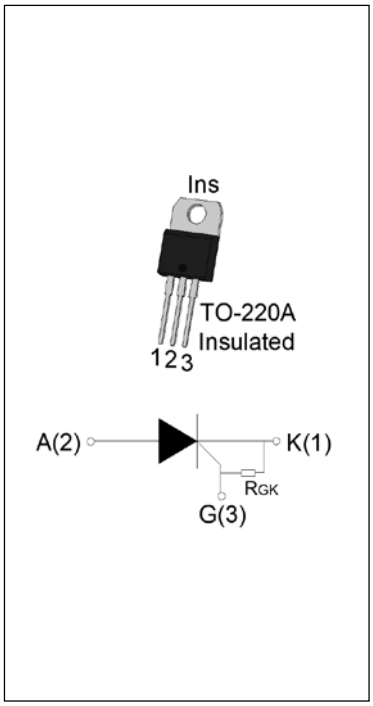
## JR0805A 8A SCR

Rev.A.1.0

### DESCRIPTION:

The JR0805A SCR with the parallel resistor between Gate and Cathode, $R_{GK}$=10~80kΩ，is especially recommended for use on straight hair, igniter, anion generator, etc. From all three terminals to external heatsink, JR0805A provides a rated insulation voltage of 2500 $V_{RMS}$ ,complying with UL standards (File ref: E252906). Package TO-220A is RoHS compliant.




### MAIN FEATURES

| Symbol | Value | Unit |
|---|---|---|
| $I_{T(RMS)}$ | 8 | A |
| $V_{DRM}/V_{RRM}$ | 600 | V |
| $I_{GT}$ | ≤200 | μA |

### ABSOLUTE MAXIMUM RATINGS

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Storage junction temperature range | $T_{stg}$ | -40-150 | ℃ |
| Operating junction temperature range | $T_j$ | -40-125① | ℃ |
| Repetitive peak off-state voltage ($T_j$=25℃) | $V_{DRM}$ | 600 | V |
| Repetitive peak reverse voltage ($T_j$=25℃) | $V_{RRM}$ | 600 | V |
| Average on-state current ($T_C$≤95℃) | $I_{T(AV)}$ | 5 | A |
| RMS on-state current ($T_C$≤95℃) | $I_{T(RMS)}$ | 8 | A |
| Non repetitive surge peak on-state current ($t_p$=10ms , $T_j$=25℃) | $I_{TSM}$ | 80 | A |
| Non repetitive surge peak on-state current ($t_p$=8.3ms , $T_j$=25℃) | | 88 | |
| $I^2t$ value for fusing ($t_p$=10ms , $T_j$=25℃) | $I^2t$ | 32 | $A^2s$ |
| Critical rate of rise of on-state current ($I_G$=2×$I_{GT}$ , f=100Hz , $T_j$=125℃) | dI/dt | 50 | A/μs |
| Peak gate current ($t_p$=20μs, $T_j$=125℃) | $I_{GM}$ | 4 | A |
| Average gate power dissipation ($T_j$=125℃) | $P_{G(AV)}$ | 1 | W |

| | | | |
|---|---|---|---|
| Peak gate power | $P_{GM}$ | 5 | W |
| Peak pulse voltage ($T_j$=25℃; non-repetitive,off-state;FIG.7) | $V_{pp}$ | 0.5 | kV |

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

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

| Symbol | Test Condition | Value | | | Unit |
|---|---|---|---|---|---|
| | | MIN. | TYP. | MAX. | |
| $I_{GT}$ | $V_D$=12V $R_L$=33Ω | - | - | 200 | μA |
| $V_{GT}$ | | - | - | 0.8 | V |
| $V_{GD}$ | $V_D$=$V_{DRM}$ $T_j$=125℃ | 0.2 | - | - | V |
| $I_L$ | $I_G$=1.2 $I_{GT}$ | - | - | 6 | mA |
| $I_H$ | $I_T$=0.1A | - | - | 5 | mA |
| dV/dt | $V_D$=400V $T_j$=125℃ $R_{GK}$=1KΩ | 50 | - | - | V/μs |
| | $V_D$=400V $T_j$=125℃ $R_{GK}$=220Ω | 250 | - | - | |
| $t_{on}$ | $I_G$=10mA $I_A$=20mA $I_R$=2mA $T_j$=25℃ | - | 2 | - | μs |
| $t_{off}$ | | - | 50 | - | |

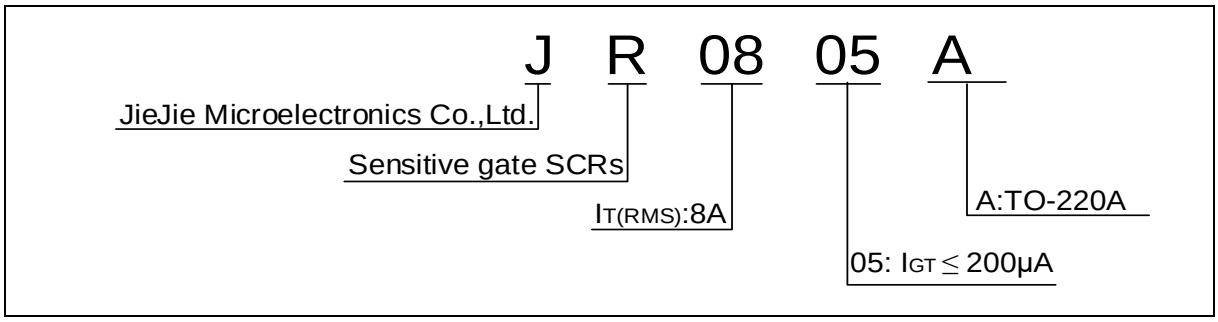
## STATIC CHARACTERISTICS

| Symbol | Parameter | | Value(MAX.) | Unit |
|---|---|---|---|---|
| $V_{TM}$ | $I_{TM}$=16A $t_p$=380μs | $T_j$=25℃ | 1.55 | V |
| $V_{TO}$ | Threshold voltage | $T_j$=125℃ | 0.79 | V |
| $R_D$ | Dynamic resistance | $T_j$=125℃ | 0.02 | Ω |
| $I_{DRM}$ | $V_D$=$V_{DRM}$ $V_R$=$V_{RRM}$ | $T_j$=25℃ | 5 | μA |
| $I_{RRM}$ | | $T_j$=125℃ | 0.5 | mA |

## THERMAL RESISTANCES

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $R_{th(j-c)}$ | junction to case (DC) | 2.8 | ℃/W |
| $R_{th(j-a)}$ | junction to ambient (DC) | 55 | ℃/W |

## ORDERING INFORMATION




## MARKING

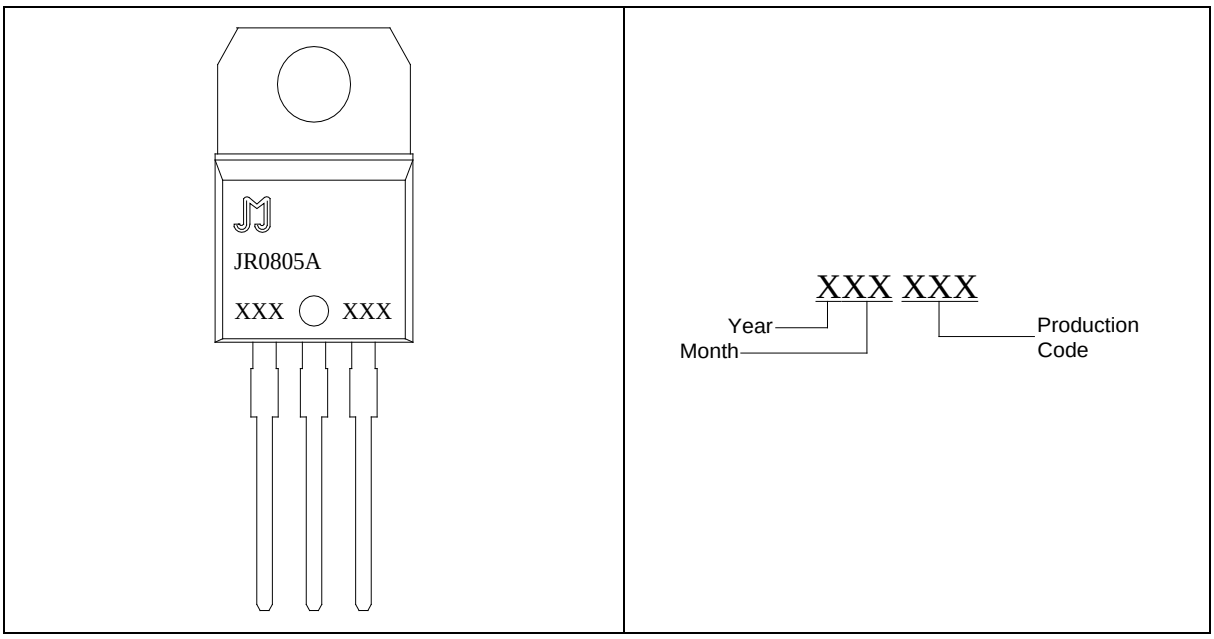


**FIG.1** Maximum power dissipation versus RMS on-state current

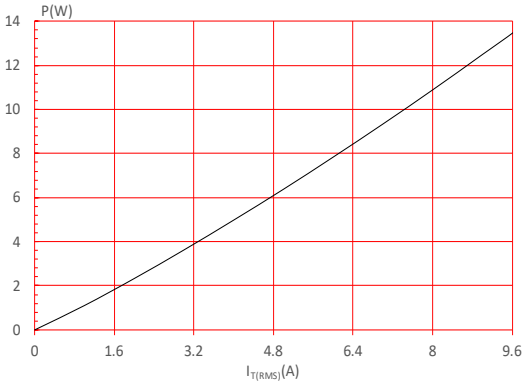



**FIG.2:** RMS on-state current versus case temperature

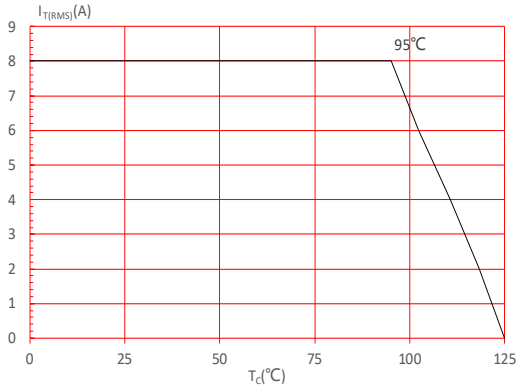



**FIG.3:** Surge peak on-state current versus number of cycles

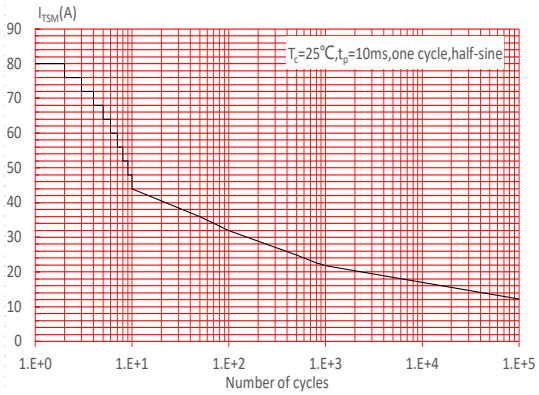



**FIG.4:** On-state characteristics

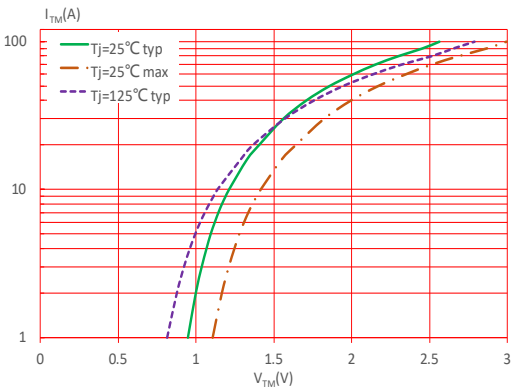



**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p$<10ms, and corresponding value of $I^2t$ (dI/dt<50A/μs)

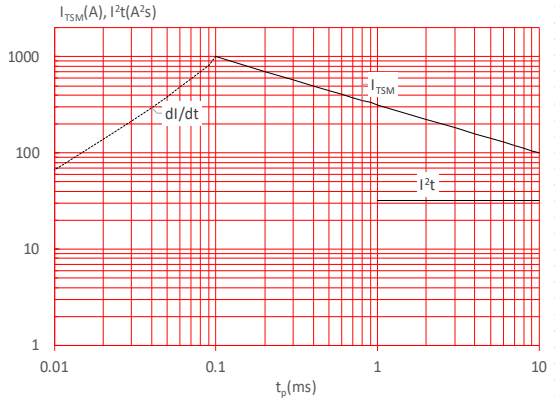



**FIG.6:** Relative variations of gate trigger current, holding current and latching current versus junction temperature

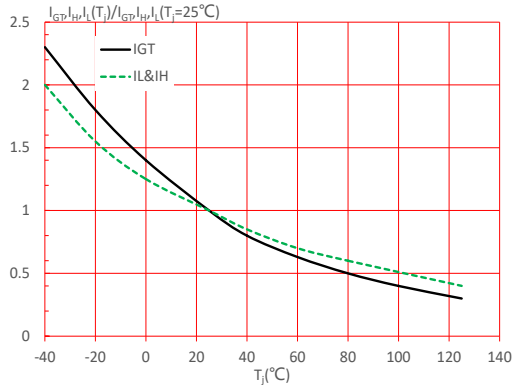
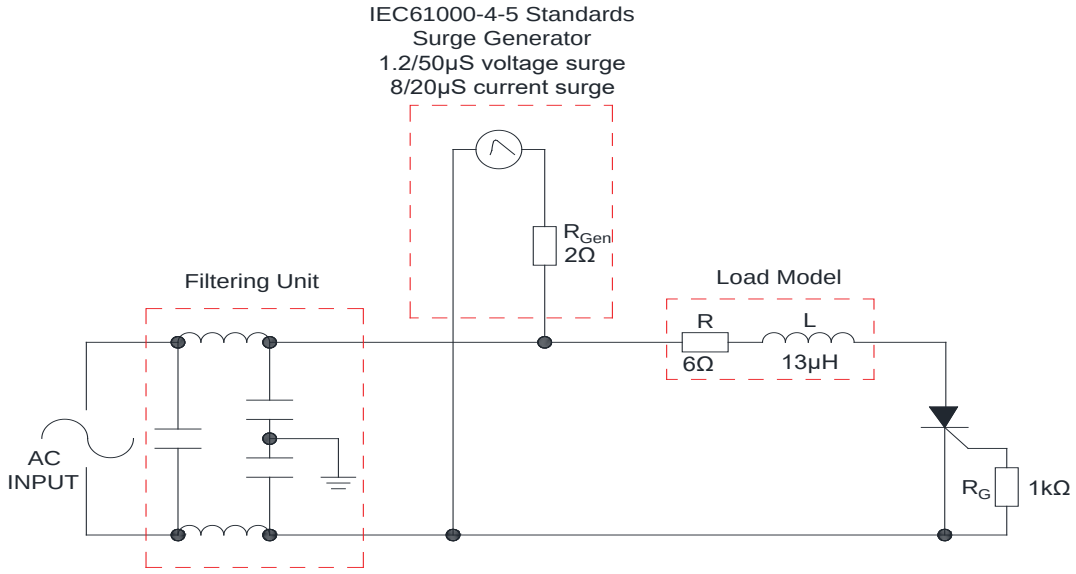


FIG.7：Test circuit for inductive and resistive loads to IEC-61000-4-5 standards




## SHAPING AND SOLDERING PARAMETERS

Refer to《Instructions for installation of plastic-sealed in-line power devices》released by JieJie

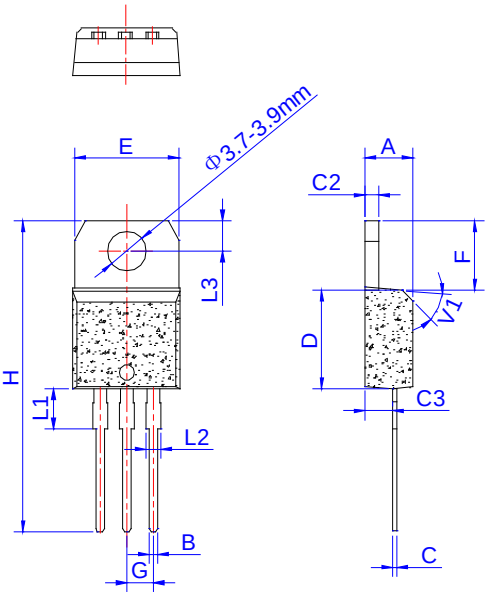
## ORDERING INFORMATION

| Order code | Voltage $V_{DRM}/V_{RRM}$ (V) | IGT(μA) | Package | Base qty. (pcs) | Delivery mode |
|---|---|---|---|---|---|
| JR0805A | 600 | ≤200 | TO-220A | 50 | Tube |

## Document Revision History

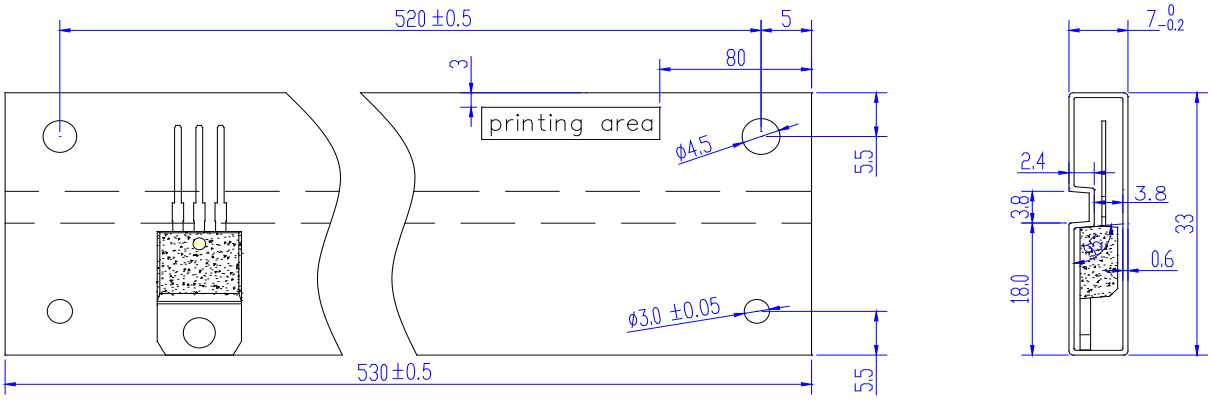
| Date | Revision | Changes |
|---|---|---|
| Apr.10, 2023 | A.1.0 | Last update |

## PACKAGE MECHANICAL DATA




| Ref. | Dimensions | | | | | |
|---|---|---|---|---|---|---|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | 4.40 | | 4.60 | 0.173 | | 0.181 |
| B | 0.61 | | 0.88 | 0.024 | | 0.035 |
| C | 0.46 | | 0.70 | 0.018 | | 0.028 |
| C2 | 1.21 | | 1.32 | 0.048 | | 0.052 |
| C3 | 2.40 | | 2.72 | 0.094 | | 0.107 |
| D | 8.60 | | 9.70 | 0.339 | | 0.382 |
| E | 9.80 | | 10.4 | 0.386 | | 0.409 |
| F | 6.25 | | 6.85 | 0.246 | | 0.270 |
| G | 2.40 | | 2.70 | 0.094 | | 0.106 |
| H | 28.0 | | 29.8 | 1.102 | | 1.173 |
| L1 | 3.45 | | 4.05 | 0.136 | | 0.159 |
| L2 | 1.14 | | 1.70 | 0.045 | | 0.067 |
| L3 | 2.65 | | 2.95 | 0.104 | | 0.116 |
| V1 | | 45° | | | 45° | |

## DELIVERY MODE




| PACKAGE | OUTLINE | TUBE (PCS) | INNER BOX (PCS) | PER CARTON |
|---|---|---|---|---|
| TO-220A | TUBE | 50 | 1,000 | 5,000 |

Information furnished in this document is believed to be accurate and reliable. However, Jiangsu JieJie Microelectronics Co., Ltd. assumes no responsibility for the consequences of use without consideration for such information nor use beyond it. Information mentioned in this document is subject to change without notice, apart from that when an agreement is signed, Jiangsu JieJie complies with the agreement. Products and information provided in this document have no infringement of patents. Jiangsu JieJie assumes no responsibility for any infringement of other rights of third parties which may result from the use of such products and information. This document supersedes and replaces all information previously supplied.

is a registered trademark of Jiangsu JieJie Microelectronics Co., Ltd.