# 2SK3938

# Silicon N-channel MOSFET

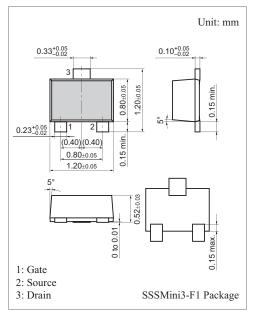
### For switching circuits

#### ■ Features

- High-speed switching
- SSSMini type package, allowing downsizing of the equipment and automatic insertion through the tape packing

### ■ Absolute Maximum Ratings $T_a = 25$ °C

Parameter	Symbol	Rating	Unit	
Drain-source surrender voltage	V <sub>DSS</sub>	30	V	
Gate-source surrender voltage	V <sub>GSS</sub>	±12	V	
Drain current	$I_D$	100	mA	
Peak drain current	$I_{DP}$	200	mA	
Power dissipation	$P_{\mathrm{D}}$	100	mW	
Channel temperature	T <sub>ch</sub>	125	°C	
Storage temperature	T <sub>stg</sub>	-55 to +125	°C	



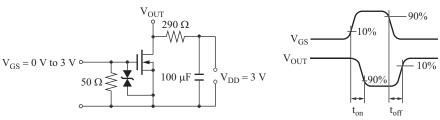
Marking Symbol: 6U

## ■ Electrical Characteristics $T_a = 25$ °C±3°C

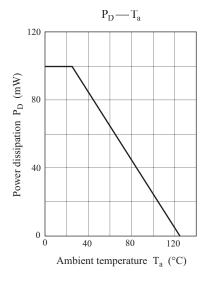
Parameter	Symbol	Conditions	Min	Тур	Max	Unit
Drain-source surrender voltage	$V_{\rm DSS}$	$I_D = 10 \ \mu A, V_{GS} = 0$	30			V
Drain-source cutoff current	$I_{DSS}$	$V_{DS} = 20 \text{ V}, V_{GS} = 0$			1.0	μΑ
Gate-source cutoff current	$I_{GSS}$	$V_{GS} = \pm 10 \text{ V}, V_{DS} = 0$			±10	μΑ
Gate threshold voltage	$V_{TH}$	$I_D = 1.0 \mu A, V_{DS} = 3 V$	0.5	1.0	1.5	V
Drain-source ON resistance	R <sub>DS(on)</sub>	$I_D = 10 \text{ mA}, V_{GS} = 2.5 \text{ V}$		7	12	Ω
		$I_D = 10 \text{ mA}, V_{GS} = 4.0 \text{ V}$		5	8	
Forward transfer admittance	Y <sub>fs</sub>	$I_D = 10 \text{ mA}, V_{DS} = 3 \text{ V}, f = 1 \text{ kHz}$	20	55		mS
Short-circuit forward transfer capacitance (Common source)	C <sub>iss</sub>	$V_{DS} = 3 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$		12		pF
Short-circuit output capacitance (Common source)	C <sub>oss</sub>			10		pF
Reverse transfer capacitance (Common source)	C <sub>rss</sub>			6		pF
Turn-on time *	t <sub>on</sub>	$V_{DD} = 3 \text{ V}, V_{GS} = 0 \text{ V to } 3 \text{ V}, I_D = 10 \text{ mA}$		350		ns
Turn-off time *	t <sub>off</sub>	$V_{DD} = 3 \text{ V}, V_{GS} = 3 \text{ V to } 0 \text{ V}, I_D = 10 \text{ mA}$		350		ns

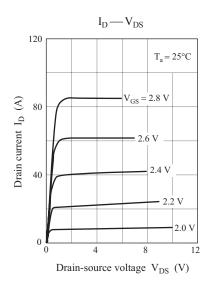
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

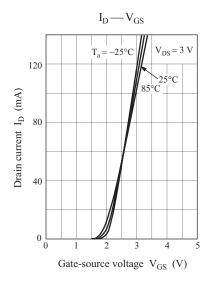
2. \*:  $t_{on}$ ,  $t_{off}$  measurement circuit

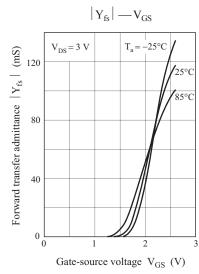


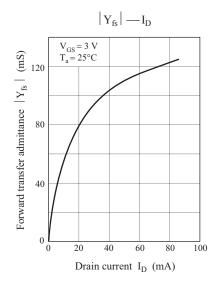
2SK3938 Panasonic

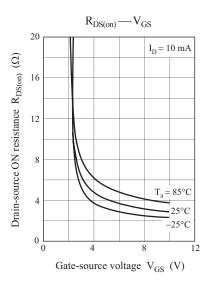












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