

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL MOS TYPE

2SK2823

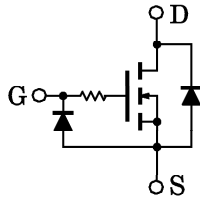
FOR PORTABLE EQUIPMENT

HIGH SPEED SWITCH APPLICATIONS

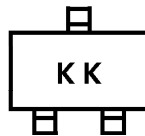
ANALOG SWITCH APPLICATIONS

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

EQUIVALENT CIRCUIT

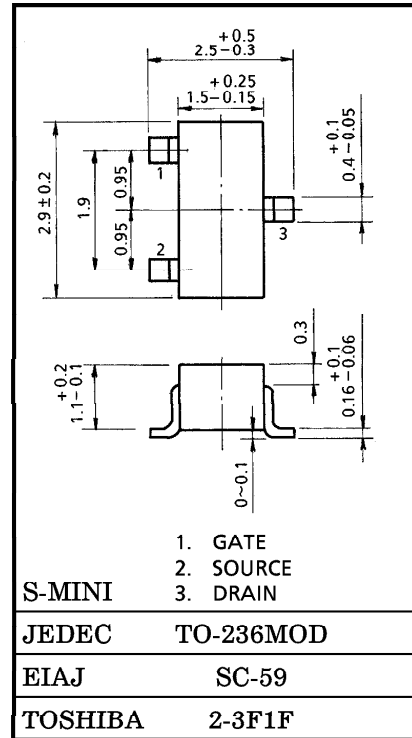


MARKING



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

Unit in mm



Weight : 0.012g (Typ.)

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

| 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 | $^\circ C$ |

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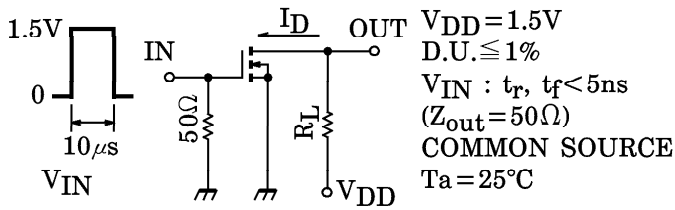
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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

| 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} | $V_{DS}=1.5V, I_D=0.1mA$ | 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}

