Package

SSSMini3-F1

Code

# **2SJ0674**

### Silicon P-channel MOS FET

#### For switching circuits

#### ■ Features

- Low ON resistance Ron
- 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

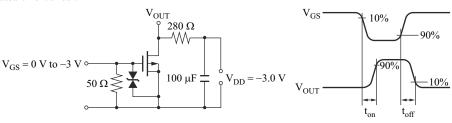
Parameter	Symbol	Rating	Unit		
Drain-source surrender voltage	V <sub>DSS</sub>	-30	V		
Gate-source surrender voltage	V <sub>GSS</sub>	±12	V		
Drain current	$I_{\mathrm{D}}$	-100	mA		
Peak drain current	$I_{DP}$	-200	mA		
Power dissipation	P <sub>D</sub>	100	mW		
Channel temperature	$T_{ch}$	125	°C		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

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

• High-speed switching • SSSMini type package, allowing downsizing of the equipment and automatic insertion through the tape packing  Absolute Maximum Ratings T <sub>a</sub> = 25°C  Parameter  Symbol Rating Unit  Drain-source surrender voltage  Gate-source surrender voltage  Voss 12 V  Drain current  Ib −160 mA  Peak drain current  Ibp −200 mA  Power dissipation  Parameter  Symbol Conditions  Flag 100 mW  Electrical Characteristics T <sub>a</sub> = 25°C 3°C  Parameter  Symbol Conditions  Min Typ Max Unit  Drain-source suriender voltage  Voss 1 <sub>D</sub> = 10 mA, V <sub>SS</sub> = 0 V  Gate source cutoff current  Ibps Voss 20 V V <sub>SS</sub> = 0 V  Drain-source cutoff current  Ibps Voss = 20 V V <sub>SS</sub> = 0 V  Drain-source cutoff current  Russource Conditions  Russource Cutoff current  Case Voss = 20 V V <sub>SS</sub> = 0 V  Drain-source PN resistanc  Russource  Russource  Construction input capacitance  (Common source)  Construction cutoff current  Construction	<ul> <li>High-speed switching</li> </ul>			SSS	Mini3-F1			
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	• SSSMini type package, allowing	downsizing o	f the equipr	nent and Pin	Name			
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	automatic insertion through the tape pa	acking		1:0	Gate		ć	S.
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				2: \$	ource		XO	9
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	■ Absolute Maximum Ratings T <sub>a</sub>	$_{\rm a}$ = 25°C		3:1	Drain	•	(0)	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Parameter	Symbol	Rating	Unit	wiking Cun	ا الحدياء ماهم		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Drain-source surrender voltage	V <sub>DSS</sub>	-30	V	irking Syl	YOU DU		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Gate-source surrender voltage	V <sub>GSS</sub>	±12	V				
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Drain current	$I_{\mathrm{D}}$	-100	mA	ANO.			
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Peak drain current	$I_{DP}$	-200	mA				
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Power dissipation	P <sub>D</sub>	100	mW				
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Channel temperature	$T_{\rm ch}$	125	°C 400	i)			·OL.
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Storage temperature	T <sub>stg</sub>	-55 to +125	~ 10 x16			2	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	• •			WIII CO	6		Miller	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	■ Electrical Characteristics $T_a = 2$	25°C±3°C		allo and toe	1700	•.•	HO.	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Parameter	Symbo	1	Conditions	Min	Тур	Max	Unit
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Drain-source surrender voltage	V <sub>DSS</sub>	$I_D = -100$	$A, V_{GS} = 0$	<b>3</b> 0	XO C	0	V
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Drain-source cutoff current	$I_{ m DSS}$	V <sub>DS</sub> = -20	$V_{GS} = 0$	01/1/	0	-1.0	μΑ
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Gate-source cutoff current	$I_{GSS}$	$V_{GS} = \pm 11$	$V, V_{DS} = 0$	Pop	1/2	±10	μΑ
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Gate threshold voltage	V	I <sub>D</sub> -1.0	$tA, V_{DS} = -3.0 \text{ V}$	-0.5	-1.0	-1.5	V
Forward transfer admittance $ V_{fs} $ $ I_D=-10  \text{mA}, V_{GS}=-4.0  \text{V}$ $9$ $18$ Forward transfer admittance $ V_{fs} $ $ I_D=-10  \text{mA}, V_{DS}=-3  \text{V}, f=1  \text{kHz}$ $20$ $40$ $\text{mS}$ Short-circuit input capacitance (Common source) $ V_{DS}  = -3  \text{V}, V_{GS} = 0, f=1  \text{MHz}$ $ V_{DS}  = -3  \text{V}, V_{GS}  = 0, f=1  \text{MHz}$ $ V_{DS}  = -3  \text{V}, V_{GS}  = 0, f=1  \text{MHz}$ $ V_{DS}  = -3  \text{V}, V_{GS}  = 0, f=1  \text{MHz}$ $ V_{DS}  = -3  \text{V}, V_{GS}  = 0, f=1  \text{MHz}$ $ V_{DS}  = -3  \text{V}, V_{GS}  = 0, f=1  \text{MHz}$ $ V_{DS}  = -3  \text{V}, V_{GS}  = 0, f=1  \text{MHz}$ $ V_{DS}  = -3  \text{V}, V_{GS} $	D. C. COV.	in	$I_{\rm D} = -10  \rm n$	$nA, V_{GS} = -2.5 \text{ V}$	VII	13	30	
Short-circuit input capacitance (Common source)  Short-circuit output capacitance (Common source) $C_{iss}$ $V_{DS} = -3 V, V_{GS} = 0, f = 1 \text{ MHz}$ Reverse transfer capacitance (Common source) $C_{rss}$	Drain-source ON resistance	R <sub>DS(on)</sub>	$I_{\rm D} = -10  \rm p$	$I_D = -10 \text{ mA}, V_{GS} = -4.0 \text{ V}$		9		
Short-circuit input capacitance (Common source)  Short-circuit output capacitance (Common source) $C_{iss}$ $V_{DS} = -3 V, V_{GS} = 0, f = 1 \text{ MHz}$ Reverse transfer capacitance (Common source) $C_{rss}$	Forward transfer admittance	Y <sub>fs</sub>	$I_D = -10n$	$nA, V_{DS} = -3 V, f = 1 \text{ kHz}$	20	40		mS
Short-circuit output capacitance (Common source) $V_{DS} = -3 V, V_{GS} = 0, f = 1 \text{ MHz}$ $V_{DS} = -3 V, V_{GS} = 0, f = 1 \text{ MHz}$ Reverse transfer capacitance (Common source) $V_{DS} = -3 V, V_{GS} = 0, f = 1 \text{ MHz}$ $V_{DS} = -3 V, V_{GS} = 0, f = 1 \text{ MHz}$ $V_{DS} = -3 V, V_{GS} = 0, f = 1 \text{ MHz}$ $V_{DS} = -3 V, V_{GS} = 0, f = 1 \text{ MHz}$ $V_{DS} = -3 V, V_{GS} = 0, f = 1 \text{ MHz}$ $V_{DS} = -3 V, V_{CS} = 0, f = 1 \text{ MHz}$	Short-circuit input capacitance	C		110, 116		12		nF.
Reverse transfer capacitance (Common source) $C_{rss}$ $Turn-on time * t_{on} V_{DD} = -3 V, V_{GS} = 0 V to -3 V, I_{D} = -10 mA$ $7 pF$ $Turn-on time * t_{on} V_{DD} = -3 V, V_{GS} = 0 V to -3 V, I_{D} = -10 mA$ $300 ns$	(Common source)	C <sub>iss</sub>		140, 1416.		12		pr
Reverse transfer capacitance (Common source) $C_{rss}$ $Turn-on time * t_{on} V_{DD} = -3 V, V_{GS} = 0 V to -3 V, I_{D} = -10 mA$ $7 pF$ $Turn-on time * t_{on} V_{DD} = -3 V, V_{GS} = 0 V to -3 V, I_{D} = -10 mA$ $300 ns$		C	$V_{\rm DC} = -3$	$V_{CS} = 0$ f = 1 MHz		13		рF
(Common source)	(Common source)	Coss	- LDS	", 'GS 0,1 111112		10		P-
Turn-on time * $t_{on}$ $V_{DD}=-3$ $V_{VGS}=0$ $V_{to}-3$ $V_{to}=-10$ mA 300 ns		Cross	250			7		рF
	· · · · · · · · · · · · · · · · · · ·	-188						r ·
Turn-off time *		t <sub>on</sub>	$V_{DD} = -3 V$	$V_{V}V_{GS} = 0 \text{ V to } -3 \text{ V}, I_{D} = -10 \text{ mA}$		300		ns
	Turn-off time *	$t_{\rm off}$	$V_{DD} = -3 V$	$V_1$ , $V_{GS} = -3 \text{ V to } 0 \text{ V}$ , $I_D = -10 \text{ mA}$		400		ns

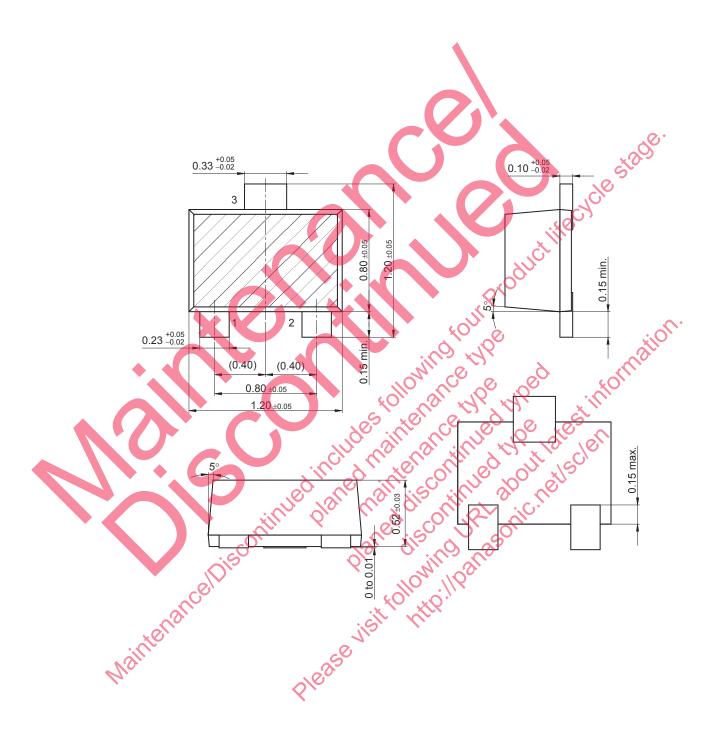
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

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



SSSMini3-F1

Unit: mm



#### Request for your special attention and precautions in using the technical information and semiconductors described in this book

- (1) If any of the products or technical information described in this book is to be exported or provided to non-residents, the laws and regulations of the exporting country, especially, those with regard to security export control, must be observed.
- (2) The technical information described in this book is intended only to show the main characteristics and application circuit examples of the products, and no license is granted under any intellectual property right or other right owned by our company or any other company. Therefore, no responsibility is assumed by our company as to the infringement upon any such right owned by any other company which may arise as a result of the use of technical information described in this book.
- (3) The products described in this book are intended to be used for standard applications or general electronic equipment (such as office equipment, communications equipment, measuring instruments and household appliances). Consult our sales staff in advance for information on the following applications:
  - · Special applications (such as for airplanes, aerospace, automobiles, traffic control equipment, combustion equipment, life support systems and safety devices) in which exceptional quality and reliability are required, or if the failure or malfunction of the products may directly jeopardize life or harm the human body.
  - · Any applications other than the standard applications intended.
- (4) The products and product specifications described in this book are subject to change without notice for modification and/or improvement. At the final stage of your design, purchasing, or use of the products, therefore, ask for the most up-to-date Product Standards in advance to make sure that the latest specifications satisfy your requirements.
- (5) When designing your equipment, comply with the range of absolute maximum rating and the guaranteed operating conditions (operating power supply voltage and operating environment etc.). Especially, please be careful not to exceed the range of absolute maximum rating on the transient state, such as power-on, power-off and mode-switching. Otherwise, we will not be liable for any defect which may arise later in your equipment.
  - Even when the products are used within the guaranteed values, take into the consideration of incidence of break down and failure mode, possible to occur to semiconductor products. Measures on the systems such as redundant design, arresting the spread of fire or preventing glitch are recommended in order to prevent physical injury, fire, social damages, for example, by using the products.
- (6) Comply with the instructions for use in order to prevent breakdown and characteristics change due to external factors (ESD, EOS) thermal stress and mechanical stress) at the time of handling, mounting or at customer's process. When using products for which damp-proof packing is required, satisfy the conditions, such as shelf life and the clapsed time since first opening the packages.
- (7) This book may be not reprinted or reproduced whether wholly or partially, without the prior written permission of Matsushita planed discontinued Electric Industrial Co., Ltd. Maintenance Discontinued includ

OHOWING UKL BOOUT 18 18 5CIE