

TOSHIBA Field Effect Transistor Silicon N Channel MOS Type

2SK302

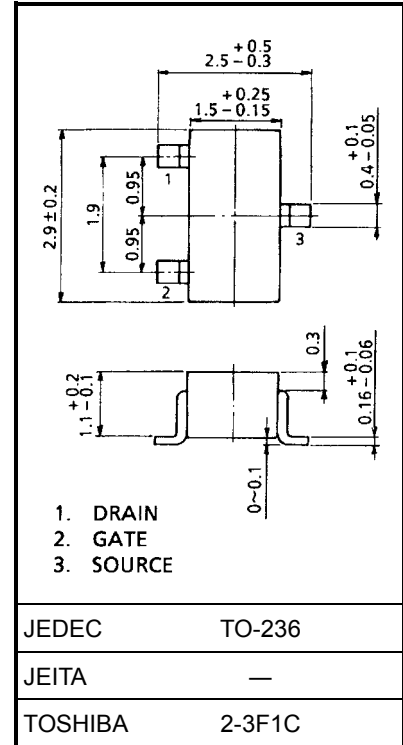
FM Tuner, VHF RF Amplifier Applications

Unit: mm

- Low reverse transfer capacitance: $C_{rss} = 0.035$ pF (typ.)
- Low noise figure: $NF = 1.7$ dB (typ.)
- High power gain: $G_{ps} = 28$ dB (typ.)
- Recommend operation voltage: 5~15 V

Maximum Ratings (Ta = 25°C)

| Characteristics | Symbol | Rating | Unit |
|-------------------------|-----------|---------|------|
| Drain-source voltage | V_{DS} | 20 | V |
| Gate-source voltage | V_{GS} | ±5 | V |
| Drain current | I_D | 30 | mA |
| Drain power dissipation | P_D | 150 | mW |
| Channel temperature | T_{ch} | 125 | °C |
| Storage temperature | T_{stg} | -55~125 | °C |

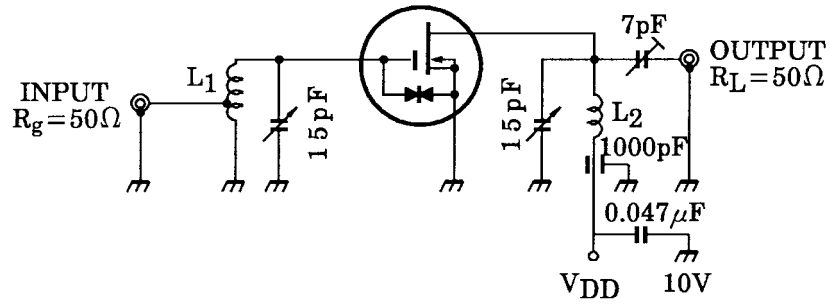


Weight: 0.012 g (typ.)

Electrical Characteristics (Ta = 25°C)

| Characteristics | Symbol | Test Condition | Min | Typ. | Max | Unit |
|------------------------------|---------------------|--|-----|-------|-------|------|
| Gate leakage current | I_{GSS} | $V_{DS} = 0$ V, $V_{GS} = \pm 5$ V | — | — | ±50 | nA |
| Drain-source voltage | V_{DSX} | $V_{GS} = -4$ V, $I_D = 100$ μA | 20 | — | — | V |
| Drain current | I_{DSS} (Note) | $V_{DS} = 10$ V, $V_{GS} = 0$ V | 1.5 | — | 14 | mA |
| Gate-source cut-off voltage | $V_{GS(OFF)}$ | $V_{DS} = 10$ V, $I_D = 100$ μA | — | — | -2.5 | V |
| Forward transfer admittance | $ Y_{fs} $ | $V_{DS} = 10$ V, $V_{GS} = 0$ V, $f = 1$ kHz | — | 10 | — | mS |
| Input capacitance | C_{iss} | $V_{DS} = 10$ V, $V_{GS} = 0$ V, $f = 1$ MHz | — | 3.0 | — | pF |
| Reverse transfer capacitance | C_{rss} | | — | 0.035 | 0.050 | pF |
| Power gain | G_{PS} | $V_{DS} = 10$ V, $V_{GS} = 0$ V, $f = 100$ MHz (Figure 1) | — | 28 | — | dB |
| Noise figure | NF | | — | 1.7 | 3.0 | dB |

Note: I_{DSS} classification O: 1.5~3.5 mA, Y: 3.0~7.0 mA, GR: 6.0~14.0 mA

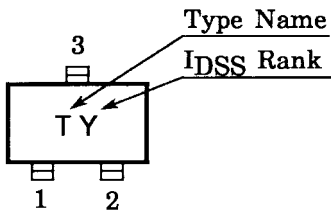


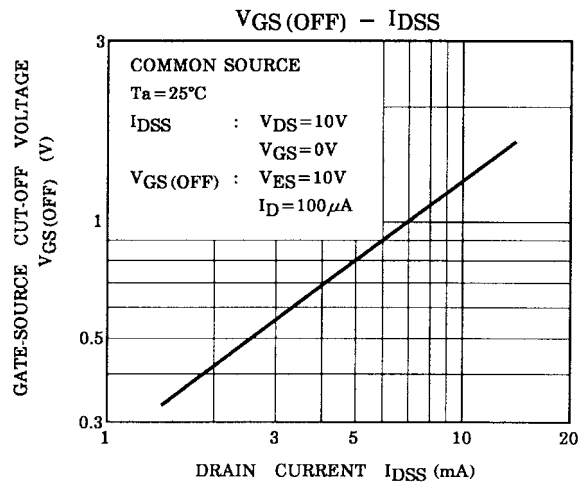
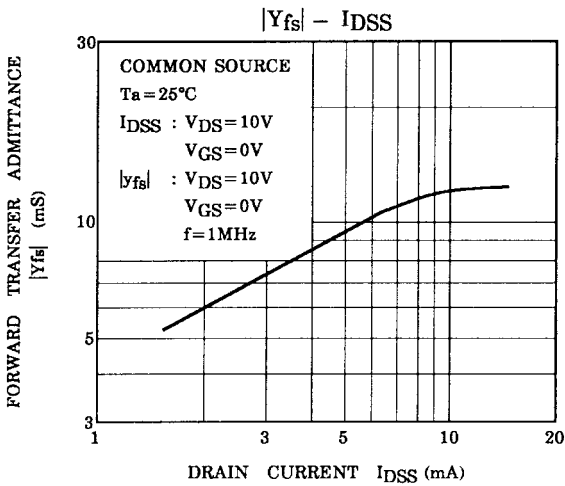
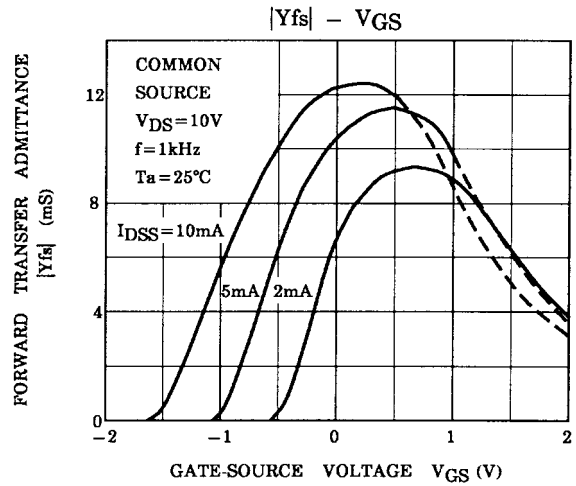
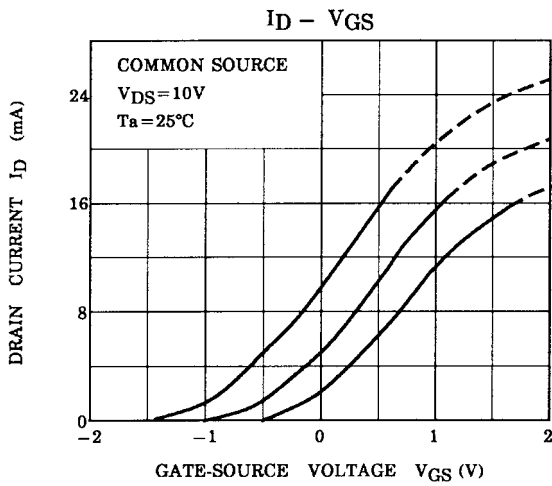
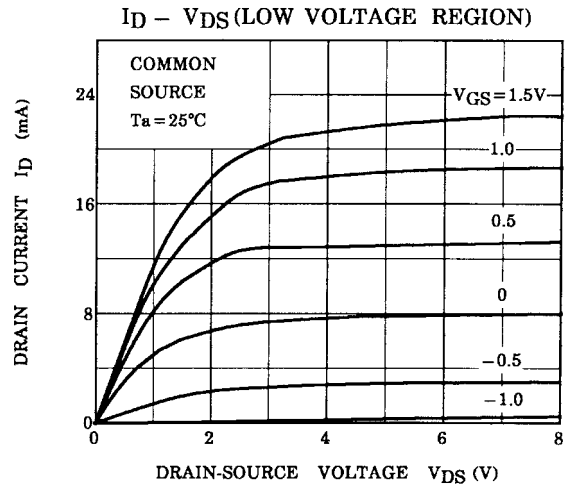
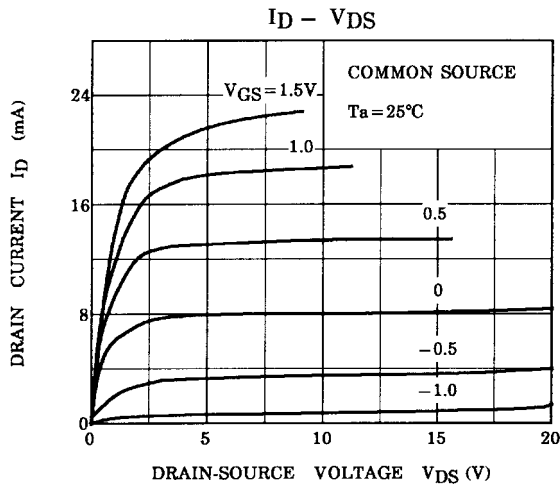
L1: 1.0 mmφ silver plated copper wire 4.0 T, 8 mmφ ID TAP at 1.0 T from coil end

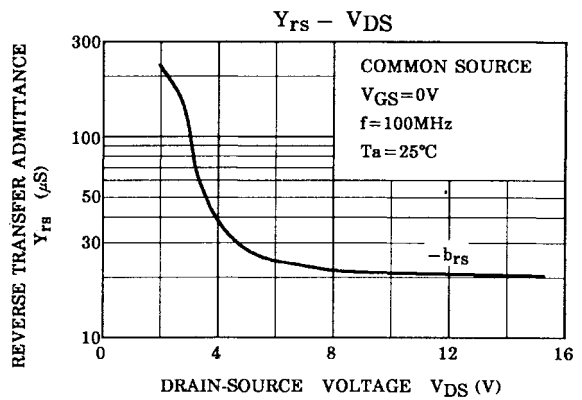
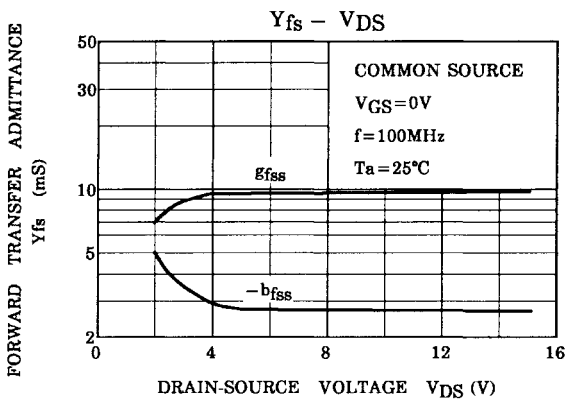
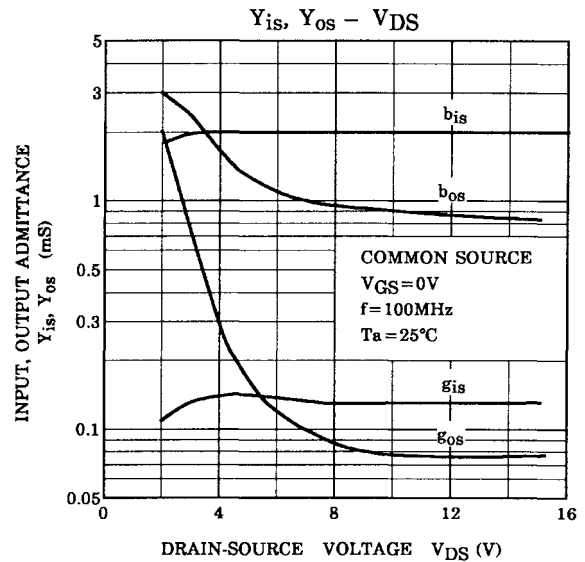
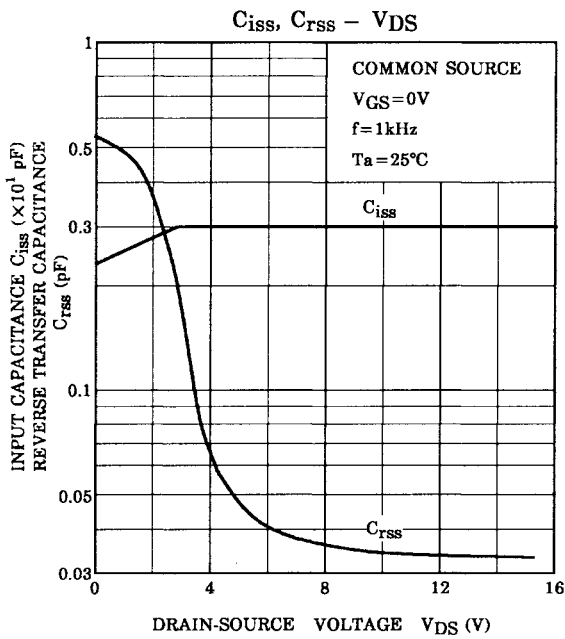
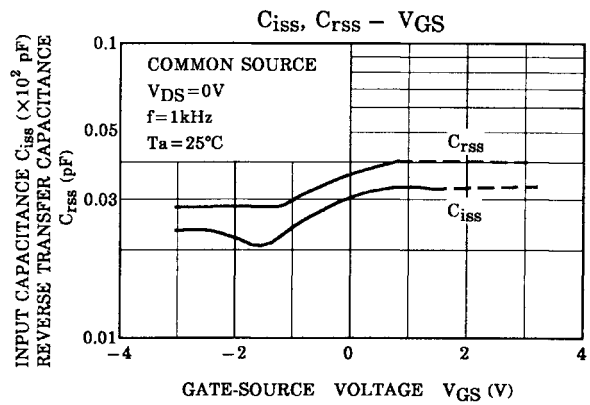
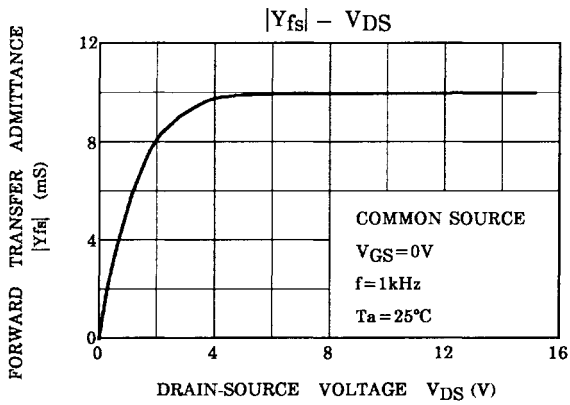
L2: 1.0 mmφ silver plated copper wire 3.0 T, 8 mmφ ID, 10 mm length

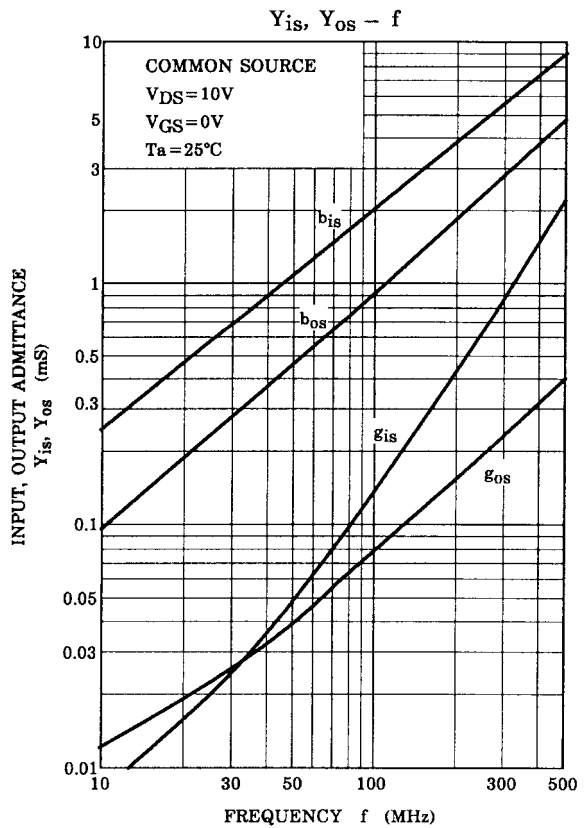
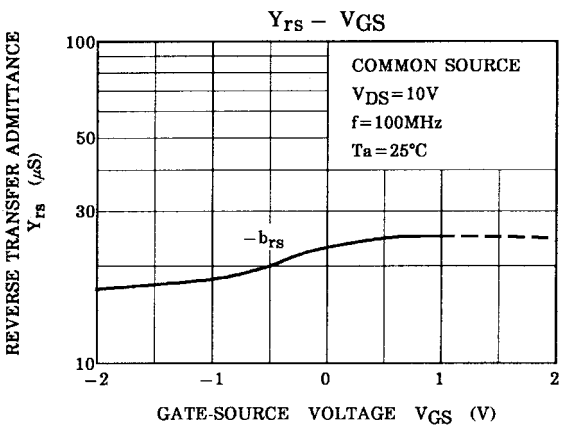
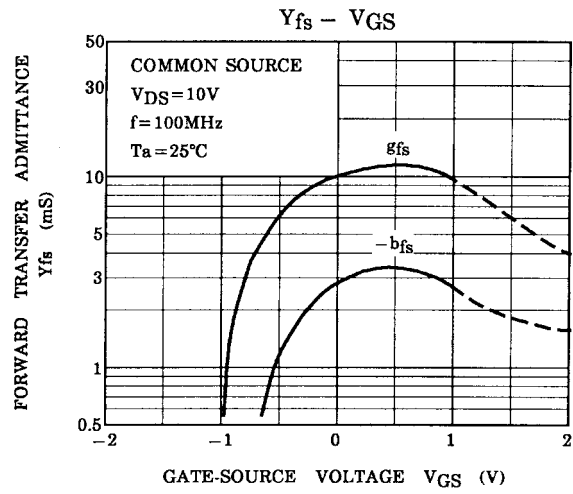
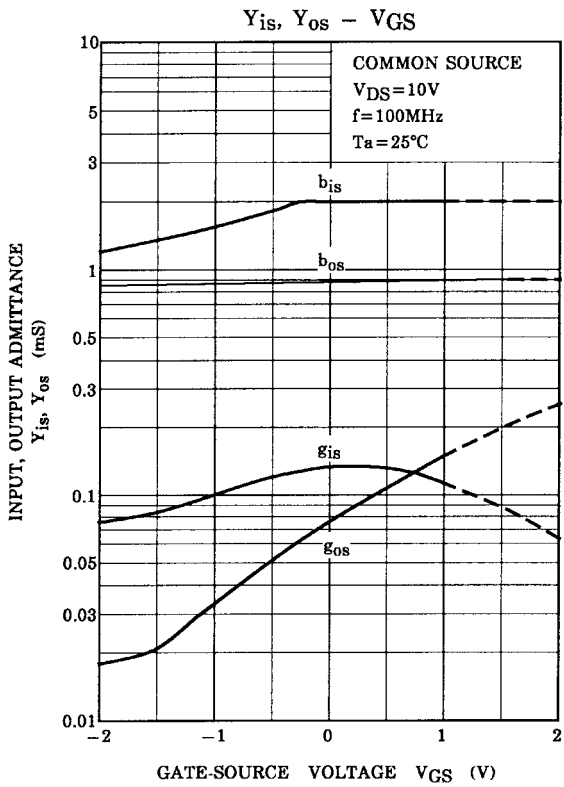
Figure 1 Gps, NF Test Circuit

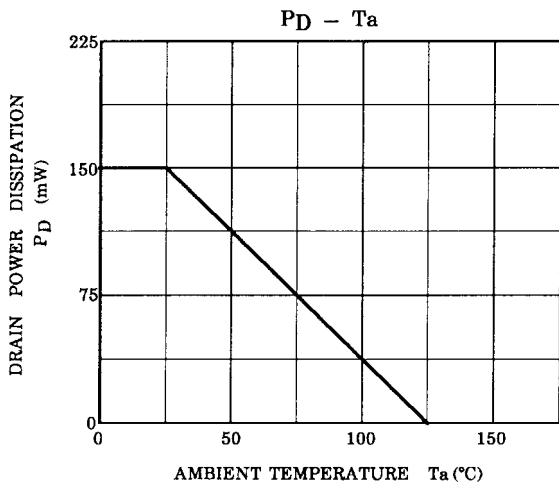
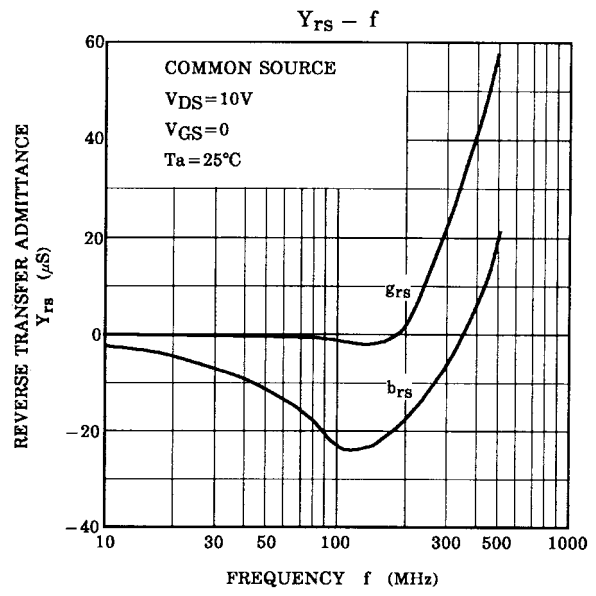
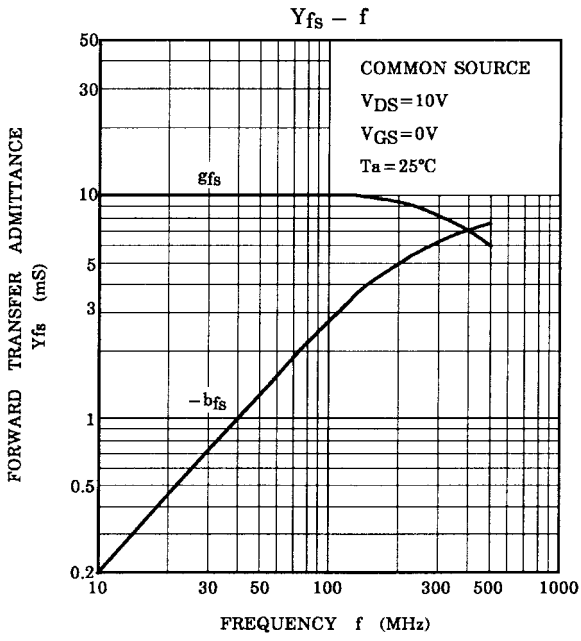
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