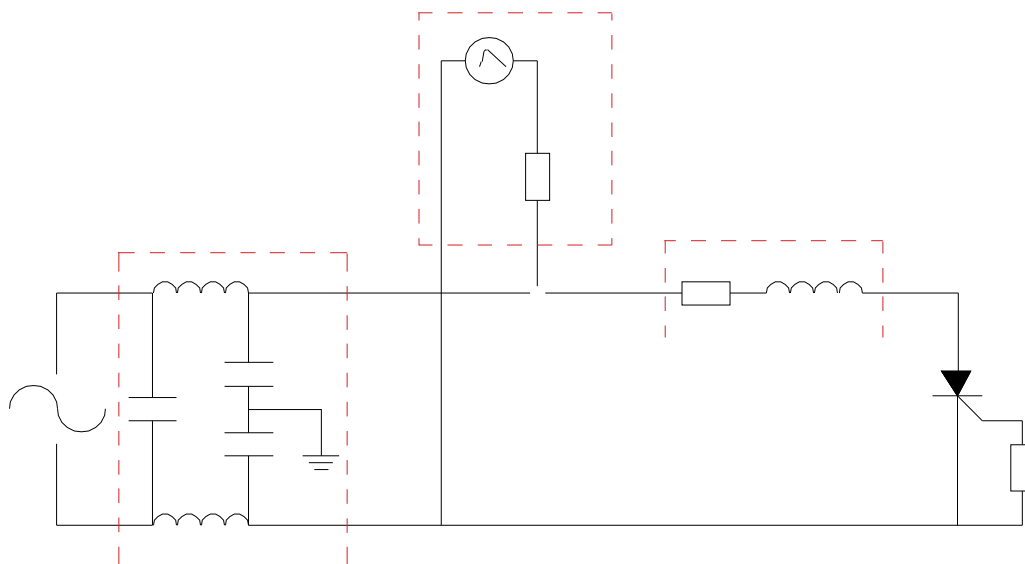


**FIG.1:** Maximum power dissipation versus RMS on-state current



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

FIG.7 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards.





**JX020H**



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