

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL MOS TYPE

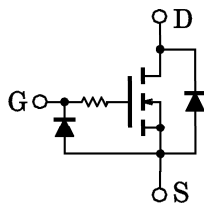
# 2SK1830

HIGH SPEED SWITCHING APPLICATIONS

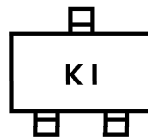
ANALOG SWITCH APPLICATIONS

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

EQUIVALENT CIRCUIT

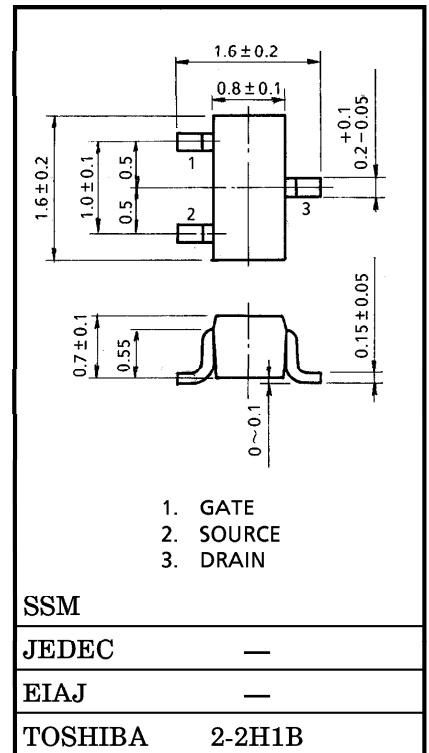


MARKING



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

Unit in mm



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	IGSS	VGS=10V, VDS=0	—	—	1	μA	
Drain-Source Breakdown Voltage	V(BR)DSS	ID=100μA, VGS=0	20	—	—	V	
Drain Cut-off Current	IDSS	VDS=20V, VGS=0	—	—	1	μA	
Gate Threshold Voltage	Vth	VDS=3V, ID=0.1mA	0.5	—	1.5	V	
Forward Transfer Admittance	Yfs	VDS=3V, ID=10mA	20	—	—	mS	
Drain-Source ON Resistance	RDS(ON)	ID=10mA, VGS=2.5V	—	20	40	Ω	
Input Capacitance	Ciss	VDS=3V, VGS=0, f=1MHz	—	5.5	—	pF	
Reverse Transfer Capacitance	Crss	VDS=3V, VGS=0, f=1MHz	—	1.6	—	pF	
Output Capacitance	Coss	VDS=3V, VGS=0, f=1MHz	—	6.5	—	pF	
Switching Time	Turn-on Time	t <sub>on</sub>	VDD=3V, ID=10mA, VGS=0~2.5V	—	0.14	—	μs
	Turn-off Time	t <sub>off</sub>	VDD=3V, ID=10mA, VGS=0~2.5V	—	0.14	—	μs

SWITCHING TIME TEST CIRCUIT

