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# 2SK1228

## Silicon N-channel MOSFET

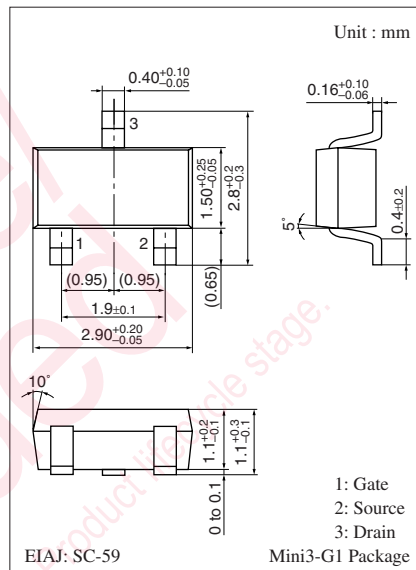
For switching circuits

### ■ Features

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

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

Parameter	Symbol	Rating	Unit
Drain-source voltage	$V_{DS}$	50	V
Gate-source voltage (Drain open)	$V_{GSO}$	10	V
Drain current	$I_D$	50	mA
Peak drain current	$I_{DP}$	100	mA
Power dissipation	$P_D$	150	mW
Channel temperature	$T_{ch}$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$



Marking Symbol: 4V

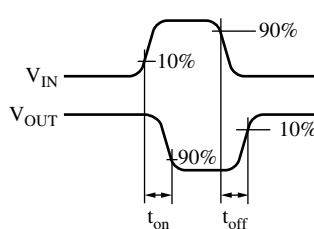
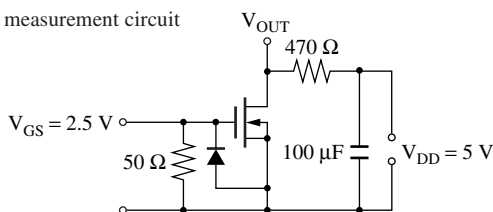
### ■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

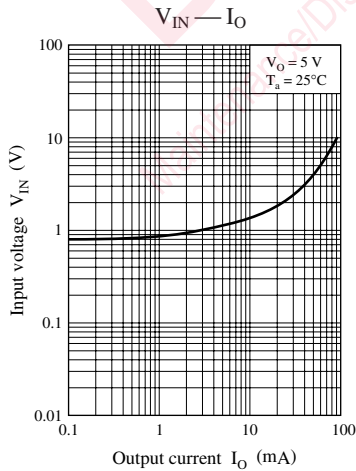
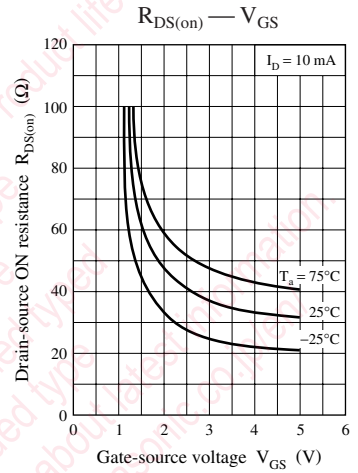
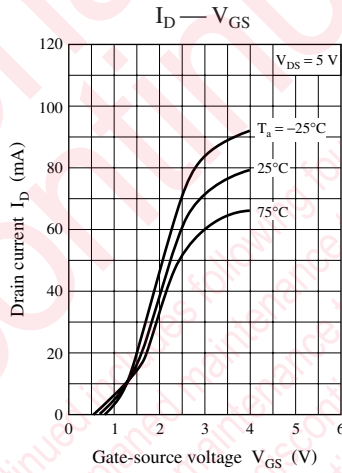
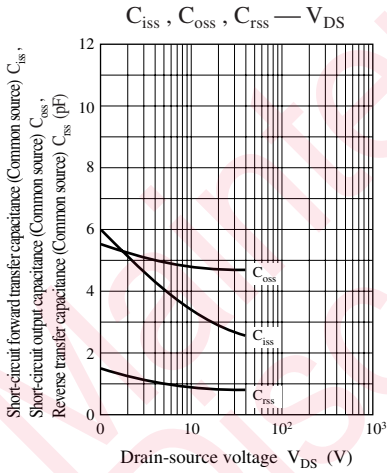
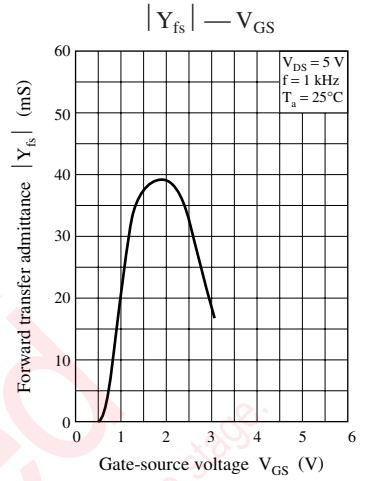
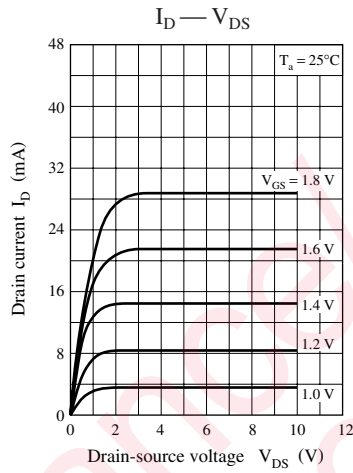
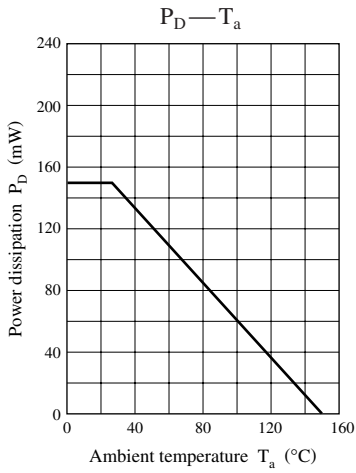
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	$V_{DSS}$	$I_D = 10 \mu\text{A}, V_{GS} = 0$	50	100		V
Drain-source cutoff current	$I_{DSS}$	$V_{DS} = 20 \text{ V}, V_{GS} = 0$			1.0	$\mu\text{A}$
Gate-source cutoff current	$I_{GSS}$	$V_{GS} = 10 \text{ V}, V_{DS} = 0$			1.0	$\mu\text{A}$
Gate threshold voltage	$V_{th}$	$I_D = 100 \mu\text{A}, V_{DS} = 5 \text{ V}$	0.5	0.8	1.1	V
Forward transfer admittance	$ Y_{fs} $	$I_D = 10 \text{ mA}, V_{DS} = 5 \text{ V}, f = 1 \text{ kHz}$	20	39		mS
Drain-source ON resistance	$R_{DS(on)}$	$I_D = 10 \text{ mA}, V_{GS} = 2.5 \text{ V}$		27	50	$\Omega$
Short-circuit forward transfer capacitance (Common source)	$C_{iss}$	$V_{DS} = 5 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$		4.5		pF
Short-circuit output capacitance (Common source)	$C_{oss}$			4.1		pF
Reverse transfer capacitance (Common source)	$C_{rss}$			1.2		pF
Turn-on time *1, 2	$t_{on}$	$V_{DD} = 5 \text{ V}, V_{GS} = 0 \text{ V to } 2.5 \text{ V}, R_L = 470 \Omega$		0.2		$\mu\text{s}$
Turn-off time *1, 2	$t_{off}$	$V_{DD} = 5 \text{ V}, V_{GS} = 2.5 \text{ V to } 0 \text{ V}, R_L = 470 \Omega$		0.2		$\mu\text{s}$

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. \*1: Pulse measurement

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







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