

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL MOS TYPE

# 2SK2033

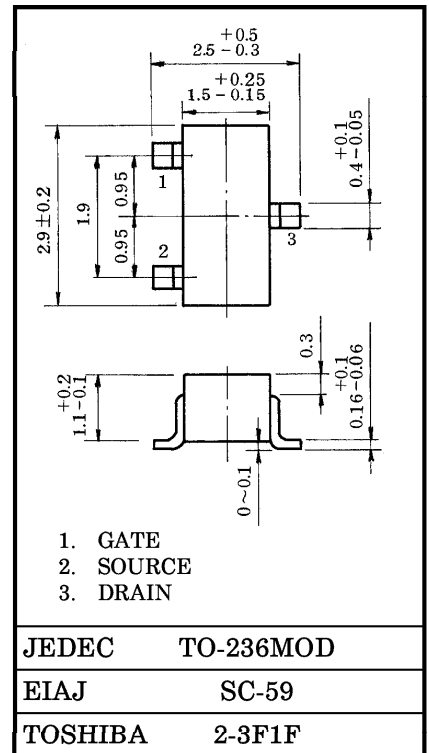
HIGH SPEED SWITCHING APPLICATIONS.  
ANALOG SWITCH APPLICATIONS.

- High Input Impedance.
- Low Gate Threshold Voltage :  $V_{th} = 0.5 \sim 1.5V$
- Excellent Switching Times :  $t_{on} = 0.16\mu s$  (typ.)  
 $t_{off} = 0.15\mu s$  (typ.)
- Small Package.
- Enhancement-Mode

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

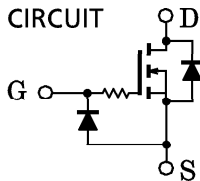
CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	$V_{DS}$	20	V
Gate-Source Voltage	$V_{GSS}$	10	V
DC Drain Current	$I_D$	100	mA
Drain Power Dissipation	$P_D$	200	mW
Channel Temperature	$T_{ch}$	150	$^\circ C$
Storage Temperature Range	$T_{stg}$	-55~150	$^\circ C$

Unit in mm

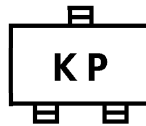


Weight : 0.012g

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	$I_{GSS}$	$V_{GS}=10V, V_{DS}=0$	—	—	1	$\mu A$	
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	$\mu A$	
Gate Threshold Voltage	$V_{th}$	$V_{DS}=3V, I_D=0.1mA$	0.5	—	1.5	V	
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS}=3V, I_D=10mA$	25	50	—	mS	
Drain-Source ON Resistance	$R_{DS(ON)}$	$I_D=10mA, V_{GS}=2.5V$	—	8	12	$\Omega$	
Input Capacitance	$C_{iss}$	$V_{DS}=3V, V_{GS}=0, f=1MHz$	—	8.5	—	pF	
Reverse Transfer Capacitance	$C_{rss}$	$V_{DS}=3V, V_{GS}=0, f=1MHz$	—	3.3	—	pF	
Output Capacitance	$C_{oss}$	$V_{DS}=3V, V_{GS}=0, f=1MHz$	—	9.3	—	pF	
Switching Time	Turn-on Time	$t_{on}$	$V_{DD}=3V, I_D=10mA$ $V_{GS}=0\sim 2.5V$		—	0.16	$\mu s$
	Turn-off Time	$t_{off}$	$V_{DD}=3V, I_D=10mA$ $V_{GS}=0\sim 2.5V$		—	0.15	$\mu s$

SWITCHING TIME TEST CIRCUIT

