

## 2SK1228

## Silicon N-Channel MOS FET

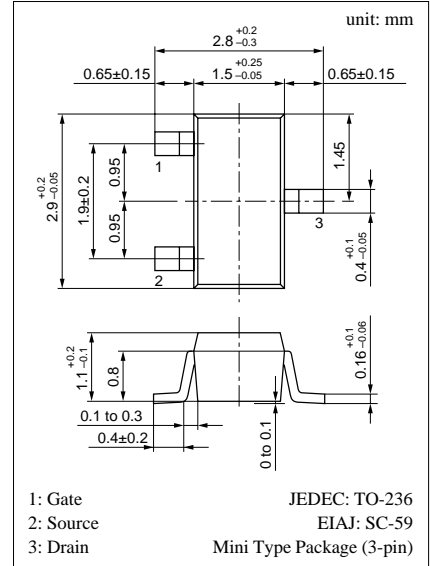
For switching

## ■ Features

- High-speed switching
- Wide frequency band
- Incorporating a built-in gate protection-diode
- Allowing 2.5V drive

## ■ Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Ratings	Unit
Drain to Source voltage	$V_{DS}$	50	V
Gate to Source voltage	$V_{GSO}$	10	V
Drain current	$I_D$	50	mA
Max drain current	$I_{DP}$	100	mA
Allowable power dissipation	$P_D$	150	mW
Channel temperature	$T_{ch}$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

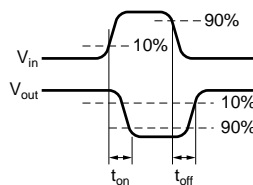
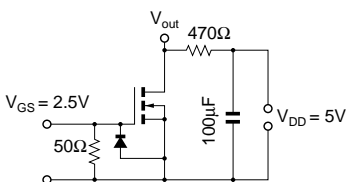


Marking Symbol: 4V

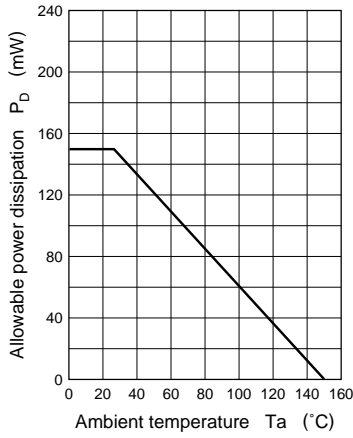
## ■ Electrical Characteristics (Ta = 25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Drain to Source cut-off current	$I_{DSS}$	$V_{DS} = 20V, V_{GS} = 0$			1	$\mu A$
Gate to Source leakage current	$I_{GSS}$	$V_{GS} = 10V, V_{DS} = 0$			1	$\mu A$
Drain to Source breakdown voltage	$V_{DSS}$	$I_D = 10\mu A, V_{GS} = 0$	50	100		V
Gate threshold voltage	$V_{th}$	$I_D = 100\mu A, V_{DS} = 5V$	0.5	0.8	1.1	V
Drain to Source ON-resistance	$R_{DS(on)}^{*1}$	$I_D = 10mA, V_{GS} = 2.5V$		27	50	$\Omega$
Forward transfer admittance	$ Y_{fs} $	$I_D = 10mA, V_{DS} = 5V, f = 1kHz$	20	39		mS
Input capacitance (Common Source)	$C_{iss}$	$V_{DS} = 5V, V_{GS} = 0, f = 1MHz$		4.5		pF
Output capacitance (Common Source)	$C_{oss}$			4.1		pF
Reverse transfer capacitance (Common Source)	$C_{rss}$			1.2		pF
Turn-on time	$t_{on}^{*2}$	$V_{DD} = 5V, V_{GS} = 0 \text{ to } 2.5V, R_L = 470\Omega$		0.2		$\mu s$
Turn-off time	$t_{off}^{*2}$	$V_{DD} = 5V, V_{GS} = 2.5 \text{ to } 0V, R_L = 470\Omega$		0.2		$\mu s$

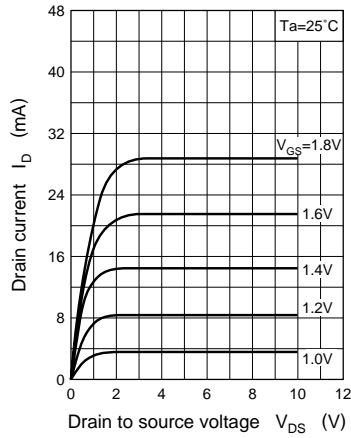
\*1 Pulse measurement

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

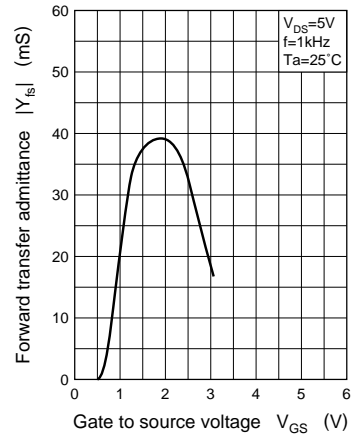
$P_D - T_a$



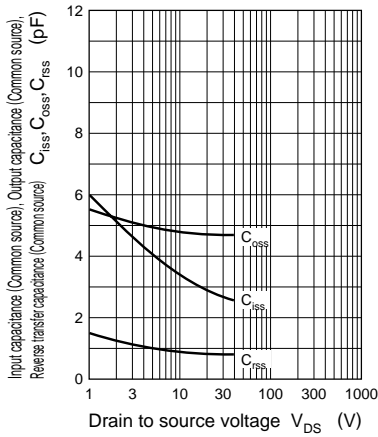
$I_D - V_{DS}$



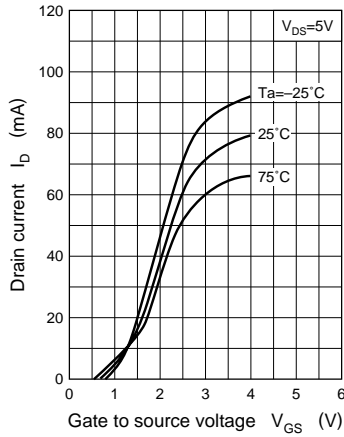
$|Y_{fs}| - V_{GS}$



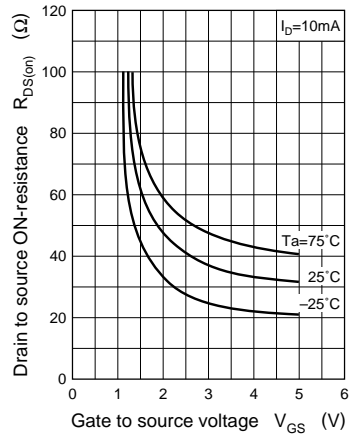
$C_{iss}, C_{oss}, C_{rss} - V_{DS}$



$I_D - V_{GS}$



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



$V_{IN} - I_O$

