

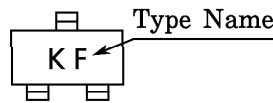
TOSHIBA FIELD EFFECT TRANSISTOR SILICON P CHANNEL MOS TYPE

# 2SJ168

HIGH SPEED SWITCHING APPLICATIONS  
 ANALOG SWITCH APPLICATIONS  
 INTERFACE APPLICATIONS

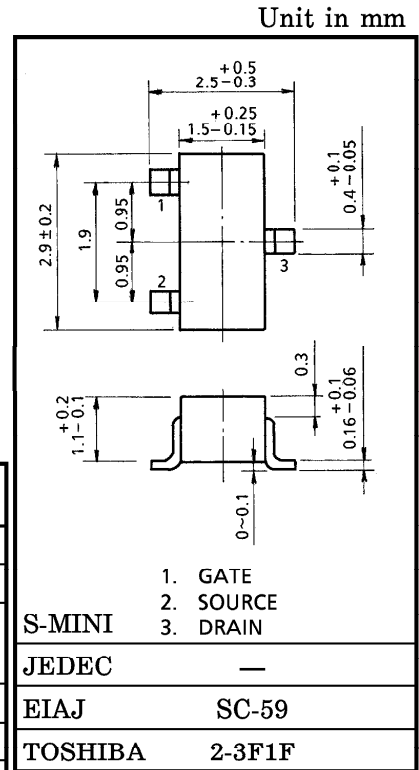
- Excellent Switching Time:  $t_{on} = 14\text{ns}$  (Typ.)
- High Forward Transfer Admittance  
 :  $|Y_{fs}| = 100\text{mS}$  (Min.) @  $I_D = -50\text{mA}$
- Low On Resistance  
 :  $R_{DS(ON)} = 1.3\Omega$  (Typ.) @  $I_D = -50\text{mA}$
- Enhancement-Mode
- Complementary to 2SK1062

Marking



MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	$V_{DSS}$	-60	V
Gate-Source Voltage	$V_{GSS}$	$\pm 20$	V
Drain Current	DC	$I_D$	-200
	Pulse	$I_{DP}$	-800
Drain Power Dissipation (Ta = 25°C)	$P_D$	200	mW
Channel Temperature	$T_{ch}$	150	°C
Storage Temperature Range	$T_{stg}$	-55~150	°C



Weight : 0.012g

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

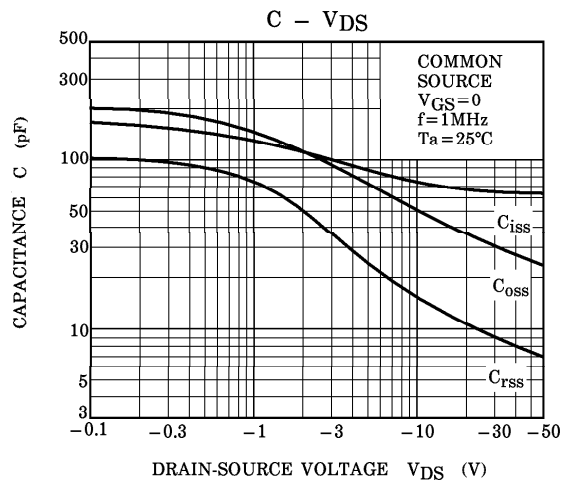
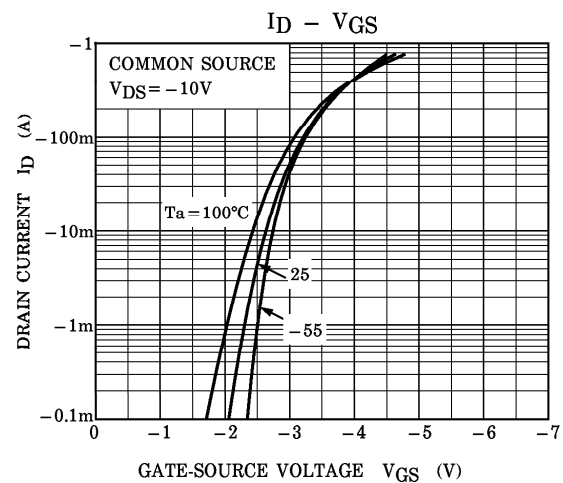
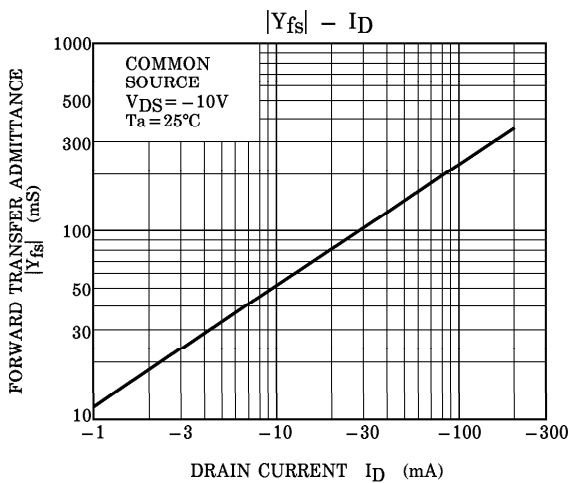
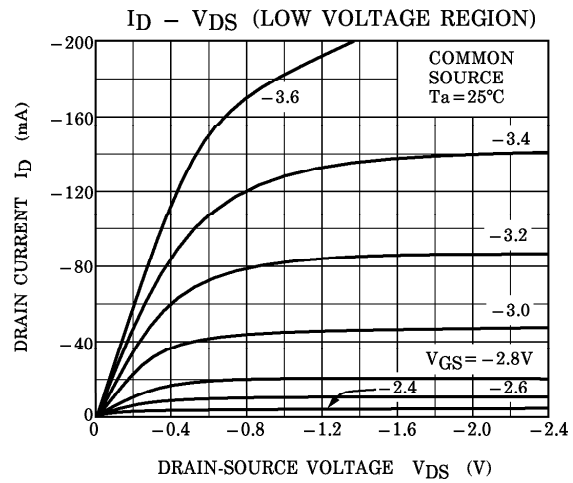
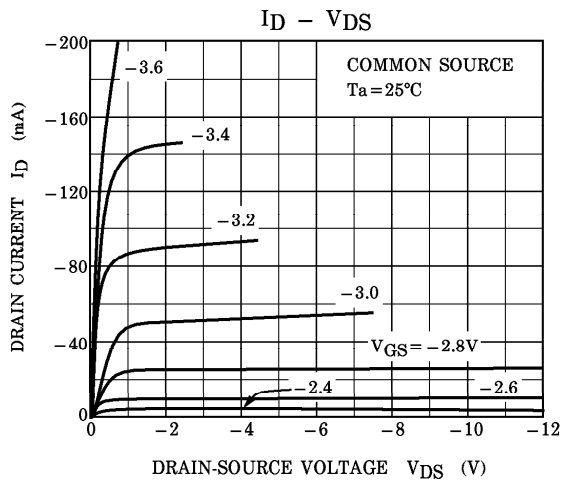
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Gate Leakage Current	$I_{GSS}$	$V_{GS} = \pm 10\text{V}, V_{DS} = 0$	—	—	$\pm 100$	nA	
Drain Cut-off Current	$I_{DSS}$	$V_{DS} = -60\text{V}, V_{GS} = 0$	—	—	-10	$\mu\text{A}$	
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = -1\text{mA}, V_{GS} = 0$	-60	—	—	V	
Gate Threshold Voltage	$V_{th}$	$V_{DS} = -10\text{V}, I_D = -1\text{mA}$	-2	—	-3.5	V	
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS} = -10\text{V}, I_D = -50\text{mA}$	100	—	—	mS	
Drain-Source ON Resistance	$R_{DS(ON)}$	$I_D = -50\text{mA}, V_{GS} = -10\text{V}$	—	1.3	2.0	$\Omega$	
Drain-Source ON Voltage	$V_{DS(ON)}$	$I_D = -50\text{mA}, V_{GS} = -10\text{V}$	—	-65	-100	mV	
Input Capacitance	$C_{iss}$	$V_{DS} = -10\text{V}, V_{GS} = 0, f = 1\text{MHz}$	—	73	85	pF	
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS} = -10\text{V}, V_{GS} = 0, f = 1\text{MHz}$	—	15	22	pF	
Output Capacitance	$C_{oss}$	$V_{DS} = -10\text{V}, V_{GS} = 0, f = 1\text{MHz}$	—	48	60	pF	
Switching Time	Rise Time	$t_r$			—	8	—
	Turn-on Time	$t_{on}$			—	14	—
	Fall Time	$t_f$			—	35	—
	Turn-off Time	$t_{off}$			—	100	—

$I_D = -100\text{mA}$   
 $V_{IN} : t_r, t_f < 5\text{ns}$   
 $D.U. \leq 1\%$  ( $Z_{out} = 50\Omega$ )

This transistor is the electrostatic sensitive device. Please handle with caution.

961001EAA2

● TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.



961001EAA2'

● The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.  
● The information contained herein is subject to change without notice.

