

# 2SK615

## Silicon N-Channel MOS FET

For switching

### ■ Features

- Low ON-resistance
- High-speed switching
- Allowing to be driven directly by CMOS and TTL
- 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 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	$P_D^*$	1	W
Channel temperature	$T_{ch}$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

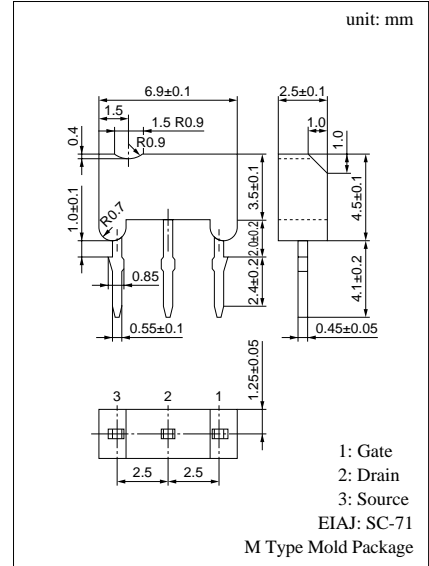
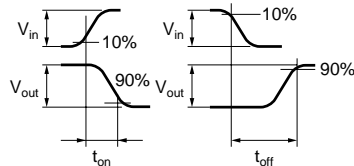
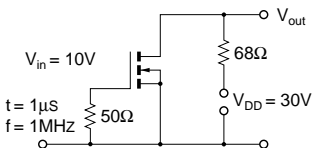
\* PC board: Copper foil of the drain portion should have an area of 1cm<sup>2</sup> or more and the board thickness should be 1.7mm.

### ■ Electrical Characteristics (Ta = 25°C)

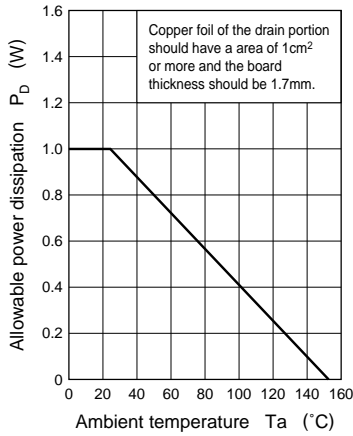
Parameter	Symbol	Conditions	min	typ	max	Unit
Drain to Source cut-off current	$I_{DSS}$	$V_{DS} = 60V, V_{GS} = 0$			10	$\mu A$
Gate to Source leakage current	$I_{GSS}$	$V_{GS} = 20V, V_{DS} = 0$			0.1	$\mu A$
Drain to Source breakdown voltage	$V_{DSS}$	$I_{DS} = 100\mu A, V_{GS} = 0$	80			V
Gate threshold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

\*1 Pulse measurement

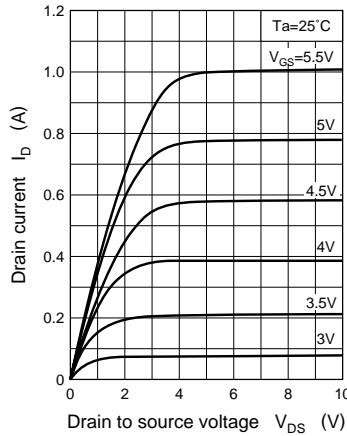
\*2  $t_{on}, t_{off}$  measurement circuit



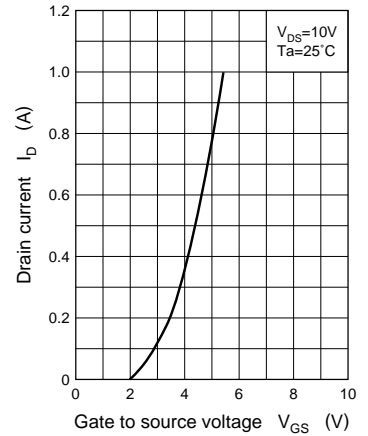
$P_D - T_a$



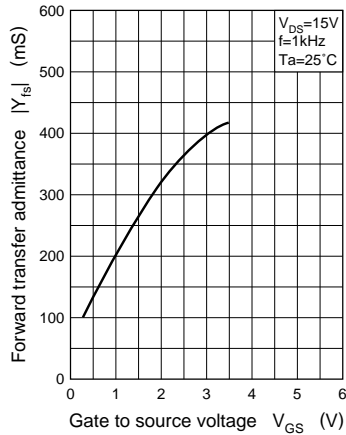
$I_D - V_{DS}$



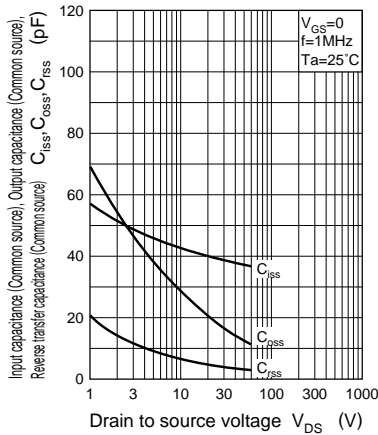
$I_D - V_{GS}$



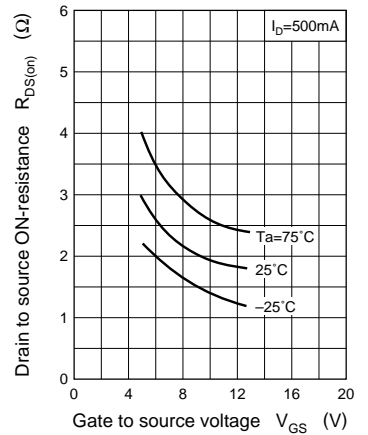
$|Y_{fs}| - V_{GS}$



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



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



$R_{DS(on)} - T_a$

