

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL MOS TYPE

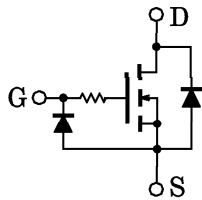
2SK1830

HIGH SPEED SWITCHING APPLICATIONS

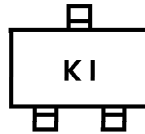
ANALOG SWITCH APPLICATIONS

- 2.5V Gate Drive
- Low Threshold Voltage : $V_{th}=0.5\sim 1.5V$
- High Speed
- Enhancement-Mode
- Small Package

EQUIVALENT CIRCUIT

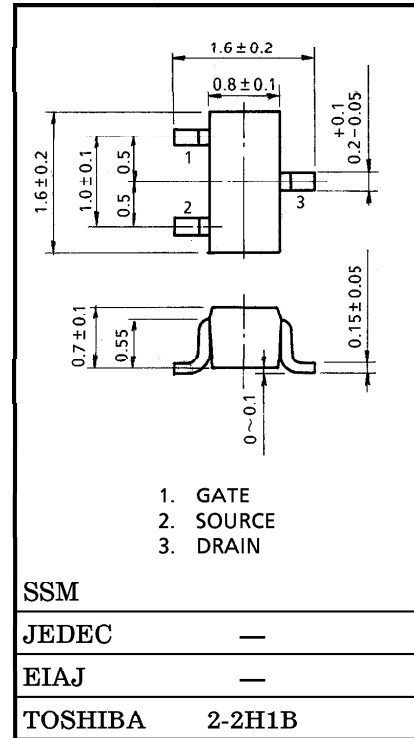


MARKING



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

Unit in mm



SSM

JEDEC —

EIAJ —

TOSHIBA 2-2H1B

Weight : 2.4mg (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	50	mA
Drain Power Dissipation	P_D	100	mW
Channel Temperature	T_{ch}	150	°C
Storage Temperature Range	T_{stg}	-55~150	°C

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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}	$V_{DS}=3V, I_D=0.1mA$	0.5	—	1.5	V	
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS}=3V, I_D=10mA$	20	—	—	mS	
Drain-Source ON Resistance	$R_{DS(ON)}$	$I_D=10mA, V_{GS}=2.5V$	—	20	40	Ω	
Input Capacitance	C_{iss}	$V_{DS}=3V, V_{GS}=0, f=1MHz$	—	5.5	—	pF	
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=3V, V_{GS}=0, f=1MHz$	—	1.6	—	pF	
Output Capacitance	C_{oss}	$V_{DS}=3V, V_{GS}=0, f=1MHz$	—	6.5	—	pF	
Switching Time	Turn-on Time	t_{on}	$V_{DD}=3V, I_D=10mA, V_{GS}=0\sim 2.5V$	—	0.14	—	μs
	Turn-off Time	t_{off}	$V_{DD}=3V, I_D=10mA, V_{GS}=0\sim 2.5V$	—	0.14	—	μs

SWITCHING TIME TEST CIRCUIT

