

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL MOS TYPE

2SK2824

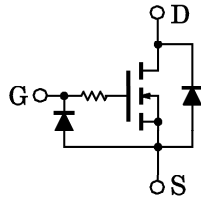
FOR PORTABLE EQUIPMENT

HIGH SPEED SWITCH APPLICATIONS

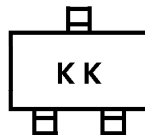
ANALOG SWITCH APPLICATIONS

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

EQUIVALENT CIRCUIT

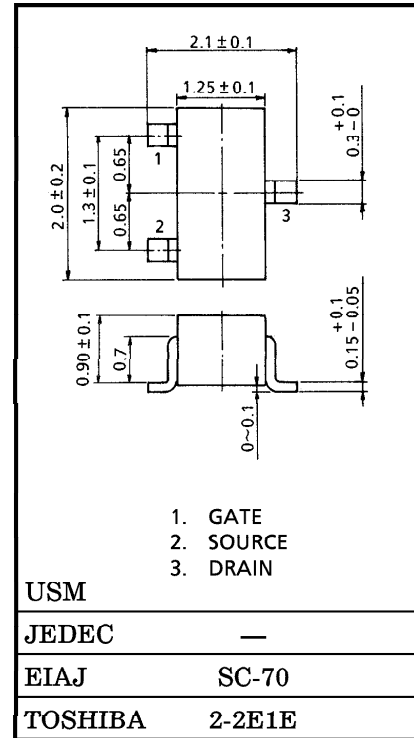


MARKING



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

Unit in mm



Weight : 0.006g (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 | 100 | mW |
| Channel Temperature | T_{ch} | 150 | $^\circ C$ |
| Storage Temperature Range | T_{stg} | -55~150 | $^\circ C$ |

961001EAA2

- TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.
- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.
- The information contained herein is subject to change without notice.

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 | $V_{DD}=1.5V, I_D=10mA, V_{GS}=0\sim 1.5V$ | — | 0.35 | — | μs |
| | Turn-off Time | | — | 0.2 | — | |

SWITCHING TIME TEST CIRCUIT

(a) TEST CIRCUIT

