

2SK0657 (2SK657)

Silicon N-Channel MOS FET

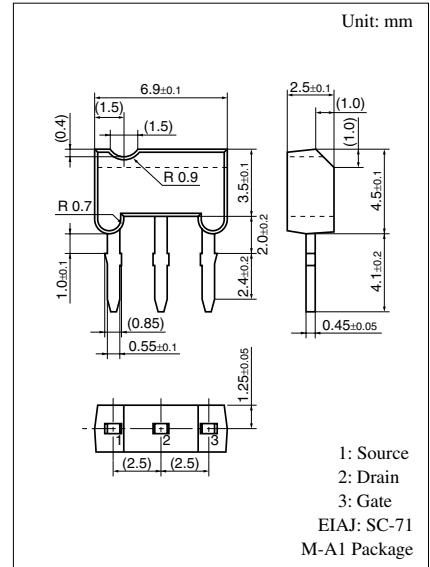
For switching

■ Features

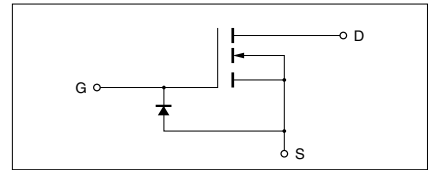
- High-speed switching
- M type package, allowing easy automatic and manual insertion as well as stand-alone fixing to the printed circuit board.

■ 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



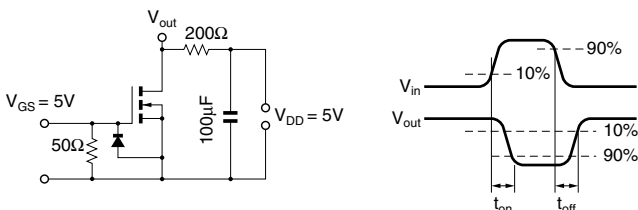
Internal Connection



■ Electrical Characteristics (Ta = 25°C)

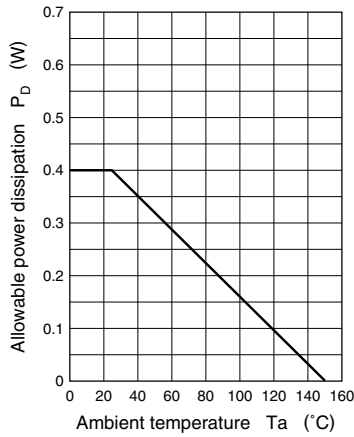
Parameter	Symbol	Conditions	min	typ	max	Unit
Drain to Source cut-off current	I_{DSS}	$V_{DS} = 10V, V_{GS} = 0$			10	μA
Gate to Source leakage current	I_{GSS}	$V_{GS} = 8V, V_{DS} = 0$			50	μA
Drain to Source breakdown voltage	V_{DSS}	$I_D = 100\mu A, V_{GS} = 0$	50			V
Gate threshold voltage	V_{th}	$I_D = 100\mu A, V_{DS} = V_{GS}$	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}^*	$V_{DD} = 5V, V_{GS} = 0 \text{ to } 5V, R_L = 200\Omega$		10		ns
Turn-off time	t_{off}^*	$V_{DD} = 5V, V_{GS} = 5 \text{ to } 0V, R_L = 200\Omega$		20		ns

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

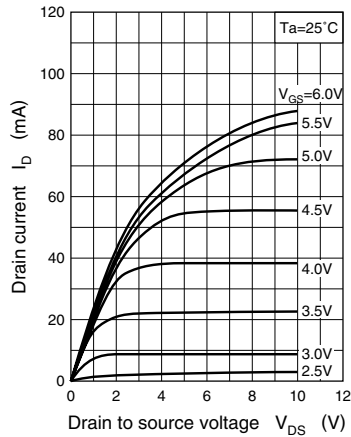


Note) The part number in the parenthesis shows conventional part number.

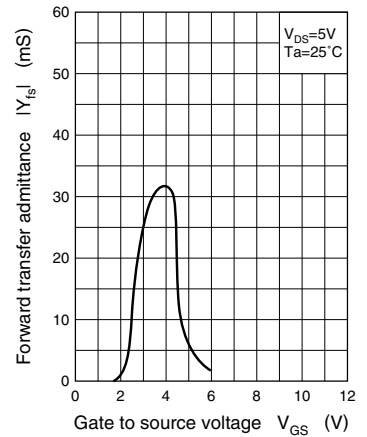
$P_D - T_a$



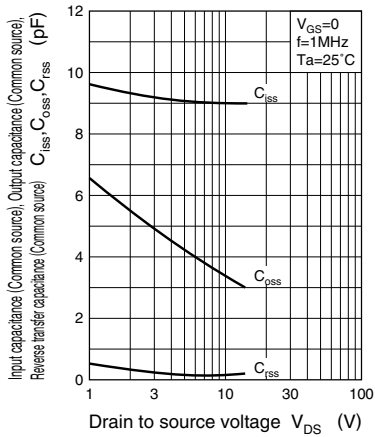
$I_D - V_{DS}$



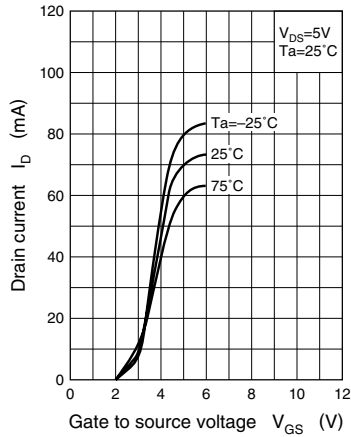
$|Y_{fs}| - V_{GS}$



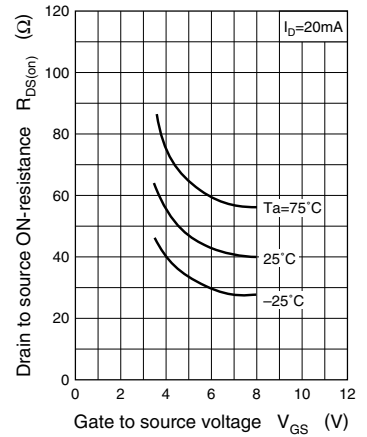
$C_{iss}, C_{oss}, C_{rss} - V_{DS}$



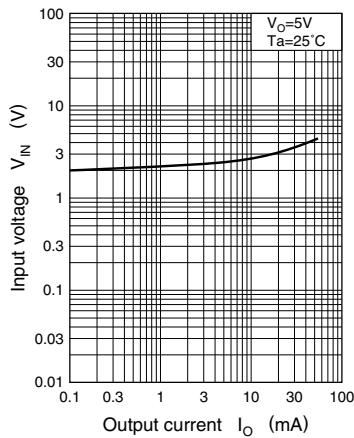
$I_D - V_{GS}$



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



$V_{IN} - I_O$



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