

# 2SK614

## Silicon N-Channel MOS FET

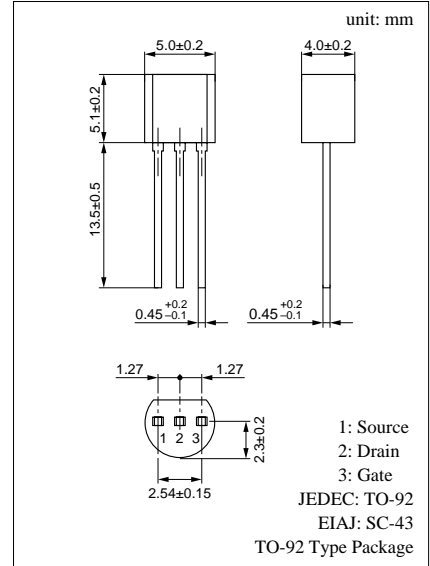
For switching

### ■ Features

- Low ON-resistance  $R_{DS(on)}$
- High-speed switching
- Allowing to be driven directly by CMOS and TTL

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

Parameter	Symbol	Ratings	Unit
Drain to Source voltage	$V_{DS}$	80	V
Gate to Source voltage	$V_{GSO}$	20	V
Drain current	$I_D$	$\pm 0.5$	A
Max drain current	$I_{DP}$	$\pm 1$	A
Allowable power dissipation	$P_D$	750	mW
Channel temperature	$T_{ch}$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

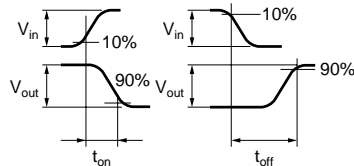
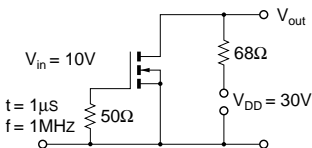


### ■ Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

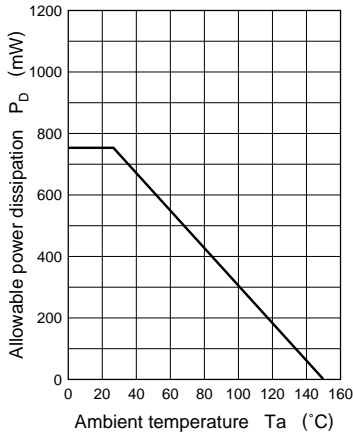
Parameter	Symbol	Conditions	min	typ	max	Unit
Drain to Source cut-off current	$I_{DSS}$	$V_{DS} = 60\text{V}, V_{GS} = 0$			10	$\mu\text{A}$
Gate to Source leakage current	$I_{GSS}$	$V_{GS} = 20\text{V}, V_{DS} = 0$			0.1	$\mu\text{A}$
Drain to Source breakdown voltage	$V_{DSS}$	$I_D = 100\mu\text{A}, V_{GS} = 0$	80			V
Gate threshold voltage	$V_{th}$	$I_D = 1\text{mA}, V_{DS} = V_{GS}$	1.5		3.5	V
Drain to Source ON-resistance	$R_{DS(on)}^{*1}$	$I_D = 0.5\text{A}, V_{GS} = 10\text{V}$		2	4	$\Omega$
Forward transfer admittance	$ Y_{fs} $	$I_D = 0.2\text{A}, V_{DS} = 15\text{V}, f = 1\text{kHz}$		300		mS
Input capacitance (Common Source)	$C_{iss}$	$V_{DS} = 10\text{V}, V_{GS} = 0, f = 1\text{MHz}$		45		pF
Output capacitance (Common Source)	$C_{oss}$			30		pF
Reverse transfer capacitance (Common Source)	$C_{rss}$			8		pF
Turn-on time	$t_{on}^{*2}$			15		ns
Turn-off time	$t_{off}^{*2}$			20		ns

\*1 Pulse measurement

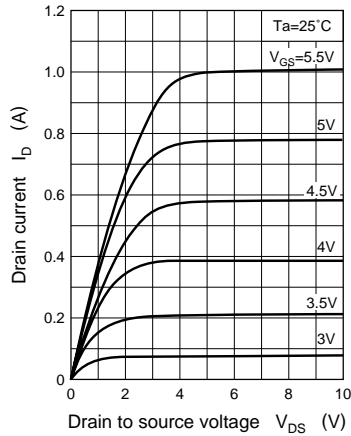
\*2  $t_{on}, t_{off}$  measurement circuit



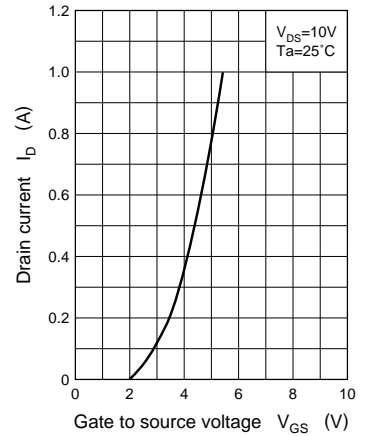
$P_D - T_a$



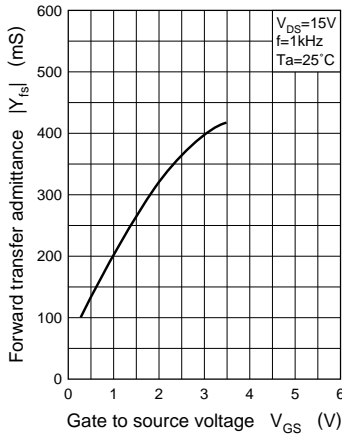
$I_D - V_{DS}$



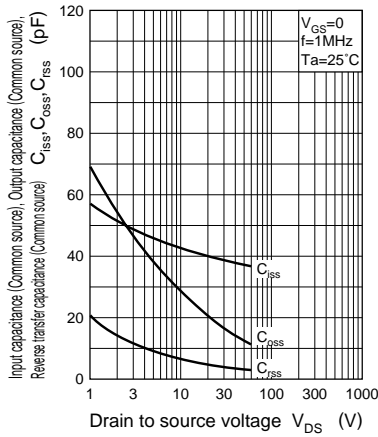
$I_D - V_{GS}$



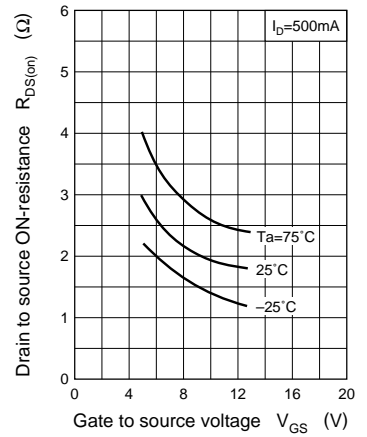
$|Y_{fs}| - V_{GS}$



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



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



$R_{DS(on)} - T_a$

