

# 2SK0615 (2SK615)

## Silicon N-Channel MOS FET

For switching

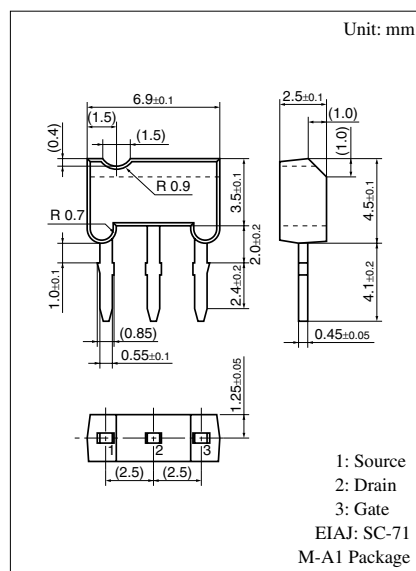
### ■ Features

- Low ON-resistance
- High-speed switching
- Allowing to be driven directly by CMOS and TTL
- M type package, allowing easy automatic and manual insertion as well as stand-alone fixing to the printed circuit board.

### ■ Absolute Maximum Ratings (Ta = 25°C)

| Parameter                   | Symbol    | Ratings     | Unit |
|-----------------------------|-----------|-------------|------|
| Drain to Source voltage     | $V_{DS}$  | 80          | V    |
| Gate to Source voltage      | $V_{GSO}$ | 20          | V    |
| Drain current               | $I_D$     | $\pm 0.5$   | A    |
| Max drain current           | $I_{DP}$  | $\pm 1$     | A    |
| Allowable power dissipation | $P_D^*$   | 1           | W    |
| Channel temperature         | $T_{ch}$  | 150         | °C   |
| Storage temperature         | $T_{stg}$ | -55 to +150 | °C   |

\* PC board: Copper foil of the drain portion should have an area of 1cm<sup>2</sup> or more and the board thickness should be 1.7mm.

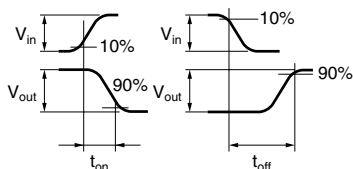
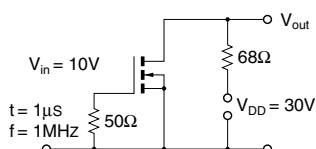


### ■ Electrical Characteristics (Ta = 25°C)

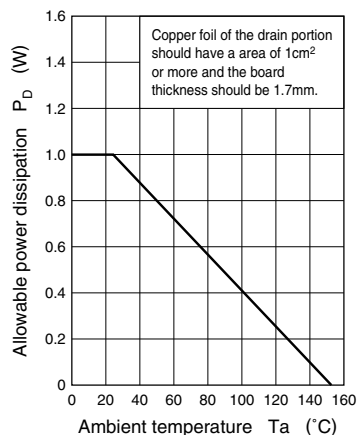
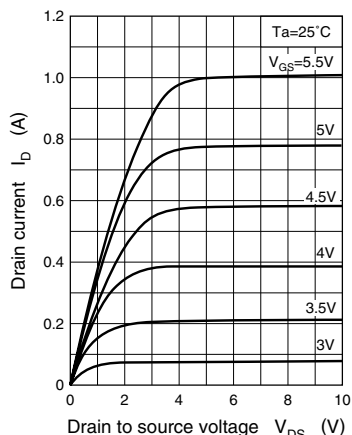
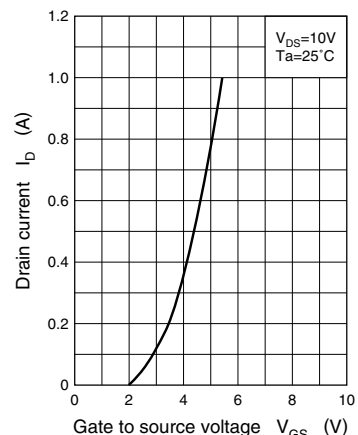
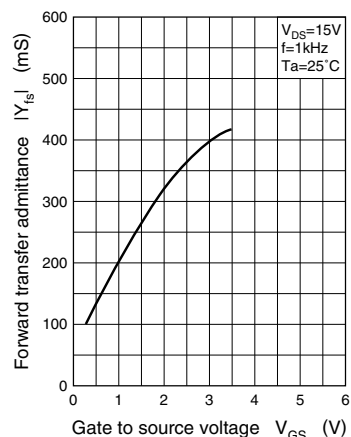
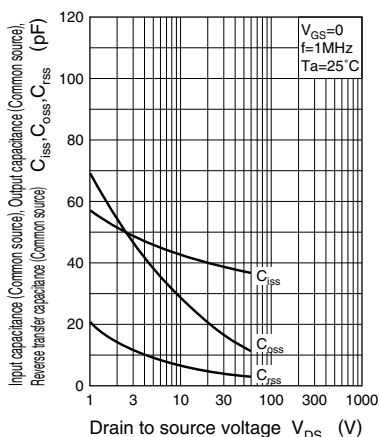
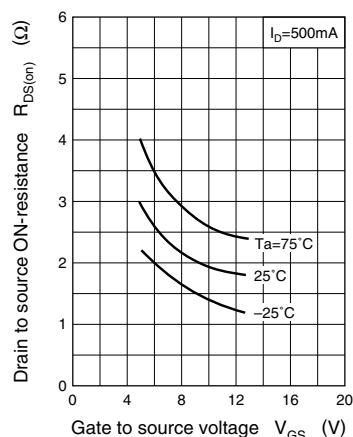
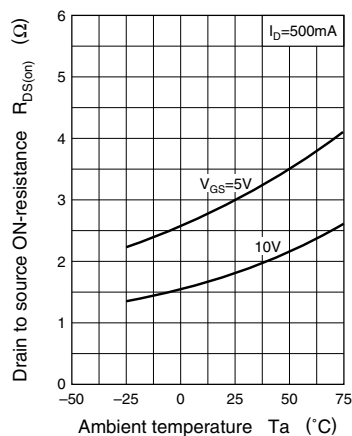
| Parameter                                    | Symbol            | Conditions                           | min | typ | max | Unit     |
|--|-------------------|--------------------------------------|-----|-----|-----|----------|
| Drain to Source cut-off current              | $I_{DSS}$         | $V_{DS} = 60V, V_{GS} = 0$           |     |     | 10  | $\mu A$  |
| Gate to Source leakage current               | $I_{GSS}$         | $V_{GS} = 20V, V_{DS} = 0$           |     |     | 0.1 | $\mu A$  |
| Drain to Source breakdown voltage            | $V_{DSS}$         | $I_{DS} = 100\mu A, V_{GS} = 0$      | 80  |     |     | V        |
| Gate threshold voltage                       | $V_{th}$          | $I_D = 1mA, V_{DS} = V_{GS}$         | 1.5 |     | 3.5 | V        |
| Drain to Source ON-resistance                | $R_{DS(on)}^{*1}$ | $I_D = 0.5A, V_{GS} = 10V$           |     | 2   | 4   | $\Omega$ |
| Forward transfer admittance                  | $ Y_{fs} $        | $I_D = 0.2A, V_{DS} = 15V, f = 1kHz$ |     | 300 |     | mS       |
| Input capacitance (Common Source)            | $C_{iss}$         | $V_{DS} = 10V, V_{GS} = 0, f = 1MHz$ |     | 45  |     | pF       |
| Output capacitance (Common Source)           | $C_{oss}$         |                                      |     | 30  |     | pF       |
| Reverse transfer capacitance (Common Source) | $C_{rss}$         |                                      |     | 8   |     | pF       |
| Turn-on time                                 | $t_{on}^{*1, 2}$  |                                      |     | 15  |     | ns       |
| Turn-off time                                | $t_{off}^{*1, 2}$ |                                      |     | 20  |     | ns       |

\*1 Pulse measurement

\*2  $t_{on}, t_{off}$  measurement circuit



Note) The part number in the parenthesis shows conventional part number.

$P_D - T_a$  $I_D - V_{DS}$  $I_D - V_{GS}$  $|Y_{fs}| - V_{GS}$  $C_{iss}, C_{oss}, C_{rss} - V_{DS}$  $R_{DS(on)} - V_{GS}$  $R_{DS(on)} - T_a$ 

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