

# 2SK0664 (2SK664)

## Silicon N-channel MOSFET

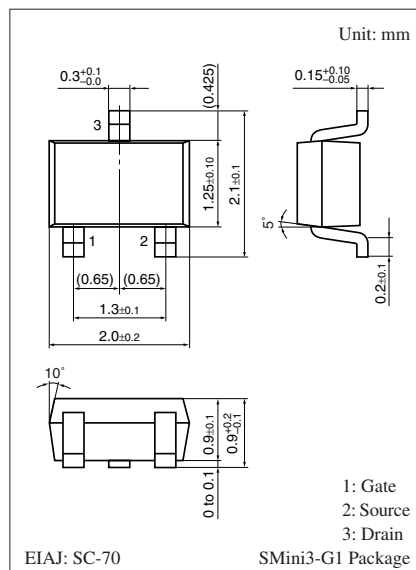
For switching circuits

### ■ Features

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

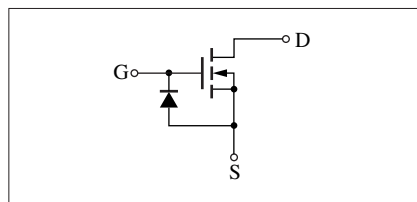
### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Drain-source surrender voltage	$V_{DSS}$	50	V
Gate-source voltage (Drain open)	$V_{GSO}$	8	V
Drain current	$I_D$	100	mA
Peak drain current	$I_{DP}$	200	mA
Power dissipation	$P_D$	150	mW
Channel temperature	$T_{ch}$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$



Marking Symbol: 3N

Internal Connection



### ■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	$V_{DSS}$	$I_D = 100 \mu\text{A}$ , $V_{GS} = 0$	50			V
Drain-source cutoff current	$I_{DSS}$	$V_{DS} = 10 \text{ V}$ , $V_{GS} = 0$			10	$\mu\text{A}$
Gate-source cutoff current	$I_{GSS}$	$V_{GS} = 8 \text{ V}$ , $V_{DS} = 0$			50	nA
Gate threshold voltage	$V_{th}$	$I_D = 100 \mu\text{A}$ , $V_{DS} = V_{GS}$	1.5		3.5	V
Forward transfer admittance	$ Y_{fs} $	$I_D = 20 \text{ mA}$ , $V_{DS} = 5 \text{ V}$ , $f = 1 \text{ kHz}$	20			mS
Drain-source ON resistance	$R_{DS(on)}$	$I_D = 20 \text{ mA}$ , $V_{GS} = 5 \text{ V}$			50	$\Omega$
Short-circuit forward transfer capacitance (Common source)	$C_{iss}$	$V_{DS} = 5 \text{ V}$ , $V_{GS} = 0$ , $f = 1 \text{ MHz}$			15	pF
Short-circuit output capacitance (Common source)	$C_{oss}$				5.0	pF
Reverse transfer capacitance (Common source)	$C_{rss}$				1.0	pF
Turn-on time <sup>*1, 2</sup>	$t_{on}$	$V_{DD} = 5 \text{ V}$ , $V_{GS} = 0 \text{ V} \sim 5 \text{ V}$ , $R_L = 200 \Omega$		10		ns
Turn-off time <sup>*1, 2</sup>	$t_{off}$	$V_{DD} = 5 \text{ V}$ , $V_{GS} = 5 \text{ V} \sim 0 \text{ V}$ , $R_L = 200 \Omega$		20		ns

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. Observe precautions for handling. Electrostatic sensitive devices.

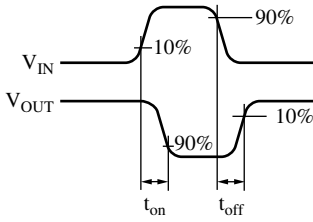
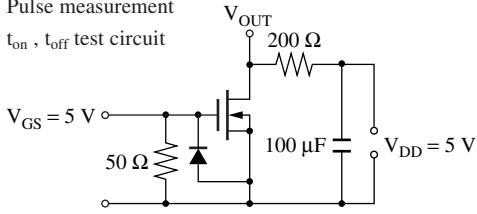
Note) The part number in the parenthesis shows conventional part number.

■ Electrical Characteristics (continue)

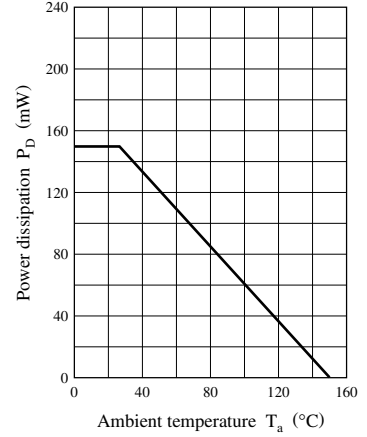
Note) (continue)

3. \*1: Pulse measurement

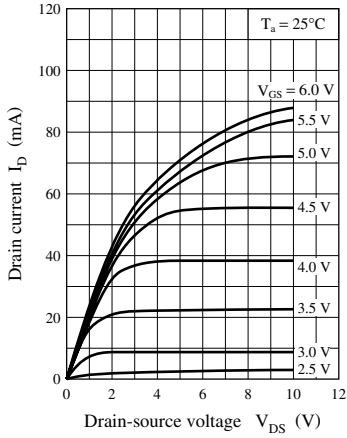
\*2:  $t_{on}$ ,  $t_{off}$  test circuit



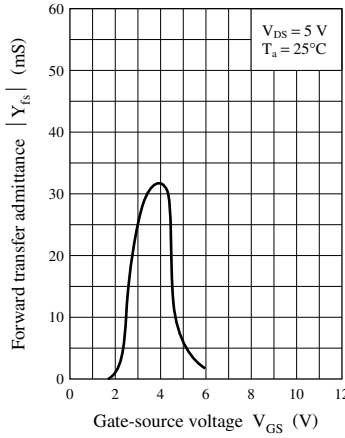
$P_D - T_a$



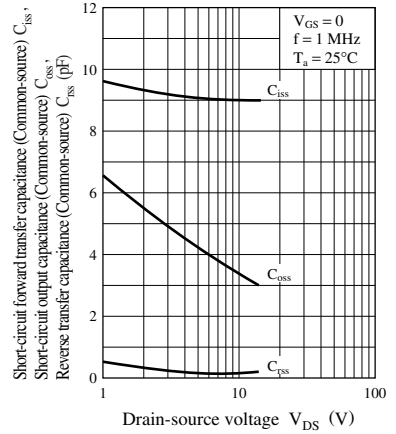
$I_D - V_{DS}$



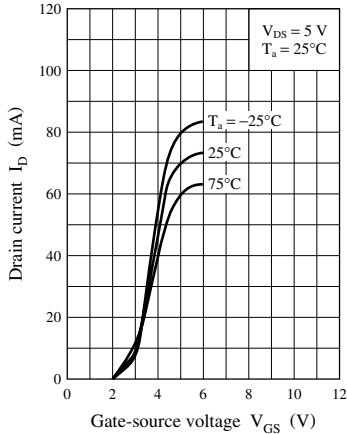
$|Y_{fs}| - V_{GS}$



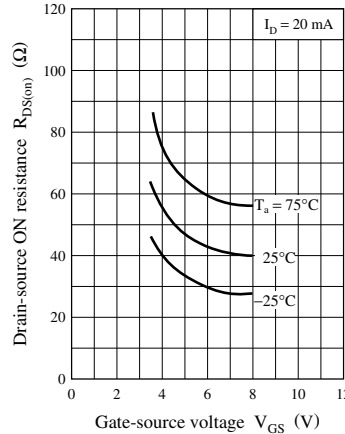
$C_{iss}, C_{oss}, C_{rss} - V_{DS}$



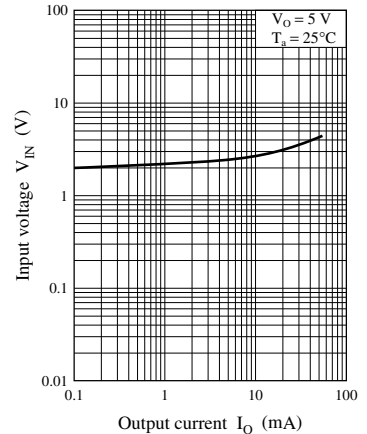
$I_D - V_{GS}$



$R_{DS(on)} - V_{GS}$



$V_{IN} - I_O$



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