

2SK879

General Purpose and Impedance Converter and Condenser Microphone Applications

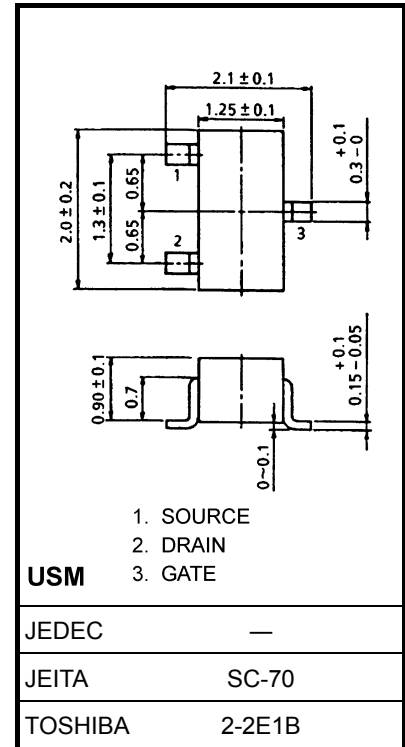
Unit: mm

- High breakdown voltage: $V_{GDS} = -50$ V
- High input impedance: $I_{GSS} = -1.0$ nA (max) ($V_{GS} = -30$ V)
- Low noise: $NF = 0.5$ dB (typ.) ($R_G = 100$ k Ω , $f = 120$ Hz)
- Small package

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

| Characteristics | Symbol | Rating | Unit |
|---------------------------|-----------|---------|------------------|
| Gate-drain voltage | V_{GDS} | -50 | V |
| Gate current | I_G | 10 | mA |
| Drain power dissipation | P_D | 100 | mW |
| Junction temperature | T_j | 125 | $^\circ\text{C}$ |
| Storage temperature range | T_{stg} | -55~125 | $^\circ\text{C}$ |

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings. Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).



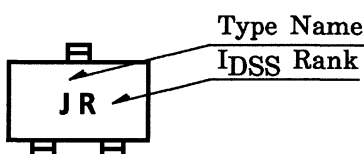
Weight: 0.006 g (typ.)

Electrical Characteristics ($T_a = 25^\circ\text{C}$)

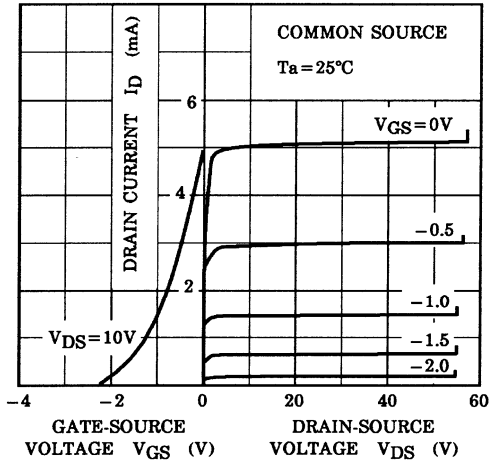
| Characteristics | Symbol | Test Condition | Min | Typ. | Max | Unit |
|------------------------------|---------------------|--|------|------|------|------|
| Gate cut-off current | I_{GSS} | $V_{GS} = -30$ V, $V_{DS} = 0$ | — | — | -1.0 | nA |
| Gate-drain breakdown voltage | $V_{(BR)GDS}$ | $V_{DS} = 0$, $I_G = -100$ μA | -50 | — | — | V |
| Drain current | I_{DSS} (Note) | $V_{DS} = 10$ V, $V_{GS} = 0$ | 0.3 | — | 6.5 | mA |
| Gate-source cut-off voltage | $V_{GS(OFF)}$ | $V_{DS} = 10$ V, $I_D = 0.1$ μA | -0.4 | — | -5.0 | V |
| Forward transfer admittance | $ Y_{fs} $ | $V_{DS} = 10$ V, $V_{GS} = 0$, $f = 1$ kHz | 1.2 | — | — | mS |
| Input capacitance | C_{iss} | $V_{DS} = 10$ V, $V_{GS} = 0$, $f = 1$ MHz | — | 8.2 | — | pF |
| Reverse transfer capacitance | C_{rss} | $V_{GD} = -10$ V, $I_D = 0$, $f = 1$ MHz | — | 2.6 | — | pF |
| Noise figure | NF | $V_{DS} = 15$ V, $V_{GS} = 0$ $R_G = 100$ k Ω , $f = 120$ Hz | — | 0.5 | — | dB |

Note: I_{DSS} classification R: 0.30~0.75 mA, O: 0.60~1.40 mA, Y: 1.2~3.0 mA, GR: 2.6~6.5 mA

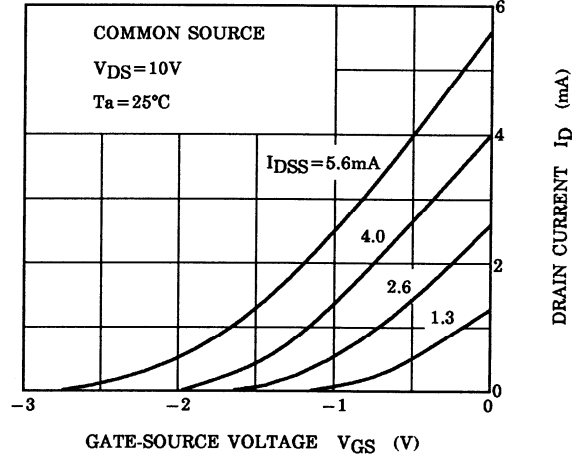
Marking



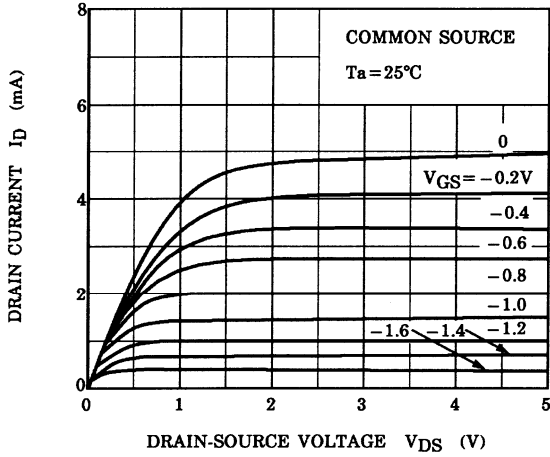
STATIC CHARACTERISTICS



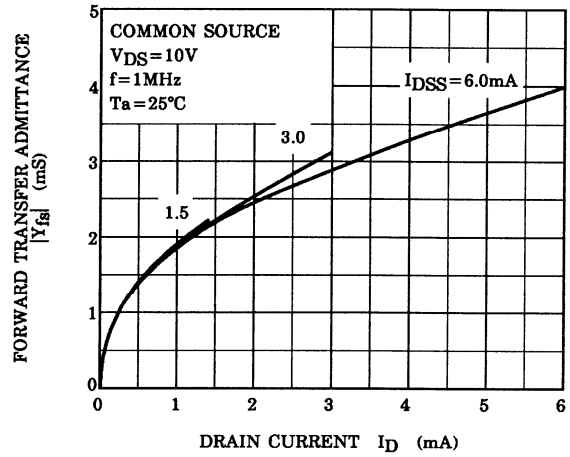
$I_D - V_{GS}$



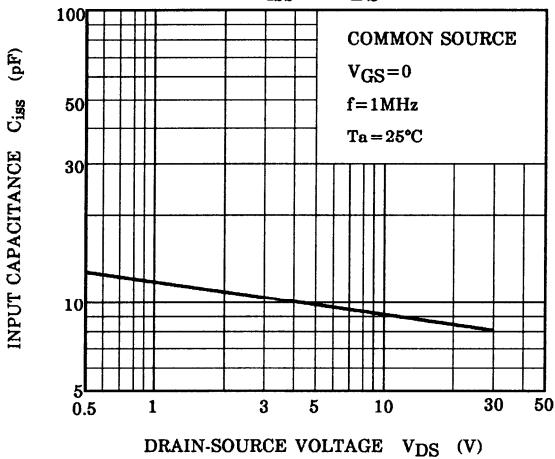
$I_D - V_{DS}$ (LOW VOLTAGE REGION)



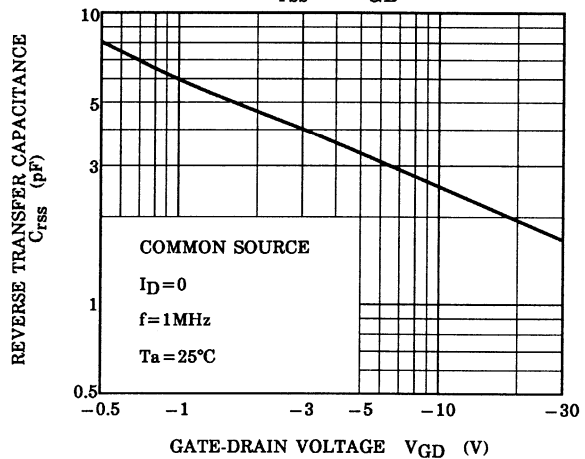
$|Y_{fs}| - I_D$

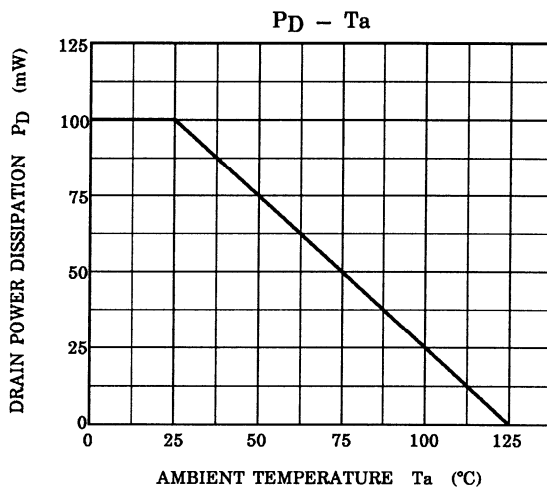
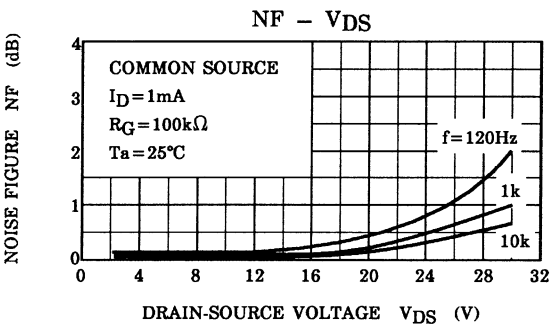
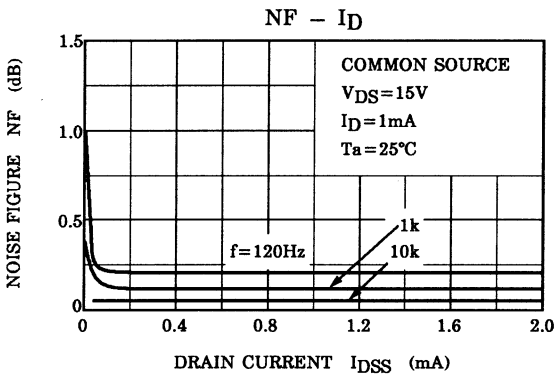
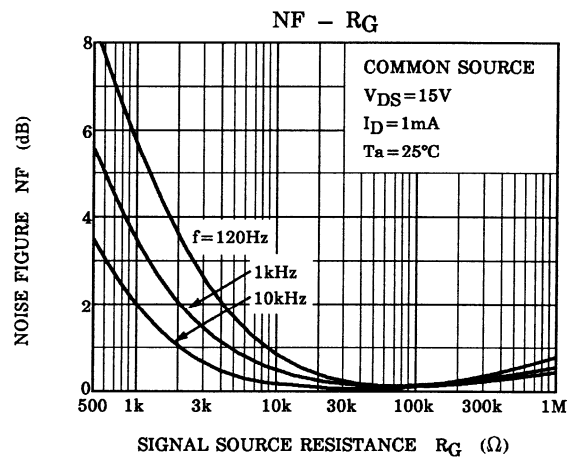
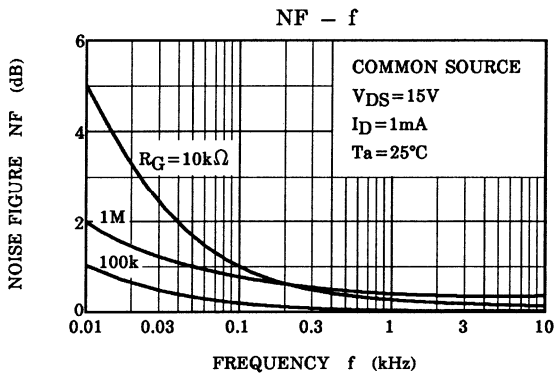
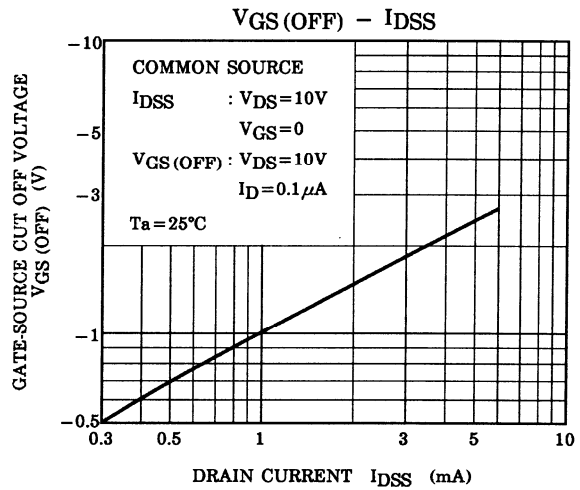
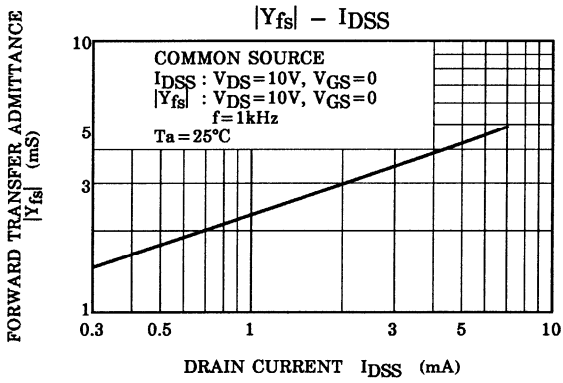


$C_{iss} - V_{DS}$



$C_{rss} - V_{GD}$





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