## 2SK1228

## Silicon N-Channel MOS FET

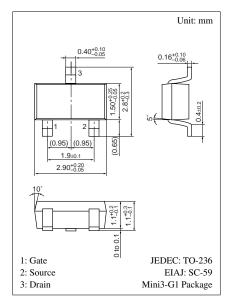
#### For switching

#### ■ Features

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

## ■ Absolute Maximum Ratings (T<sub>a</sub> = 25°C)

Parameter	Symbol	Ratings	Unit	
Drain to Source voltage	V <sub>DS</sub>	50	V	
Gate to Source voltage	V <sub>GSO</sub>	10	V	
Drain current	$I_{\mathrm{D}}$	50	mA	
Max drain current	$I_{\mathrm{DP}}$	100	mA	
Allowable power dissipation	$P_{\mathrm{D}}$	150	mW	
Channel temperature	T <sub>ch</sub>	150	°C	
Storage temperature	T <sub>stg</sub>	-55 to +150	°C	



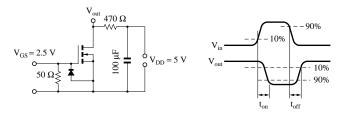
Marking Symbol: 4V

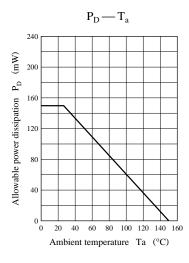
### ■ Electrical Characteristics (T<sub>a</sub> = 25°C)

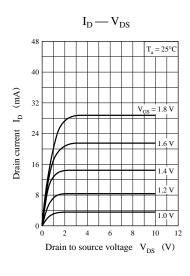
Parameter	Symbol	Conditions	min	typ	max	Unit
Drain to Source cut-off current	I <sub>DSS</sub>	$V_{DS} = 20 \text{ V}, V_{GS} = 0$			1	μΑ
Gate to Source leakage current	$I_{GSS}$	$V_{GS} = 10 \text{ V}, V_{DS} = 0$			1	μA
Drain to Source breakdown voltage	V <sub>DSS</sub>	$I_D = 10 \ \mu A, \ V_{GS} =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

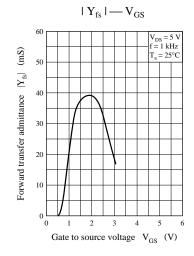
<sup>\*1</sup> Pulse measurement

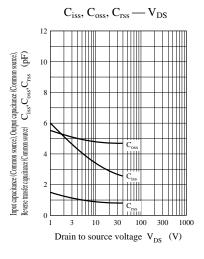
 $<sup>^{*2}</sup>$   $t_{on}$ ,  $t_{off}$  measurement circuit

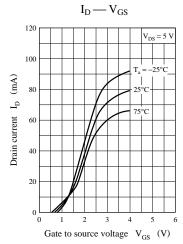


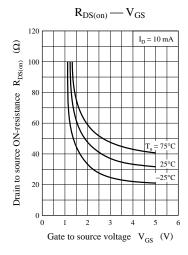


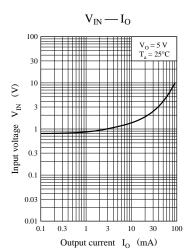












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