TOSHIBA Field Effect Transistor Silicon N Channel MOS Type

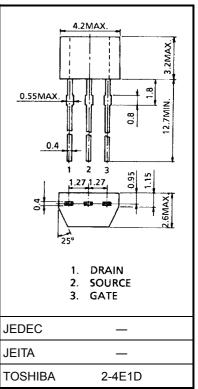
2SK241

FM Tuner, VHF and RF Amplifier Applications

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

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	۱ _D	30	mA
Drain power dissipation	PD	200	mW
Channel temperature	T _{ch}	125	°C
Storage temperature range	T _{stg}	-55~125	°C



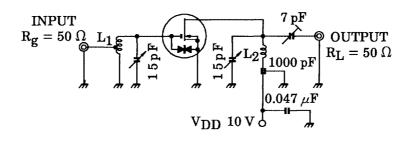
Weight: 0.13 g (typ.)

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}	$V_{GS}=-4~V,~I_D=100~\mu A$	20	_	_	V
Drain current	I _{DSS}	$V_{DS} = 10 \text{ V}, \text{ V}_{GS} = 0$ (Note)	1.5	—	14	mA
Gate-source cut-off voltage	V _{GS (OFF)}	$V_{DS} = 10 \text{ V}, \text{ I}_{D} = 100 \mu\text{A}$	_	—	-2.5	V
Forward transfer admittance	$ Y_{fS} $	$V_{DS} = 10 \text{ V}, \text{ V}_{GS} = 0, \text{ f} = 1 \text{ kHz}$	_	10	_	mS
Input capacitance	C _{iss}	V _{DS} = 10 V, V _{GS} = 0, f = 1 MHz	_	3.0	_	pF
Reverse transfer capacitance	C _{rss}	$v_{\rm DS} = 10$ v, $v_{\rm GS} = 0, 1 = 1$ with		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

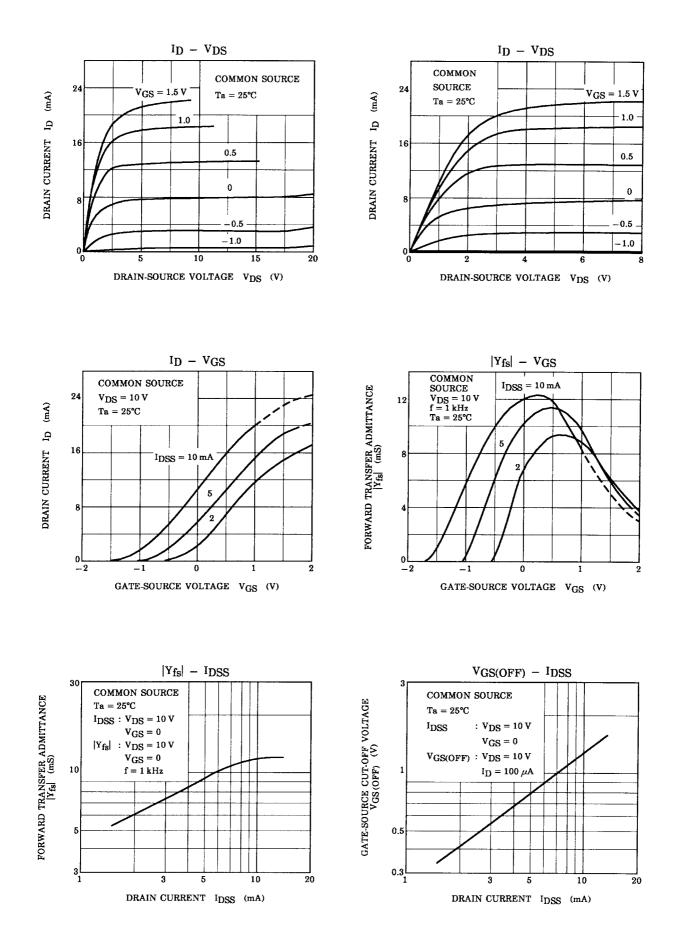
Note: I_{DSS} classification O: 1.5~3.5, Y: 3.0~7.0, GR: 6.0~14.0

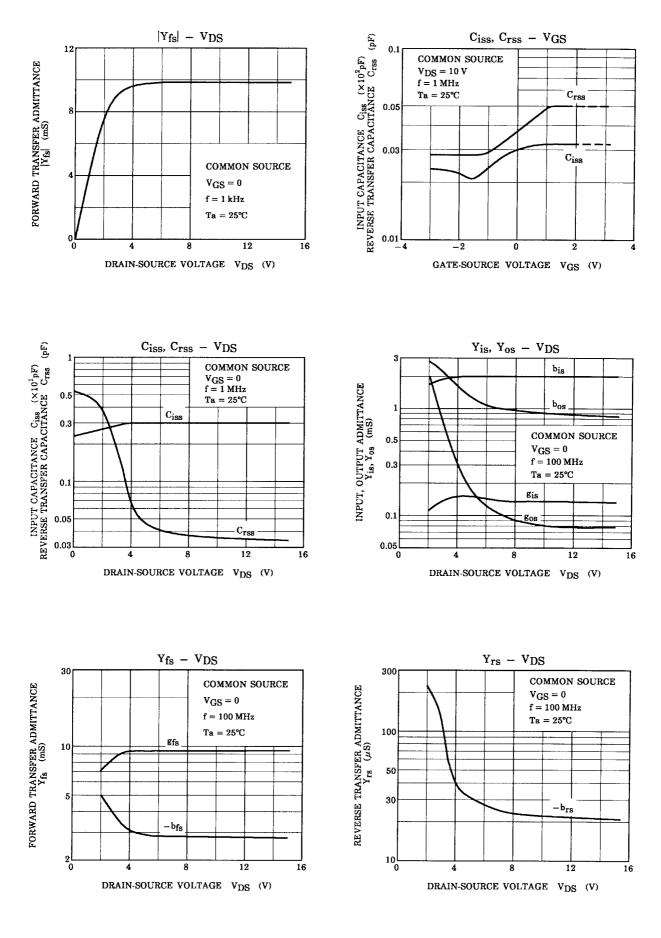
Unit: mm

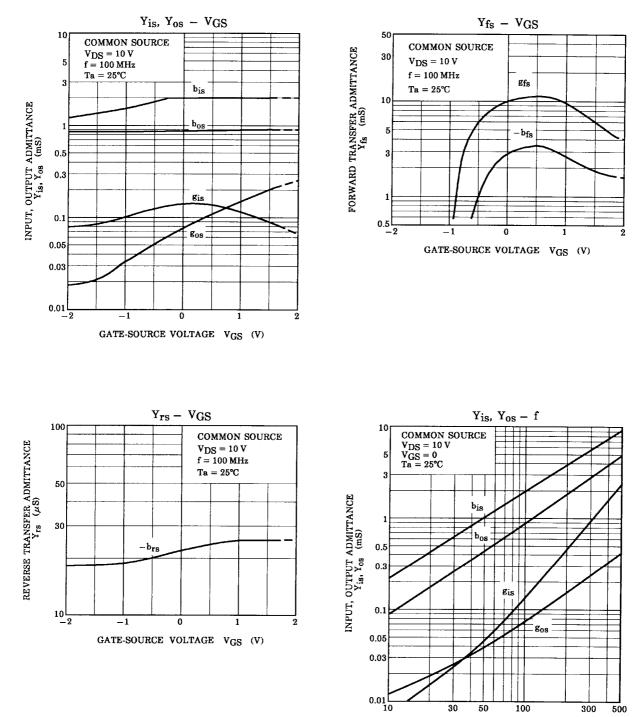


 $L_1:\ 1.0\ mm\phi\ silver\ plated\ copper\ wire\ 4.0\ T,\ 8\ mm\phi\ ID\ TAP\ at\ 1.0\ T\ from\ coil\ end$ $L_2:\ 1.0\ mm\phi\ silver\ plated\ copper\ wire\ 3.0\ T,\ 8\ mm\phi\ ID,\ 10\ mm\ length$

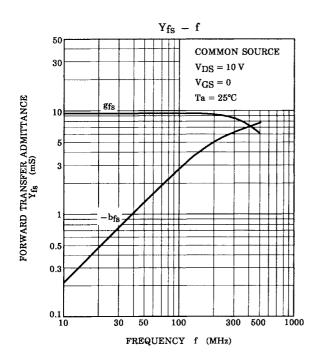
Figure 1 G_{ps}, NF Test Circuit

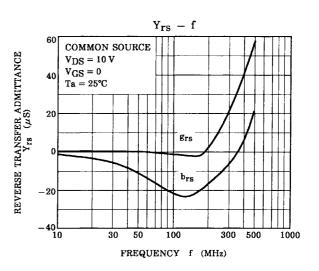


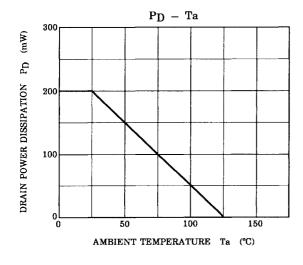




FREQUENCY f (MHz)







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