

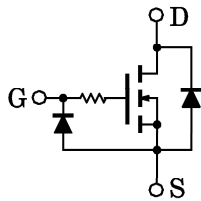
TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL MOS TYPE

2SK2823

FOR PORTABLE EQUIPMENT
HIGH SPEED SWITCH APPLICATIONS
ANALOG SWITCH APPLICATIONS

- High Input Impedance
- 1.5V Gate Drive
- Low Gate Threshold Voltage : $V_{th}=0.5\sim 1.0V$
- Small Package

EQUIVALENT CIRCUIT

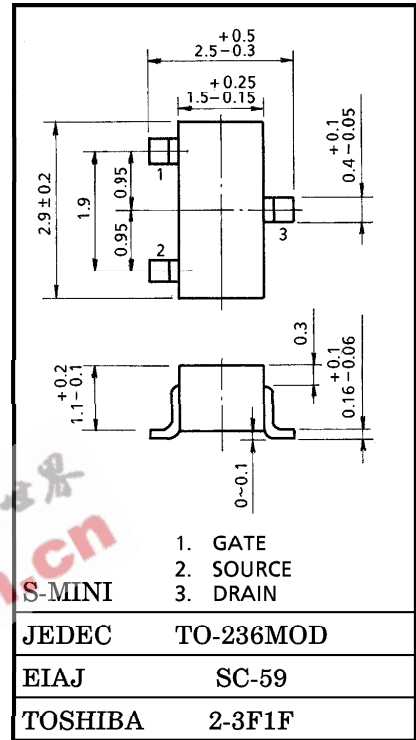


MARKING



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

Unit in mm



Weight : 0.012g (Typ.)

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GSS}	10	V
DC Drain Current	I_D	100	mA
Drain Power Dissipation	P_D	200	mW
Channel Temperature	T_{ch}	150	°C
Storage Temperature Range	T_{stg}	-55~150	°C

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.

● 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.

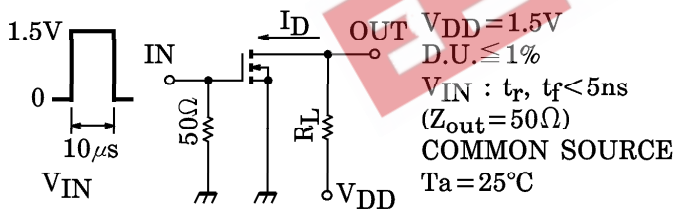
● The information contained herein is subject to change without notice.

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

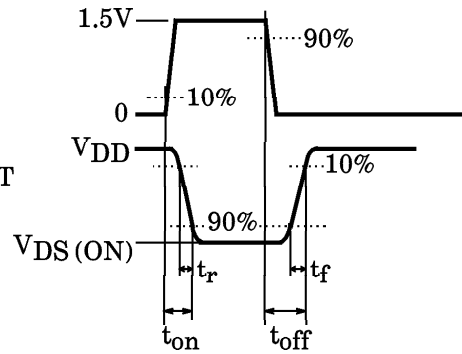
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		I_{GSS}	$V_{GS}=10V, V_{DS}=0$	—	—	1	μA
Drain-Source Breakdown Voltage		$V_{(BR)DSS}$	$I_D=100\mu A, V_{GS}=0$	20	—	—	V
Drain Cut-off Current		I_{DSS}	$V_{DS}=20V, V_{GS}=0$	—	—	1	μA
Gate Threshold Voltage		V_{th}	$V_{DS}=1.5V, I_D=0.1mA$	0.5	—	1.0	V
Forward Transfer Admittance		$ Y_{fs} $	$V_{DS}=1.5V, I_D=10mA$	35	70	—	mS
Drain-Source ON Resistance 1		$R_{DS(ON)1}$	$I_D=1mA, V_{GS}=1.2V$	—	15	50	Ω
Drain-Source ON Resistance 2		$R_{DS(ON)2}$	$I_D=10mA, V_{GS}=1.5V$	—	10	40	Ω
Drain-Source ON Resistance 3		$R_{DS(ON)3}$	$I_D=10mA, V_{GS}=2.5V$	—	7	28	Ω
Input Capacitance		C_{iss}	$V_{DS}=1.5V, V_{GS}=0, f=1MHz$	—	12	—	pF
Reverse Transfer Capacitance		C_{rss}	$V_{DS}=1.5V, V_{GS}=0, f=1MHz$	—	3.4	—	pF
Output Capacitance		C_{oss}	$V_{DS}=1.5V, V_{GS}=0, f=1MHz$	—	12	—	pF
Switching Time	Turn-on Time	t_{on}	$V_{DD}=1.5V, I_D=10mA, V_{GS}=0\sim 1.5V$	—	0.35	—	μs
	Turn-off Time	t_{off}		—	0.2	—	

SWITCHING TIME TEST CIRCUIT

(a) TEST CIRCUIT



(b) V_{IN}
 V_{GS}



(c) V_{OUT}
 V_{DS}

