

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL MOS TYPE

2SK2009

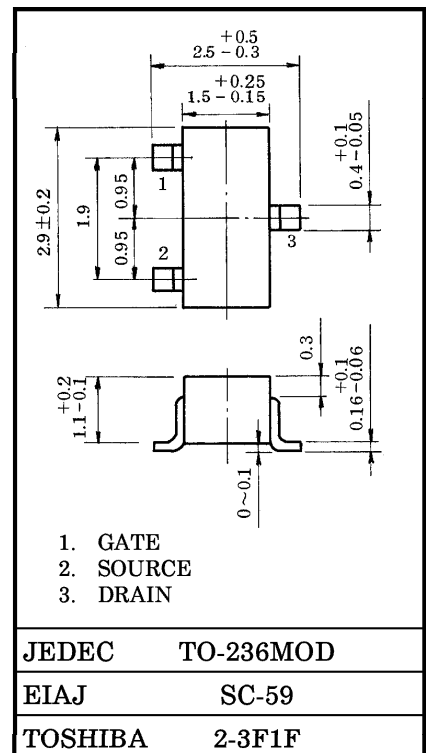
HIGH SPEED SWITCHING APPLICATIONS.
ANALOG SWITCH APPLICATIONS.

- High Input Impedance.
- Low Gate Threshold Voltage : $V_{th} = 0.5 \sim 1.5V$
- Excellent Switching Times : $t_{on} = 0.06\mu s$ (Typ.)
 $t_{off} = 0.12\mu s$ (Typ.)
- Low Drain-Source ON Resistance : $R_{DS(ON)} = 1.2\Omega$ (Typ.)
- Small Package.
- Enhancement-Mode

MAXIMUM RATINGS ($T_a = 25^\circ C$)

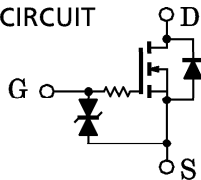
CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GSS}	± 20	V
DC Drain Current	I_D	200	mA
Drain Power Dissipation	P_D	200	mW
Channel Temperature	T_{ch}	150	$^\circ C$
Storage Temperature Range	T_{stg}	$-55 \sim 150$	$^\circ C$

Unit in mm

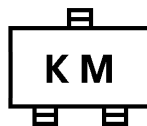


Weight : 0.012g

EQUIVALENT CIRCUIT



MARKING



THIS TRANSISTOR ELECTROSTATIC SENSITIVE DEVICE. PLEASE HANDLE WITH CAUTION.

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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Gate Leakage Current	I_{GSS}	$V_{GS} = \pm 10V, V_{DS} = 0$	—	—	± 0.1	μA	
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 1mA, V_{GS} = 0$	30	—	—	V	
Drain Cut-off Current	I_{DSS}	$V_{DS} = 30V, V_{GS} = 0$	—	—	10	μA	
Gate Threshold Voltage	V_{th}	$V_{DS} = 3V, I_D = 0.1mA$	0.5	—	1.5	V	
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS} = 3V, I_D = 50mA$	100	—	—	mS	
Drain-Source ON Resistance	$R_{DS(ON)}$	$I_D = 50mA, V_{GS} = 2.5V$	—	1.2	2	Ω	
Input Capacitance	C_{iss}	$V_{DS} = 3V, V_{GS} = 0, f = 1MHz$	—	70	—	pF	
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = 3V, V_{GS} = 0, f = 1MHz$	—	23	—	pF	
Output Capacitance	C_{oss}	$V_{DS} = 3V, V_{GS} = 0, f = 1MHz$	—	58	—	pF	
Switching Time	Turn-on Time	t_{on}	$V_{DD} = 3V, I_D = 10mA$ $V_{GS} = 0 \sim 2.5V$		—	0.06	μs
	Turn-off Time	t_{off}	$V_{DD} = 3V, I_D = 10mA$ $V_{GS} = 0 \sim 2.5V$		—	0.12	μs

SWITCHING TIME TEST CIRCUIT

