

## 2SK2315

### Silicon N Channel MOS FET

REJ03G1006-0200  
(Previous: ADE-208-1354)  
Rev.2.00  
Sep.07,2005

#### Application

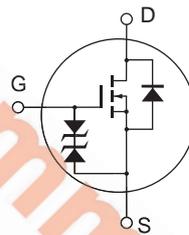
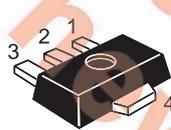
High speed power switching

#### Features

- Low on-resistance
- High speed switching
- Low drive current
- 2.5 V gate drive device can be driven from 3 V source.
- Suitable for DC-DC converter, motor drive, power switch, solenoid drive

#### Outline

RENESAS Package code: PLZZ0004CA-A  
(Package name: UPAK<sup>®</sup>)



1. Gate
2. Drain
3. Source
4. Drain

Note: Marking is "TY"

\*UPAK is a trademark of Renesas Technology Corp.

## Absolute Maximum Ratings

(Ta = 25°C)

| Item                                      | Symbol              | Ratings     | Unit |
|---|---------------------|-------------|------|
| Drain to source voltage                   | $V_{DSS}$           | 60          | V    |
| Gate to source voltage                    | $V_{GSS}$           | $\pm 20$    | V    |
| Drain current                             | $I_D$               | 2           | A    |
| Drain peak current                        | $I_{D(pulse)}^{*1}$ | 4           | A    |
| Body to drain diode reverse drain current | $I_{DR}$            | 2           | A    |
| Channel dissipation                       | $P_{ch}^{*2}$       | 1           | W    |
| Channel temperature                       | $T_{ch}$            | 150         | °C   |
| Storage temperature                       | $T_{stg}$           | -55 to +150 | °C   |

- Notes: 1.  $PW \leq 10 \mu s$ , duty cycle  $\leq 1\%$   
 2. When using the alumina ceramic board (12.5 × 20 × 0.7mm)

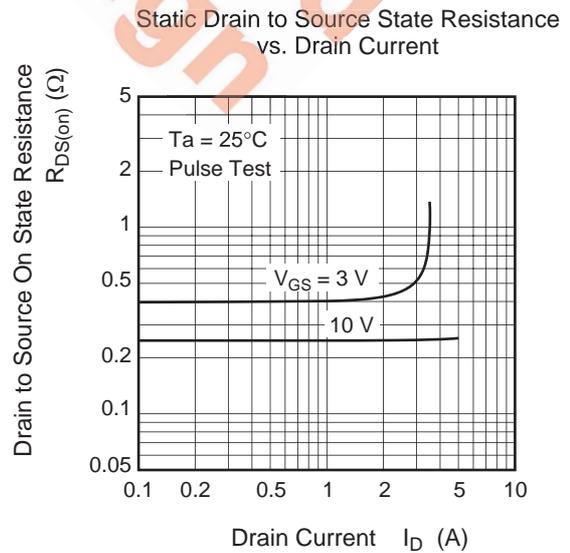
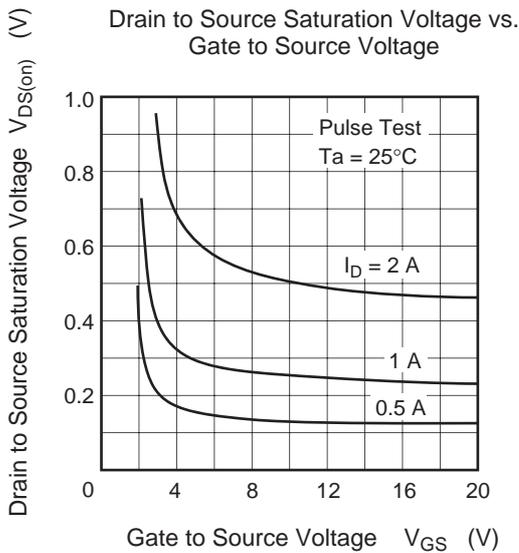
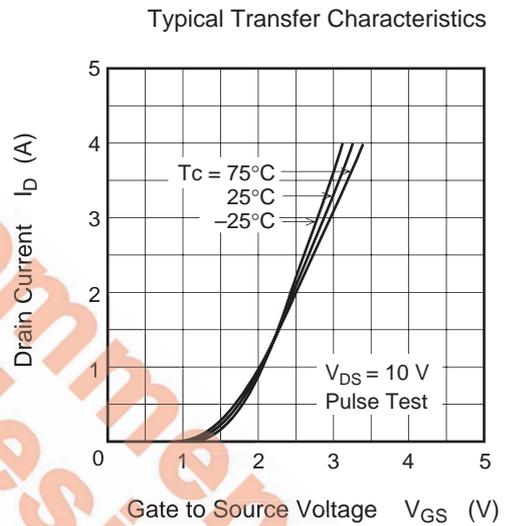
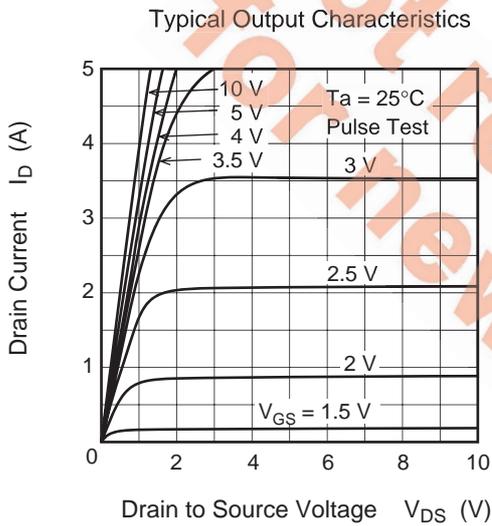
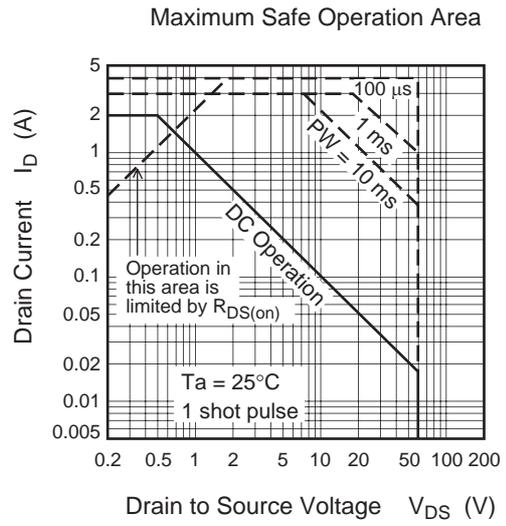
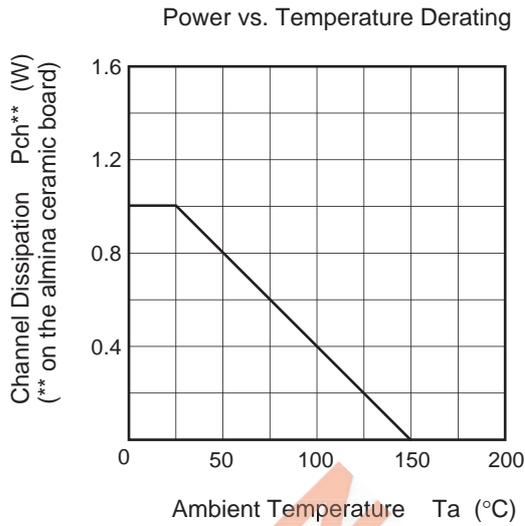
## Electrical Characteristics

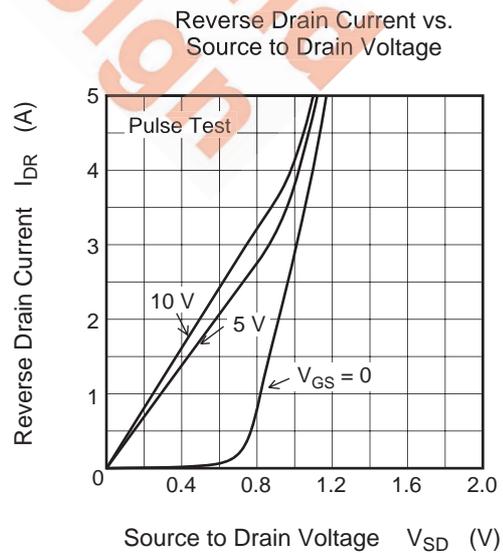
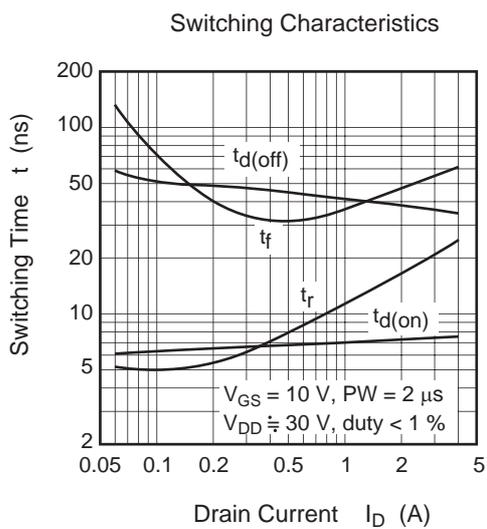
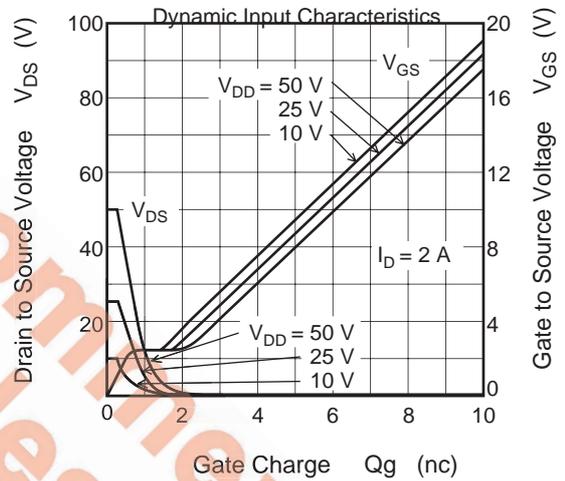
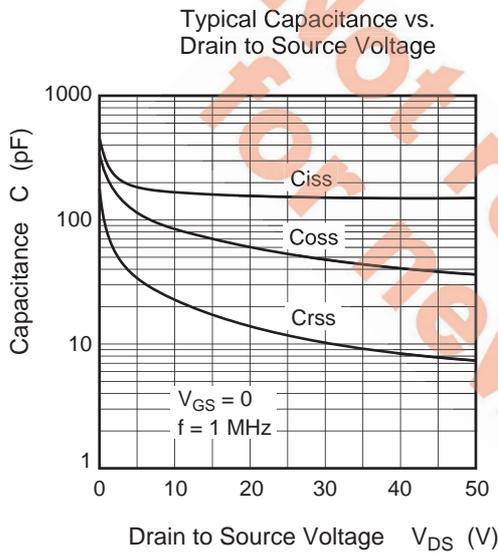
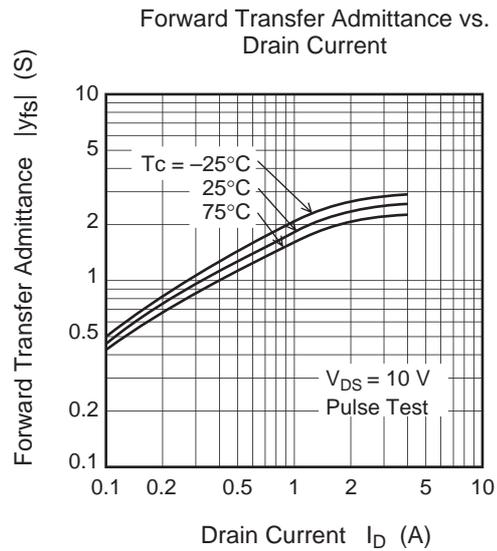
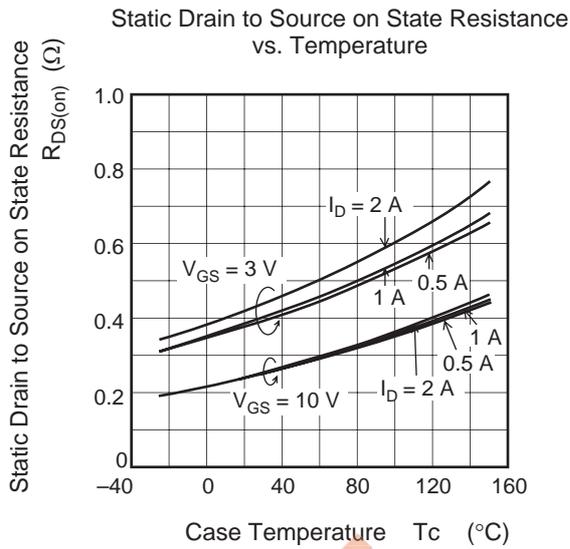
(Ta = 25°C)

| Item                                       | Symbol        | Min      | Typ  | Max     | Unit     | Test Conditions   |
|--|---------------|----------|------|---------|----------|---|
| Drain to source breakdown voltage          | $V_{(BR)DSS}$ | 60       | —    | —       | V        | $I_D = 10 \text{ mA}$ , $V_{GS} = 0$                            |
| Gate to source breakdown voltage           | $V_{(BR)GSS}$ | $\pm 20$ | —    | —       | V        | $I_G = \pm 100 \mu A$ , $V_{DS} = 0$                            |
| Gate to source leak current                | $I_{GSS}$     | —        | —    | $\pm 5$ | $\mu A$  | $V_{GS} = \pm 16 \text{ V}$ , $V_{DS} = 0$                      |
| Zero gate voltage drain current            | $I_{DSS}$     | —        | —    | 5       | $\mu A$  | $V_{DS} = 50 \text{ V}$ , $V_{GS} = 0$                          |
| Gate to source cutoff voltage              | $V_{GS(off)}$ | 0.5      | —    | 1.5     | V        | $I_D = 1 \text{ mA}$ , $V_{DS} = 10 \text{ V}$                  |
| Static drain to source on state resistance | $R_{DS(on)}$  | —        | 0.4  | 0.6     | $\Omega$ | $I_D = 0.3 \text{ A}$ , $V_{GS} = 3 \text{ V}^{*3}$             |
|  |               | —        | 0.35 | 0.45    | $\Omega$ | $I_D = 1 \text{ A}$ , $V_{GS} = 4 \text{ V}^{*3}$               |
| Forward transfer admittance                | $ y_{fs} $    | 1.5      | 1.8  | —       | S        | $I_D = 1 \text{ A}$ , $V_{DS} = 10 \text{ V}^{*3}$              |
| Input capacitance                          | $C_{iss}$     | —        | 173  | —       | pF       | $V_{DS} = 10 \text{ V}$ , $V_{GS} = 0$ ,<br>$f = 1 \text{ MHz}$ |
| Output capacitance                         | $C_{oss}$     | —        | 85   | —       | pF       |   |
| Reverse transfer capacitance               | $C_{rss}$     | —        | 23   | —       | pF       |   |
| Turn-on time                               | $t_{on}$      | —        | 21   | —       | ns       | $I_D = 1 \text{ A}$ , $R_L = 30 \Omega$ ,                       |
| Turn-off time                              | $t_{off}$     | —        | 85   | —       | ns       | $V_{GS} = 10 \text{ V}$   |

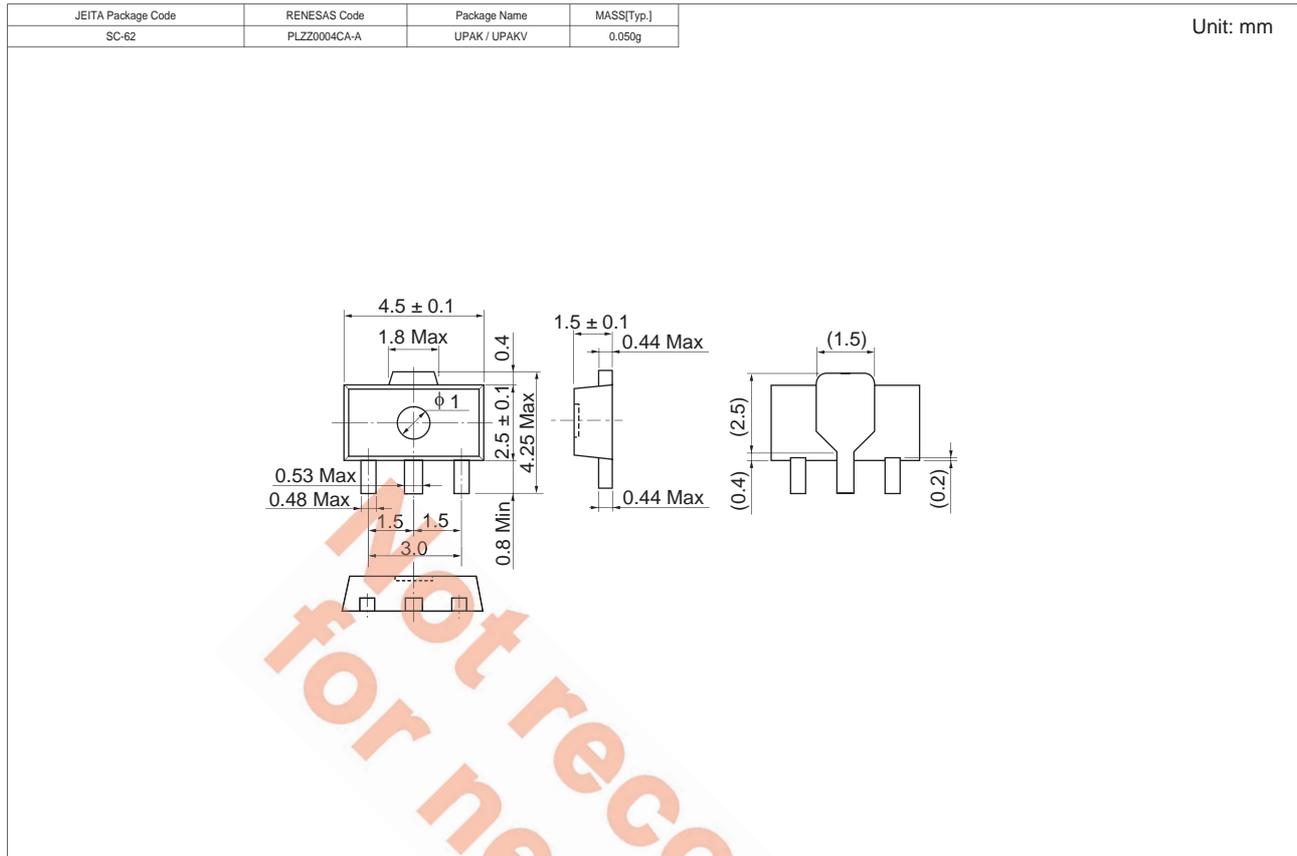
Note: 3. Pulse Test

Main Characteristics





## Package Dimensions



## Ordering Information

| Part Name     | Quantity | Shipping Container |
|---------------|----------|--------------------|
| 2SK2315TYTL-E | 1000 pcs | Taping             |
| 2SK2315TYTR-E | 1000 pcs | Taping             |

Note: For some grades, production may be terminated. Please contact the Renesas sales office to check the state of production before ordering the product.

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