2SK665

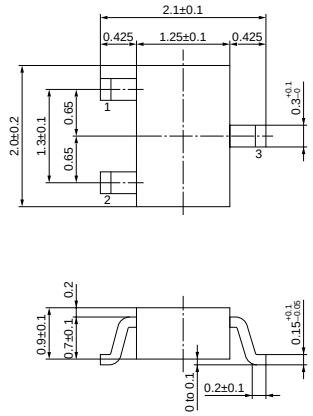
Silicon N-Channel MOS FET

For switching

■ Features

- High-speed switching
- Small drive current owing to high input inpedance
- High electrostatic breakdown voltage

unit: mm

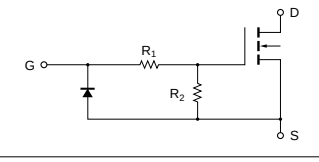


1: Gate
2: Source
3: Drain

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

Marking Symbol: 3O

Internal Connection



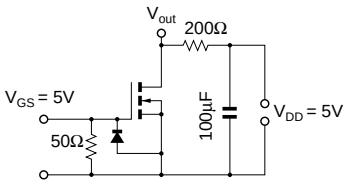
■ Absolute Maximum Ratings (Ta = 25°C)

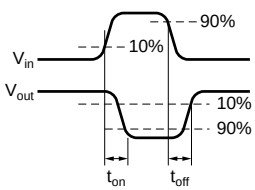
Parameter	Symbol	Ratings	Unit
Drain to Source voltage	V_{DS}	20	V
Gate to Source voltage	V_{GSO}	8	V
Drain current	I_D	100	mA
Max drain current	I_{DP}	200	mA
Allowable power dissipation	P_D	150	mW
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

■ Electrical Characteristics (Ta = 25°C)

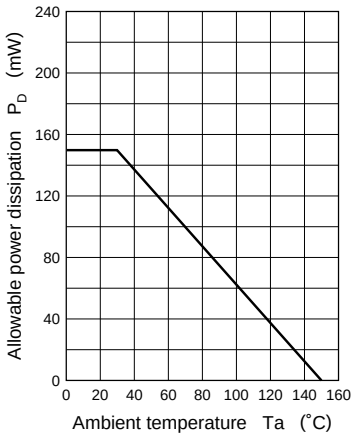
Parameter	Symbol	Conditions	min	typ	max	Unit
Drain to Source cut-off current	I_{DSS}	V_{DS} = 10V, V_{GS} = 0			10	µA
Gate to Source leakage current	I_{GSS}	V_{GS} = 8V, V_{DS} = 0	40		80	µA
Drain to Source breakdown voltage	V_{DSS}	I_D = 100µA, V_{GS} = 0	20			V
Gate threshold voltage	V_{th}	I_D = 100µA, V_{DS} = V_{GS}	1.5		3.5	V
Drain to Source ON-resistance	$R_{DS(on)}$ *3	I_D = 20mA, V_{GS} = 5V			50	Ω
Forward transfer admittance	$\|Y_{fs}\|$	I_D = 20mA, V_{DS} = 5V, f = 1kHz	20			mS
High level output voltage	V_{OH}	V_{DD} = 5V, V_{GS} = 1V, R_L = 200Ω	4.5			V
Low level output voltage	V_{SL}	V_{DD} = 5V, V_{GS} = 5V, R_L = 200Ω			1	V
Input resistance	$R_1 + R_2$ *1		100		200	kΩ
Turn-on time	t_{on} *2	V_{DD} = 5V, V_{GS} = 0 to 5V, R_L = 200Ω			1	µs
Turn-off time	t_{off} *2	V_{DD} = 5V, V_{GS} = 5 to 0V, R_L = 200Ω			1	µs

*1 Resistance ratio R_1/R_2 = 1/50 *2 t_{on}, t_{off} measurement circuit *3 Pulse measurement

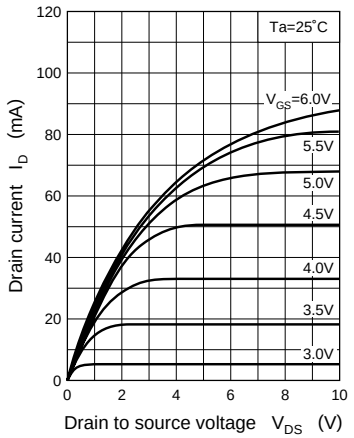




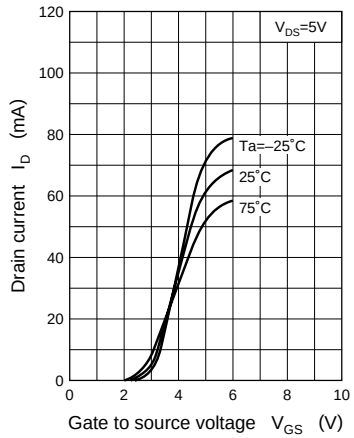
P_D — Ta



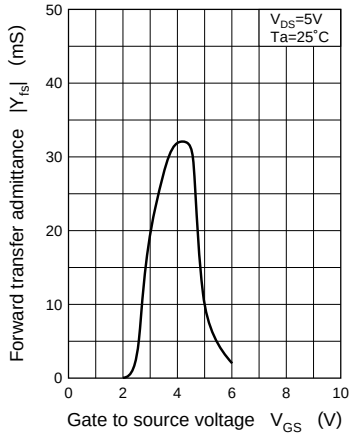
I_D — V_{DS}



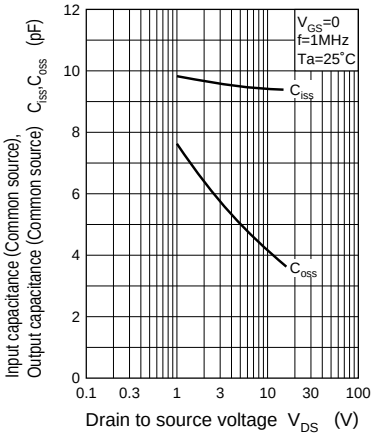
I_D — V_{GS}



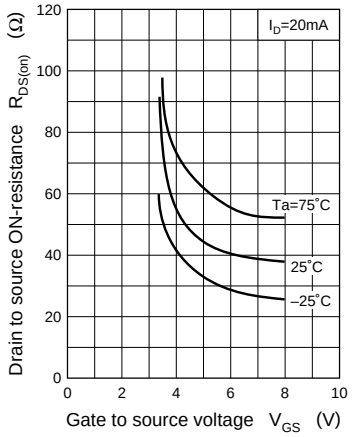
$|Y_{fs}|$ — V_{GS}



C_{iss}, C_{oss} — V_{DS}



$R_{DS(on)}$ — V_{GS}



V_{IN} — I_O