

2SK657

Silicon N-Channel MOS

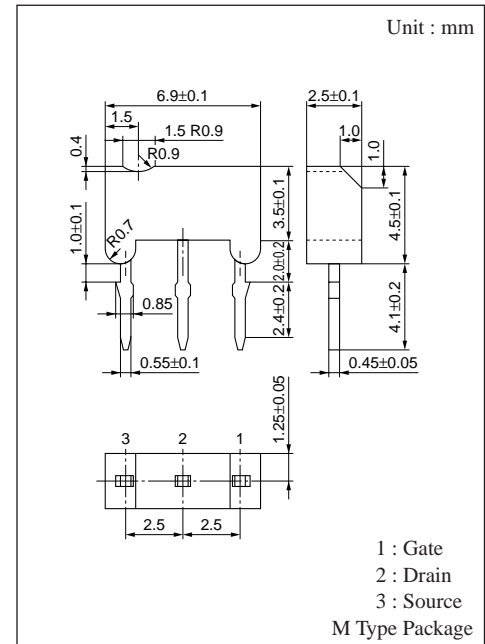
For switching

■ Features

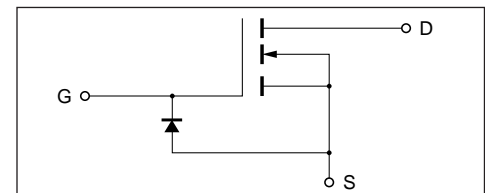
- High-speed switching
- Easy automatic- /manual-insertion due to M type package. Self-fixing to printed circuits board.

■ Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Rating	Unit
Drain-Source breakdown voltage	V_{DS}	50	V
Gate-Source voltage	V_{GS0}	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



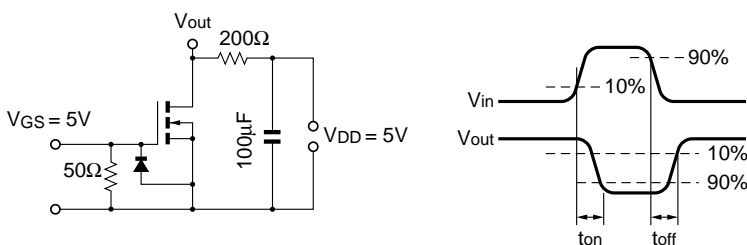
■ Internal Connection



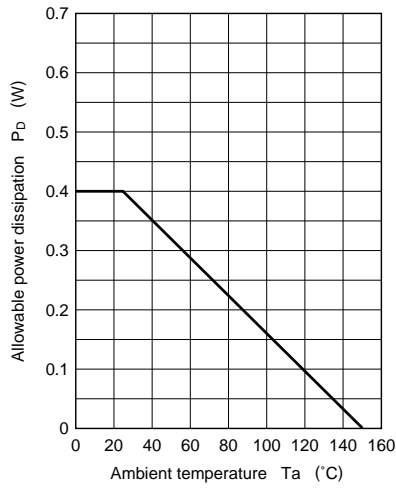
■ Electrical Characteristics (Ta = 25°C)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Drain-Source cut-off current	I_{DSS}	$V_{DS}=10V, V_{GS}=0$			10	μA
Gate-Source leakage current	I_{GSS}	$V_{GS}=8V, V_{DS}=0$			50	μA
Drain-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-Source ON-resistance	$R_{DS(on)}$	$I_D=20mA, V_{GS}=5V$			50	Ω
Forward transadmittance	$ Y_{fs} $	$I_D=20mA, V_{DS}=5V, f=1kHz$	20			mS
Input capacitance	C_{iss}	$V_{DS}=5V, V_{GS}=0, f=1MHz$			15	pF
Output capacitance	C_{oss}				6	pF
Feedback capacitance	C_{rss}				1.2	pF
Turn-on time	t_{on}^*	$V_{DD}=5V, V_{GS}=0$ to $5V, R_L=200\Omega$		10		ns
Turn-off time	t_{off}^*	$V_{DD}=5V, V_{GS}=5$ to $0V, R_L=200\Omega$		20		ns

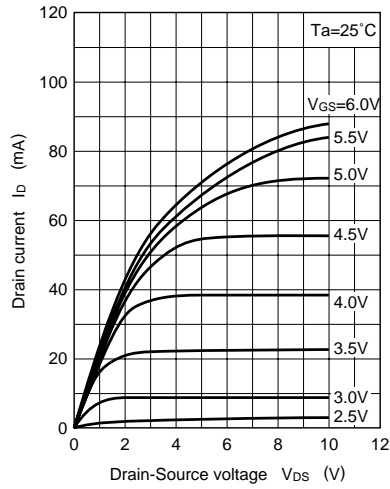
* t_{on}, t_{off} measurement circuit



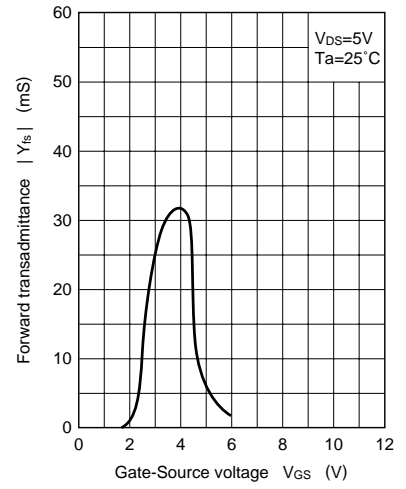
$P_D - T_a$



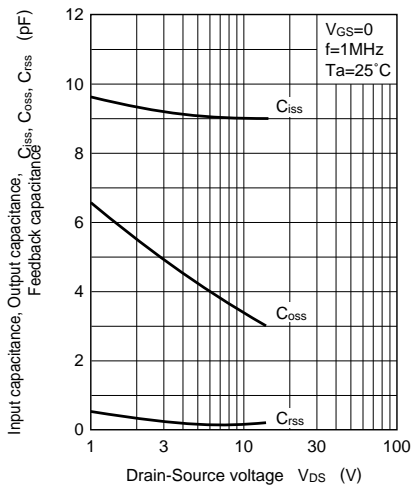
$I_D - V_{DS}$



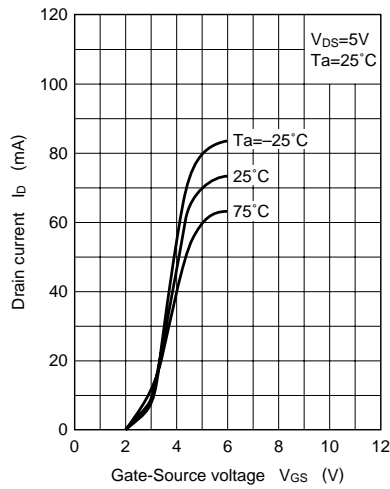
$|Y_{fs}| - V_{GS}$



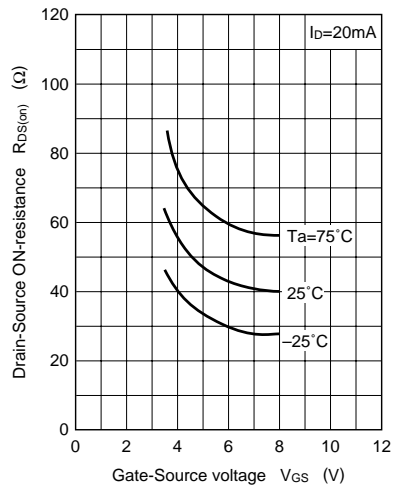
$C_{iss}, C_{oss}, C_{rss} - V_{DS}$



$I_D - V_{GS}$



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



$V_{IN} - I_O$

