2SK657

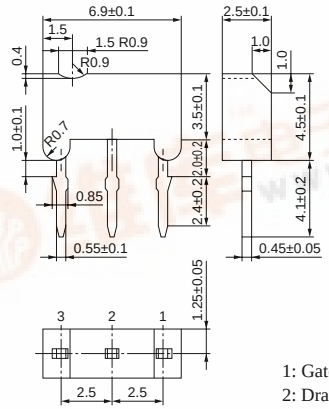
Silicon N-Channel MOS FET

For switching

■ Features

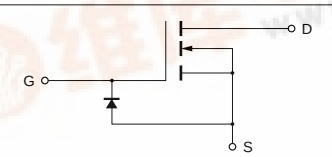
- High-speed switching
- M type package, allowing easy automatic and manual insertion as well as stand-alone fixing to the printed circuit board.

unit: mm



1: Gate
2: Drain
3: Source
EIAJ: SC-71
M Type Mold Package

Internal Connection



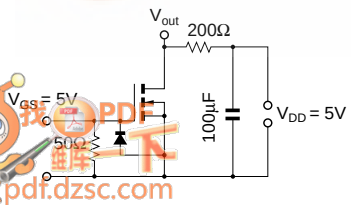
■ Absolute Maximum Ratings (Ta = 25°C)

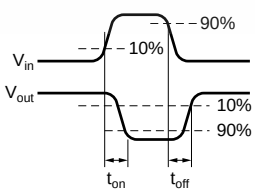
Parameter	Symbol	Ratings	Unit
Drain to Source breakdown voltage	V_{DSS}	50	V
Gate to Source voltage	V_{GSO}	8	V
Drain current	I_D	±100	mA
Max drain current	I_{DP}	±200	mA
Allowable power dissipation	P_D	400	mW
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

■ Electrical Characteristics (Ta = 25°C)

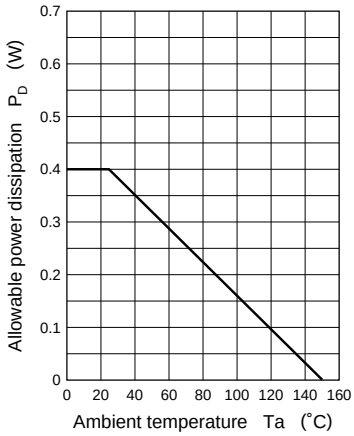
Parameter	Symbol	Conditions	min	typ	max	Unit
Drain to Source cut-off current	I_{DSS}	V_{DS} = 10V, V_{GS} = 0			10	µA
Gate to Source leakage current	I_{GSS}	V_{GS} = 8V, V_{DS} = 0			50	µA
Drain to Source breakdown voltage	V_{DSS}	I_D = 100µA, V_{GS} = 0	50			V
Gate threshold voltage	V_{th}	I_D = 100µA, 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 = 1MHz			15	pF
Output capacitance (Common Source)	C_{oss}				6	pF
Reverse transfer capacitance (Common Source)	C_{rss}				1.2	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

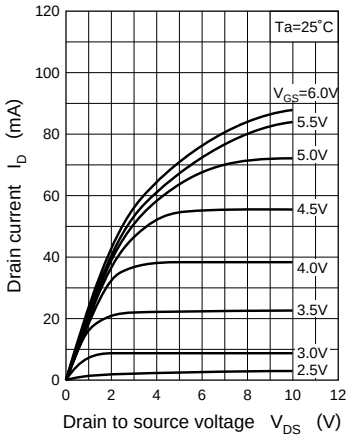




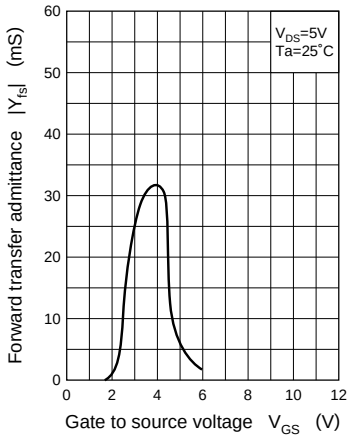
P_D — Ta



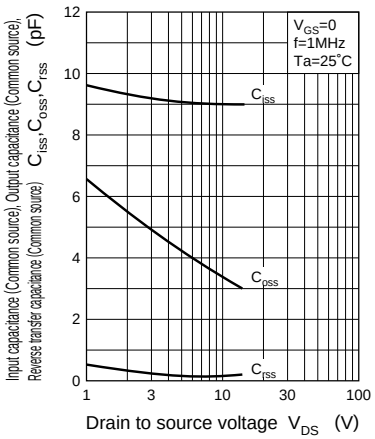
I_D — V_{DS}



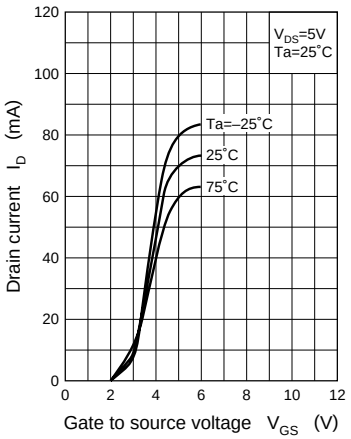
$|Y_{fs}|$ — V_{GS}



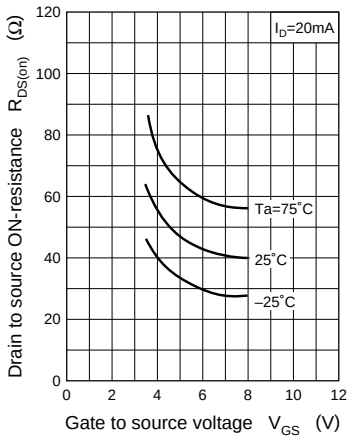
C_{iss}, C_{oss}, C_{rss} — V_{DS}



I_D — V_{GS}



$R_{DS(on)}$ — V_{GS}



V_{IN} — I_O