

TOSHIBA Field Effect Transistor Silicon N Channel Junction Type

2SK118

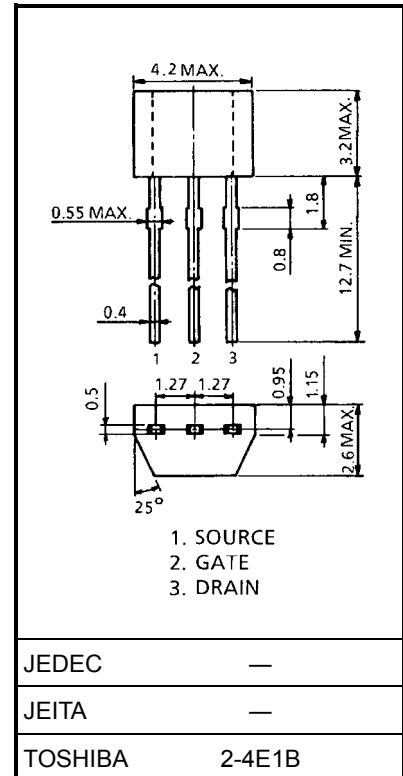
General Purpose and Impedance Converter and Condenser Microphone Applications

- High breakdown voltage: $V_{GDS} = -50$ V
- High input impedance: $I_{GSS} = -1$ nA (max) ($V_{GS} = -30$ V)
- Low noise: $NF = 0.5$ dB (typ.) ($R_G = 100$ k Ω , $f = 120$ Hz)
- Small package

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 | $^\circ\text{C}$ |

Unit: mm



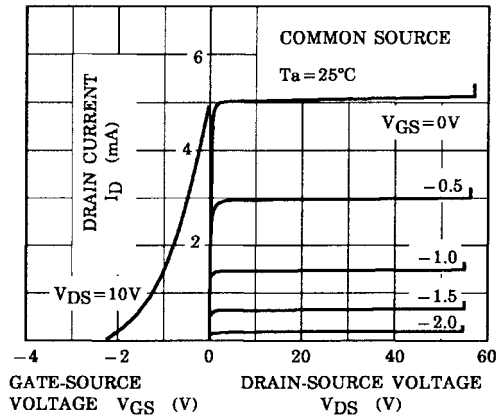
Weight: 0.13 g (typ.)

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

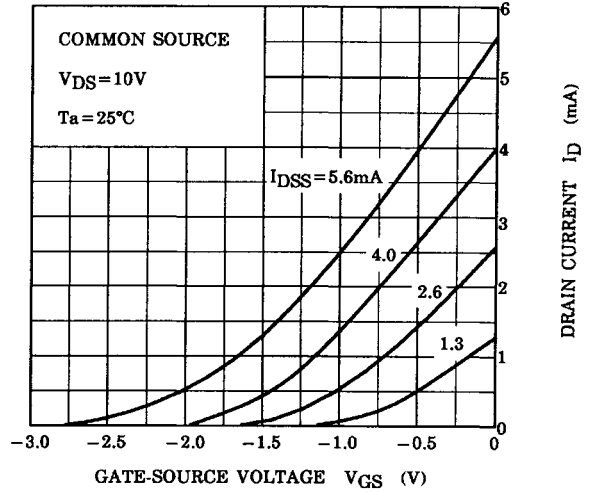
| Characteristics | Symbol | Test Condition | Min | Typ. | Max | Unit |
|------------------------------|---------------------|---|------|------|------|------|
| Gate cut-off current | I_{GSS} | $V_{GS} = -30$ V, $V_{DS} = 0$ | — | — | -1.0 | nA |
| Gate-drain breakdown voltage | $V_{(BR)GDS}$ | $V_{DS} = 0$, $I_G = -100$ 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 | 5.0 | dB |

Note: I_{DSS} classification R: 0.3~0.75 mA, O: 0.6~1.4 mA, Y: 1.2~3.0 mA, GR: 2.6~6.5 mA

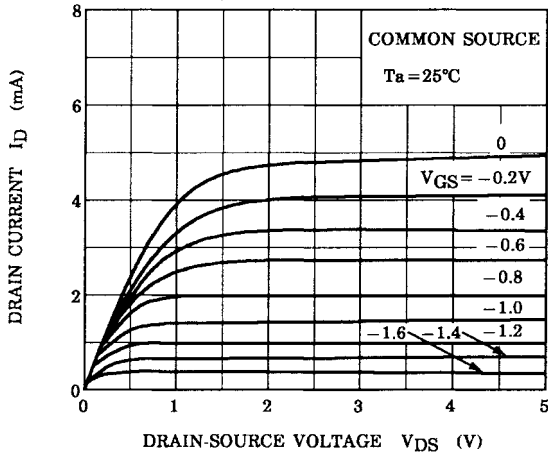
STATIC CHARACTERISTICS



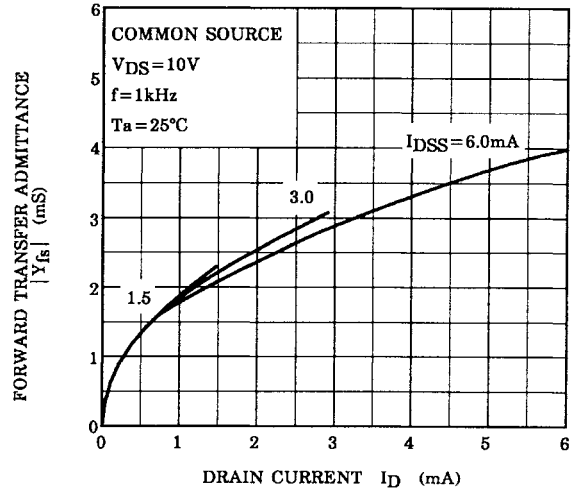
ID - VGS



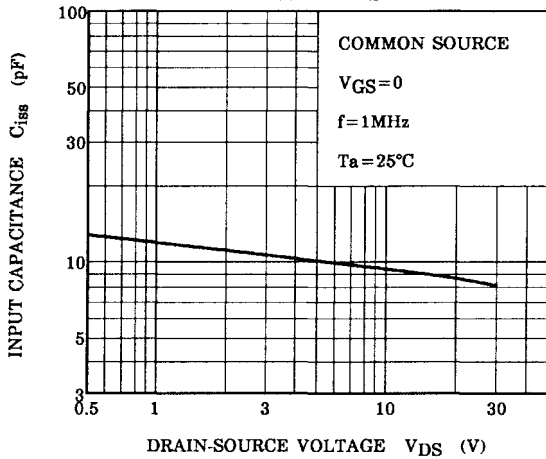
ID - VDS (LOW VOLTAGE REGION)



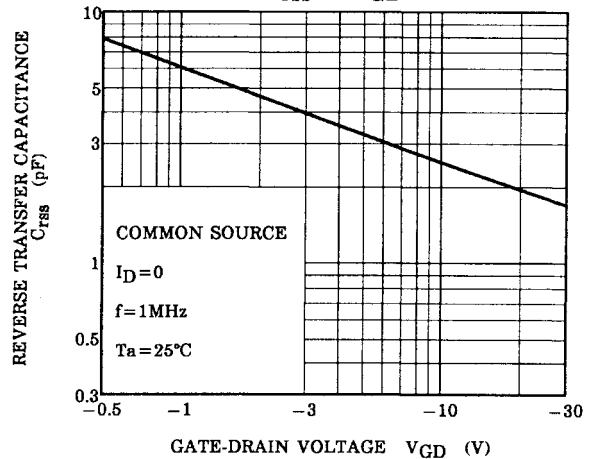
|Yfs| - ID

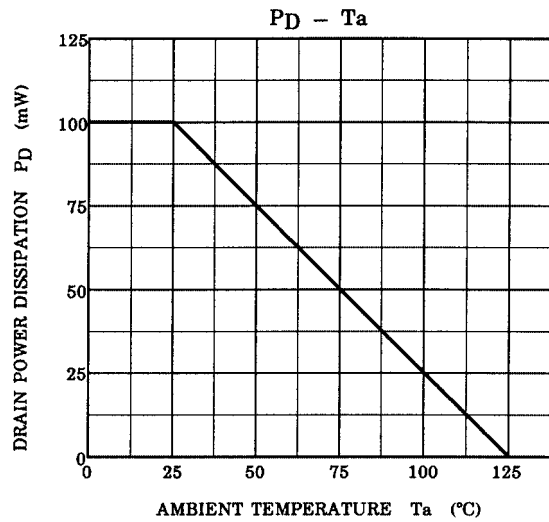
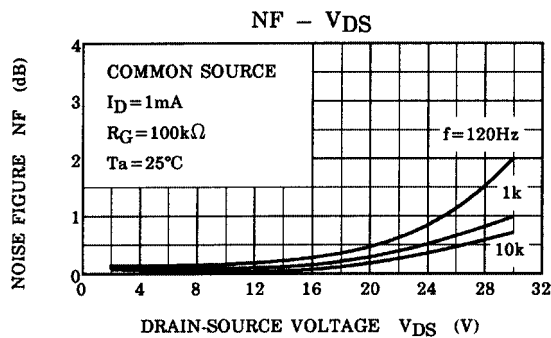
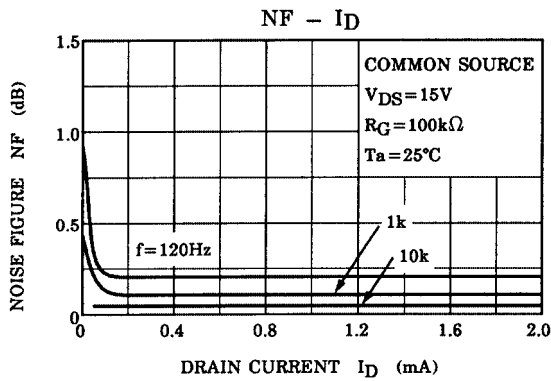
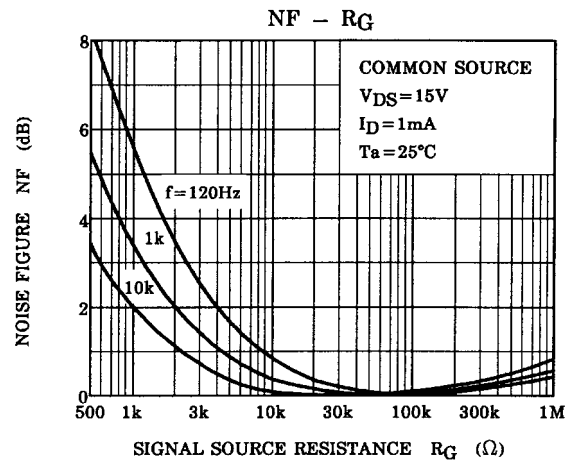
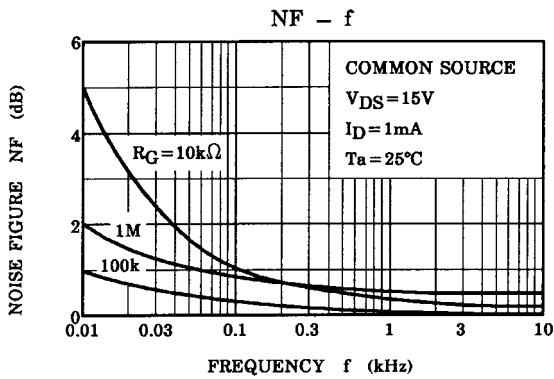
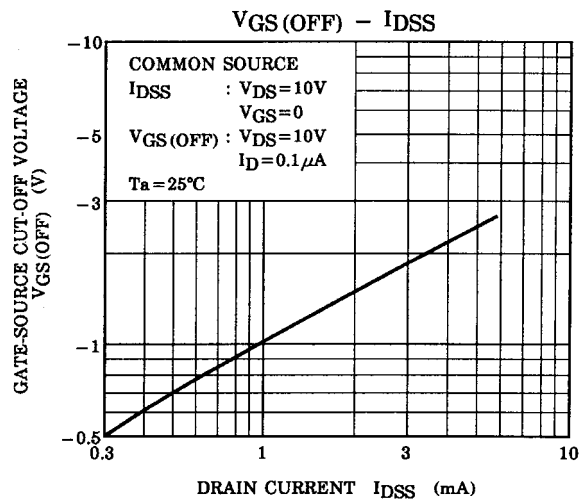
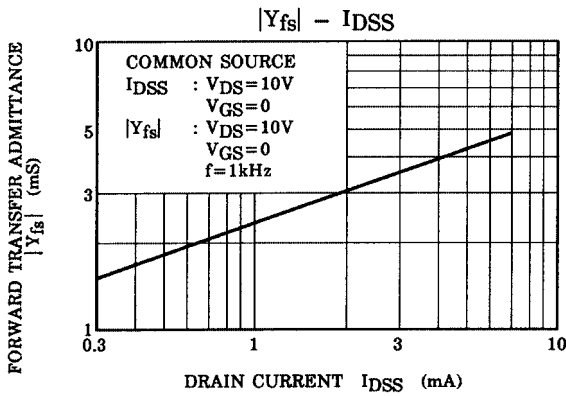


Ciss - VDS



Crss - VGD





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