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# 2SK664

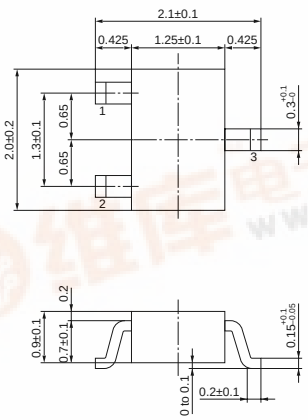
## Silicon N-Channel MOS FET

For switching

### ■ Features

- High-speed switching
- S-mini type package, allowing downsizing of the sets and automatic insertion through the tape/magazine packing.

unit: mm

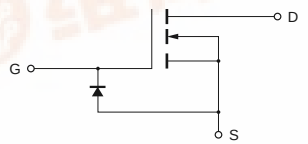



1: Gate
2: Source
3: Drain

EIAJ: SC-70
S-Mini Type Package (3-pin)

Marking Symbol: 3N

Internal Connection



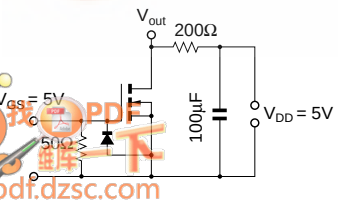

### ■ Absolute Maximum Ratings (Ta = 25°C)

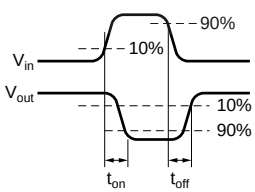
| Parameter | Symbol | Ratings | Unit |
|---|---|---|---|
| Drain to Source breakdown voltage | $V_{DSS}$ | 50 | V |
| Gate to Source voltage | $V_{GSO}$ | 8 | V |
| Drain current | $I_D$ | 100 | mA |
| Max drain current | $I_{DP}$ | 200 | mA |
| Allowable power dissipation | $P_D$ | 150 | mW |
| Channel temperature | $T_{ch}$ | 150 | °C |
| Storage temperature | $T_{stg}$ | −55 to +150 | °C |

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

| Parameter | Symbol | Conditions | min | typ | max | Unit |
|---|---|---|---|---|---|---|
| Drain to Source cut-off current | $I_{DSS}$ | $V_{DS}$ = 10V, $V_{GS}$ = 0 | | | 10 | µA |
| Gate to Source leakage current | $I_{GSS}$ | $V_{GS}$ = 8V, $V_{DS}$ = 0 | | | 50 | µA |
| Drain to Source breakdown voltage | $V_{DSS}$ | $I_D$ = 100µA, $V_{GS}$ = 0 | 50 | | | V |
| Gate threshold voltage | $V_{th}$ | $I_D$ = 100µA, $V_{DS}$ = $V_{GS}$ | 1.5 | | 3.5 | V |
| Drain to Source ON-resistance | $R_{DS(on)}$ | $I_D$ = 20mA, $V_{GS}$ = 5V | | | 50 | Ω |
| Forward transfer admittance | $\|Y_{fs}\|$ | $I_D$ = 20mA, $V_{DS}$ = 5V, f = 1kHz | 20 | | | mS |
| Input capacitance (Common Source) | $C_{iss}$ | $V_{DS}$ = 5V, $V_{GS}$ = 0, f = 1kHz | | | 15 | pF |
| Output capacitance (Common Source) | $C_{oss}$ | | | | 5 | pF |
| Reverse transfer capacitance (Common Source) | $C_{rss}$ | | | | 1 | pF |
| Turn-on time | $t_{on}$* | $V_{DD}$ = 5V, $V_{GS}$ = 0 to 5V, $R_L$ = 200Ω | | 10 | | ns |
| Turn-off time | $t_{off}$* | $V_{DD}$ = 5V, $V_{GS}$ = 5 to 0V, $R_L$ = 200Ω | | 20 | | ns |

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

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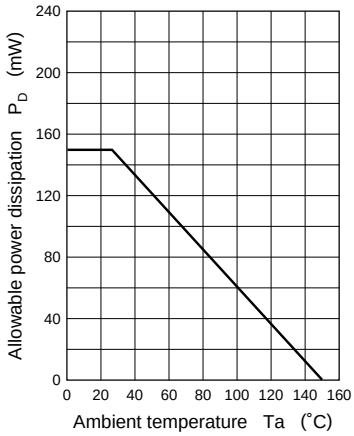
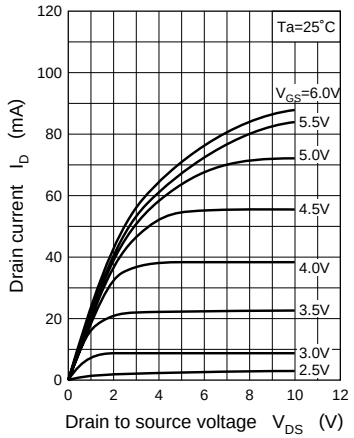
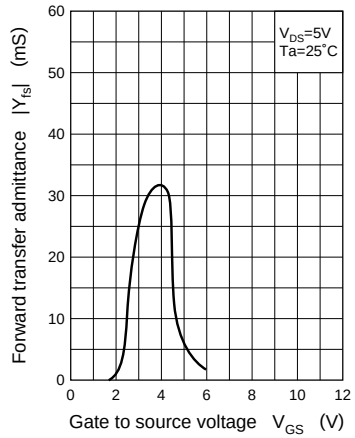
$P_D$ — Ta



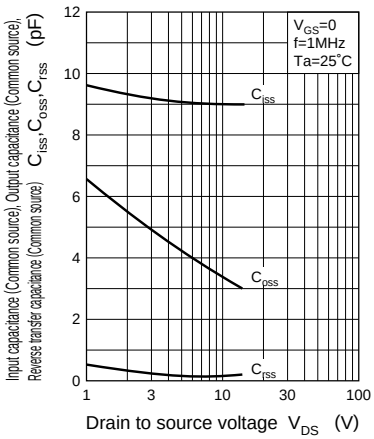

$I_D$ — $V_{DS}$



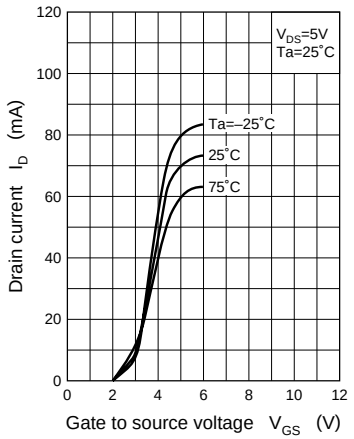

$|Y_{fs}|$ — $V_{GS}$



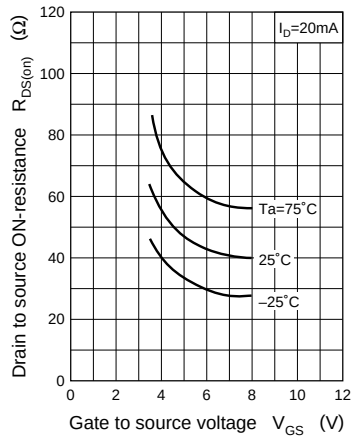

$C_{iss}$, $C_{oss}$, $C_{rss}$ — $V_{DS}$

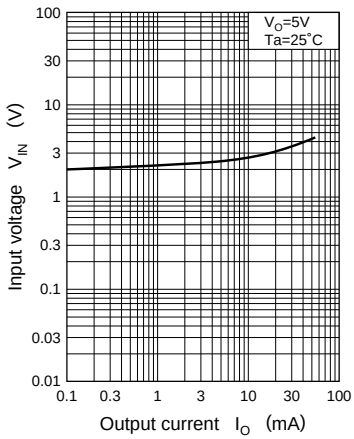



$I_D$ — $V_{GS}$




$R_{DS(on)}$ — $V_{GS}$




$V_{IN}$ — $I_O$