TOSHIBA Field Effect Transistor Silicon N Channel MOS Type

2SK241

FM Tuner, VHF and RF Amplifier Applications

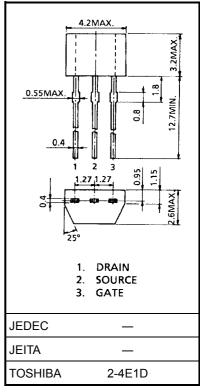
Unit: mm

 $\bullet~$ Low reverse transfer capacitance: $C_{\mbox{\scriptsize rss}}$ = 0.035 pF (typ.)

Low noise figure: NF = 1.7dB (typ.)
High power gain: GPS = 28dB (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} | 200 | mW |
| Channel temperature | T _{ch} | 125 | °C |
| Storage temperature range | T _{stg} | -55~125 | °C |

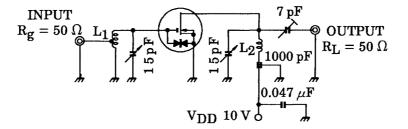


Weight: 0.13 g (typ.)

Electrical Characteristics (Ta = 25°C)

| Characteristics | Symbol | Test Condition | Min | Тур. | Max | Unit |
|------------------------------|-----------------------|--|-----|-------|-------|------|
| Gate leakage current | I _{GSS} | $V_{DS} = 0, V_{GS} = \pm 5 V$ | _ | _ | ±50 | nA |
| Drain-source voltage | V_{DSX} | $V_{GS} = -4 \text{ V}, I_D = 100 \mu\text{A}$ | 20 | _ | _ | V |
| Drain current | I _{DSS} | $V_{DS} = 10 \text{ V}, V_{GS} = 0$ (Note) | 1.5 | _ | 14 | mA |
| Gate-source cut-off voltage | V _{GS (OFF)} | $V_{DS} = 10 \text{ V}, I_D = 100 \mu\text{A}$ | _ | _ | -2.5 | V |
| Forward transfer admittance | Y _{fs} | $V_{DS} = 10 \text{ V}, V_{GS} = 0, f = 1 \text{ kHz}$ | _ | 10 | _ | mS |
| Input capacitance | C _{iss} | V _{DS} = 10 V, V _{GS} = 0, f = 1 MHz | _ | 3.0 | _ | pF |
| Reverse transfer capacitance | C _{rss} | VDS = 10 V, VGS = 0, 1 = 1 WH 12 | _ | 0.035 | 0.050 | pF |
| Power gain | G _{ps} | V _{DS} = 10 V, V _{GS} = 0, f = 100 MHz (Figure 1) | _ | 28 | _ | dB |
| Noise figure | NF | | | 1.7 | 3.0 | dB |

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

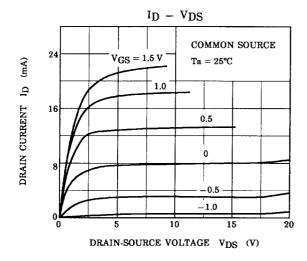


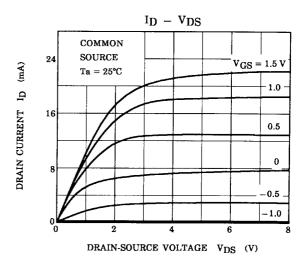
 $L_1{:}~1.0~mm_{\varphi}$ silver plated copper wire 4.0 T, 8 mm $_{\varphi}$ ID TAP at 1.0 T from coil end

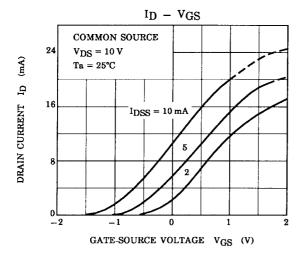
 L_2 : 1.0 mm ϕ silver plated copper wire 3.0 T, 8 mm ϕ ID, 10 mm length

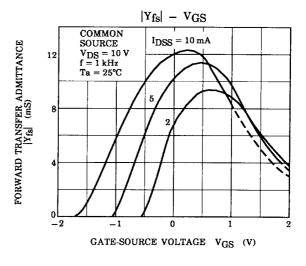
Figure 1 Gps, NF Test Circuit

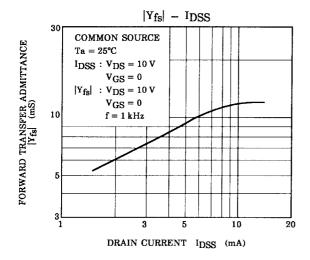
2 2003-03-27

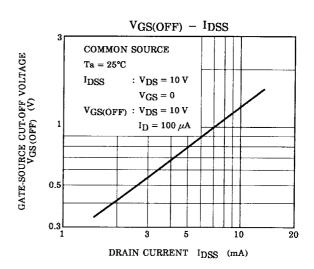




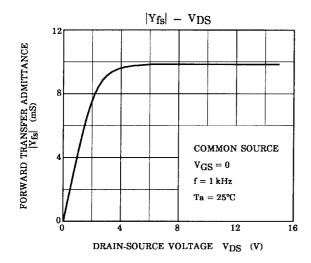


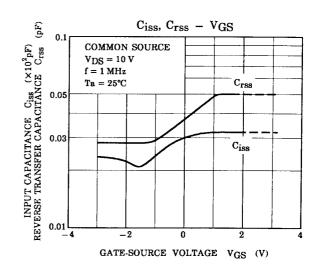


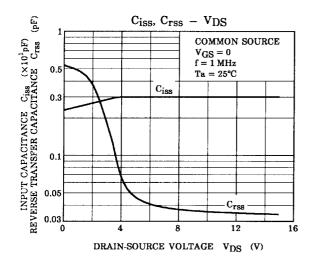


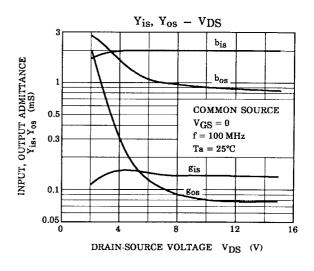


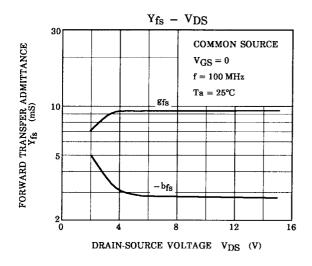
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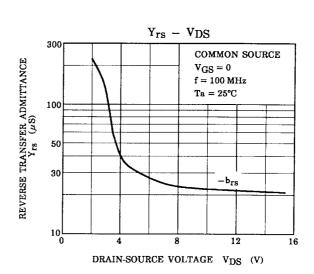




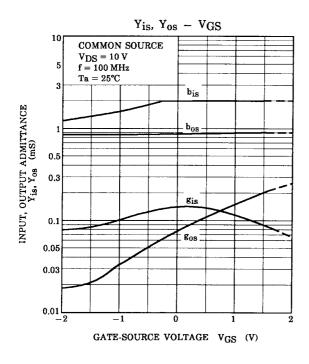


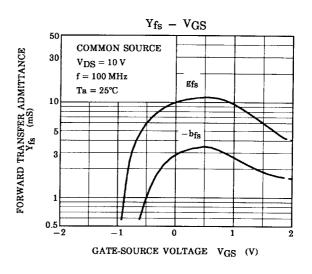


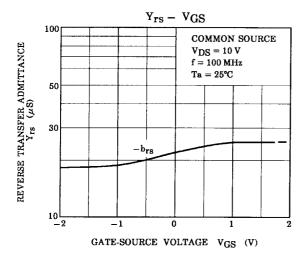


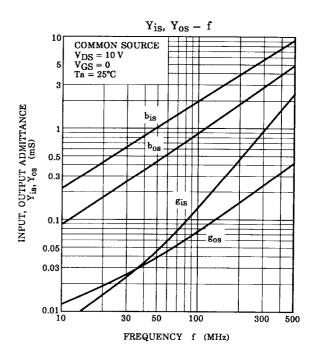


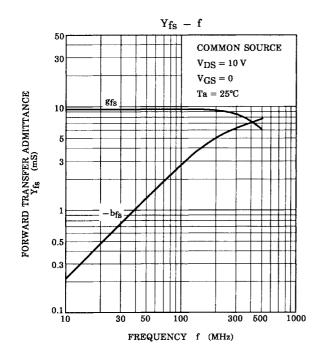
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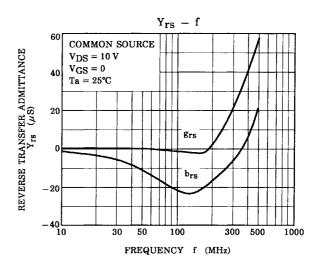


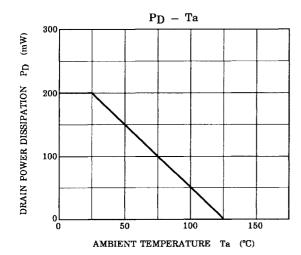












6 2003-03-27

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