

TOSHIBA Field Effect Transistor Silicon N Channel MOS Type

2SK241

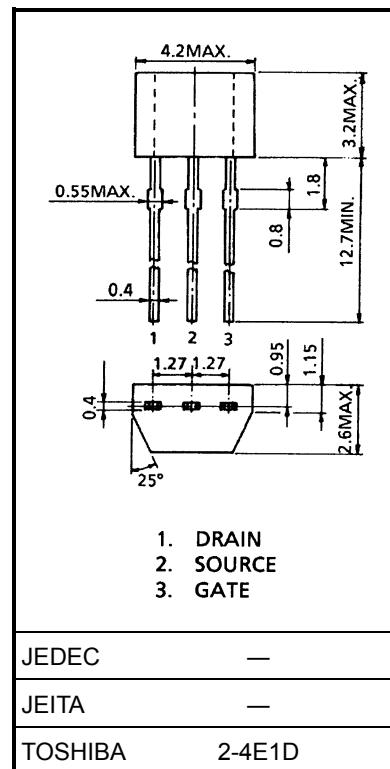
FM Tuner, VHF and RF Amplifier Applications

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	200	mW
Channel temperature	T_{ch}	125	°C
Storage temperature range	T_{stg}	-55~125	°C

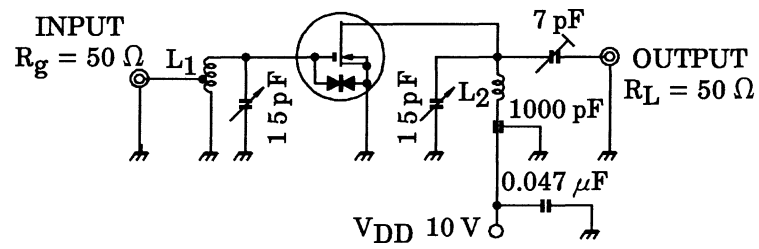


Electrical Characteristics (Ta = 25°C)

Weight: 0.13 g (typ.)

Characteristics	Symbol	Test Condition	Min	Typ.	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, $I_D = 100$ μ A	20	—	—	V
Drain current	I_{DSS}	$V_{DS} = 10$ V, $V_{GS} = 0$ (Note)	1.5	—	14	mA
Gate-source cut-off voltage	$V_{GS(OFF)}$	$V_{DS} = 10$ V, $I_D = 100$ μ A	—	—	-2.5	V
Forward transfer admittance	$ Y_{fs} $	$V_{DS} = 10$ V, $V_{GS} = 0$, $f = 1$ 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}		—	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

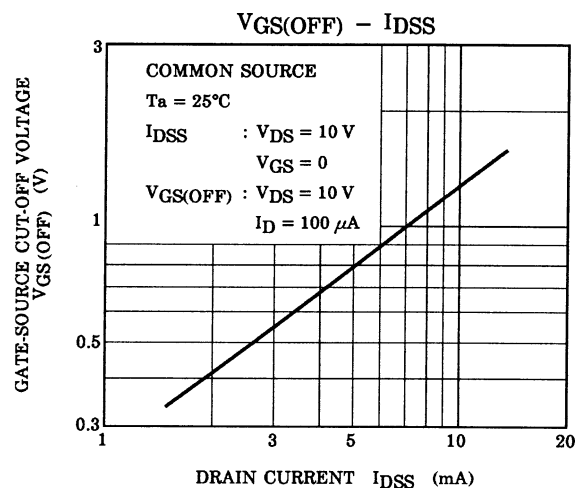
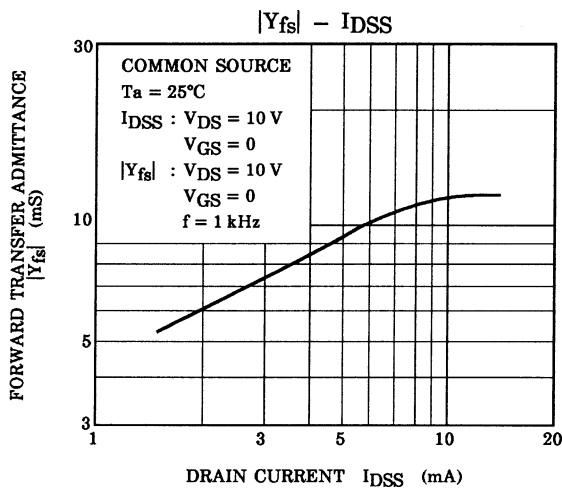
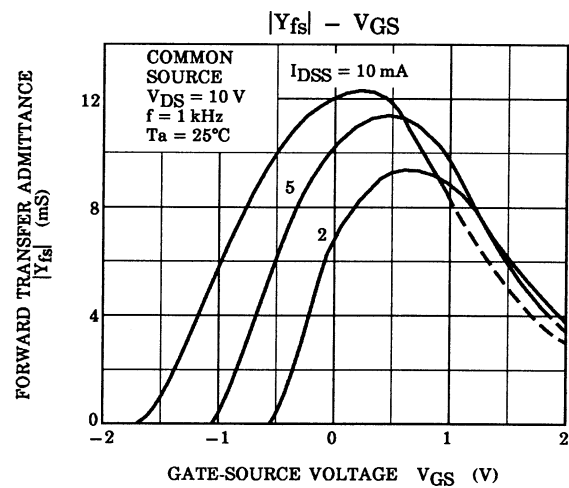
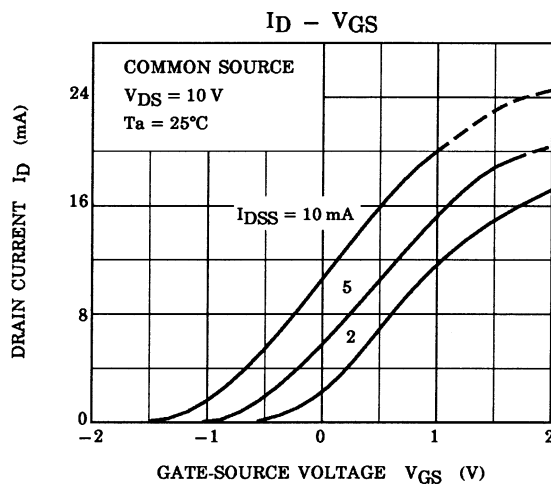
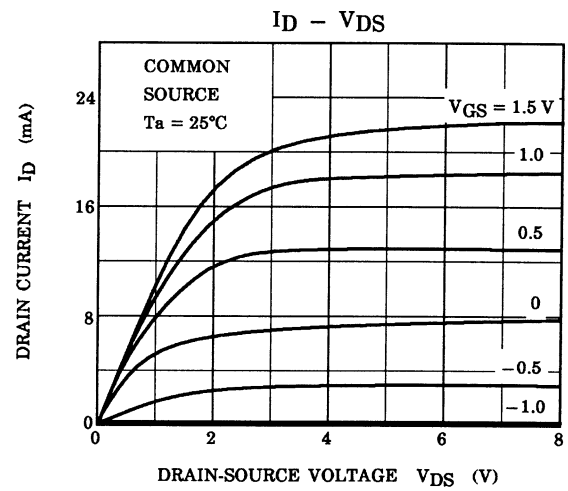
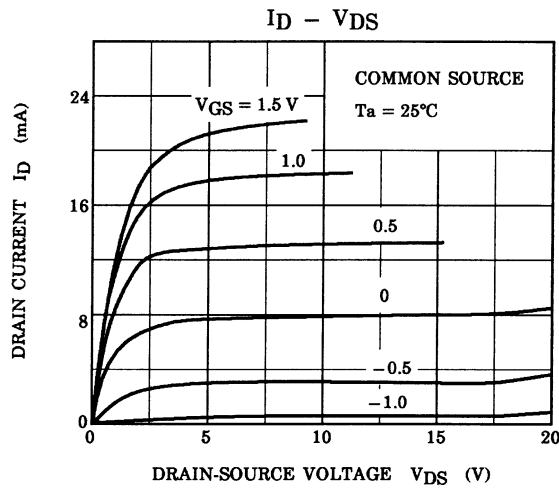
Note: I_{DSS} classification O: 1.5~3.5, Y: 3.0~7.0, GR: 6.0~14.0

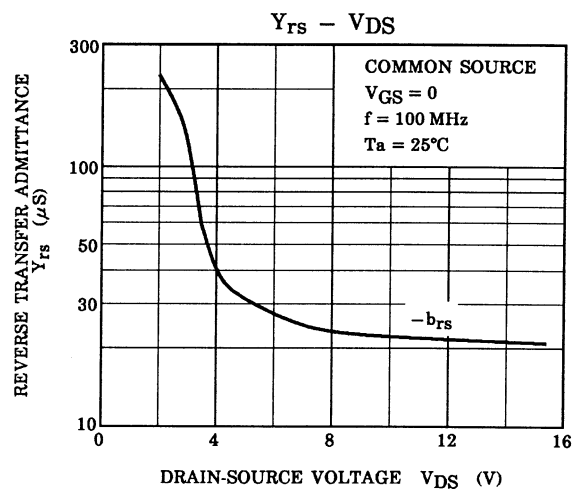
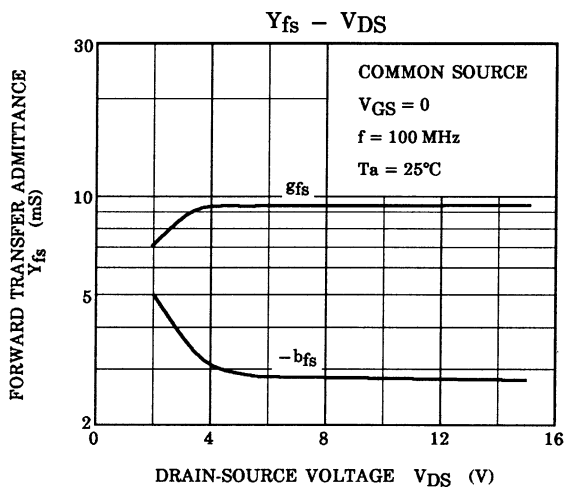
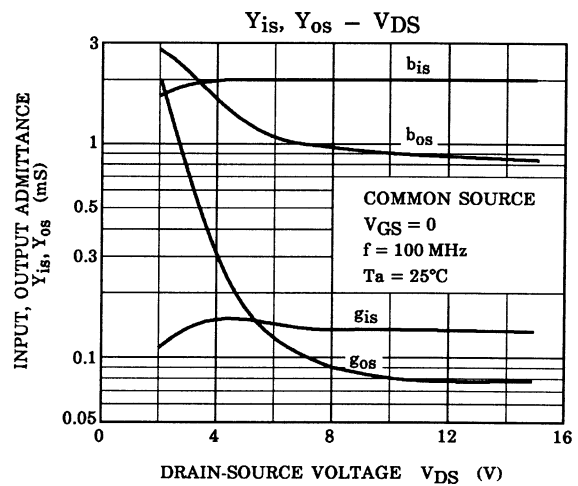
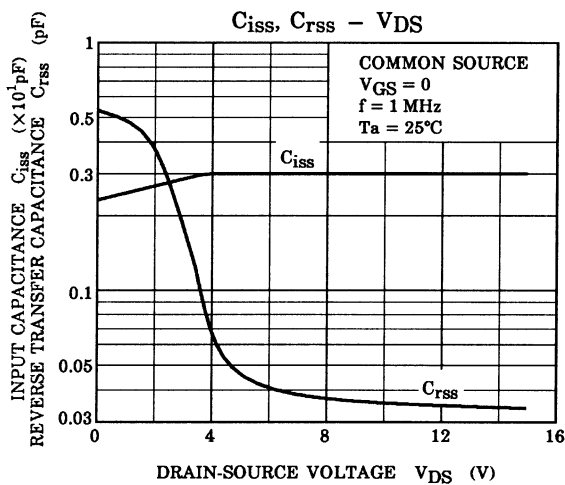
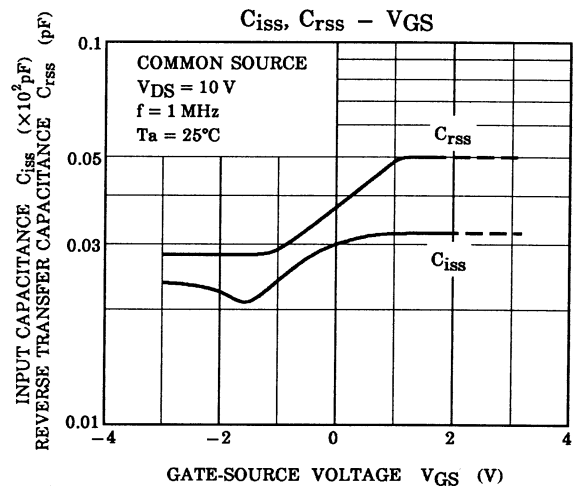
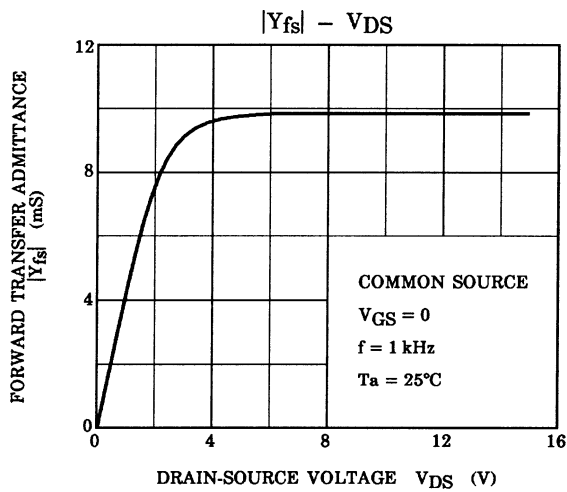


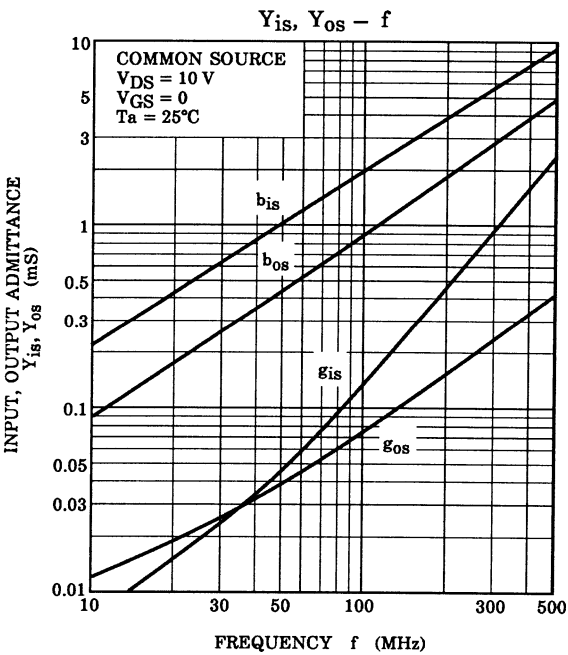
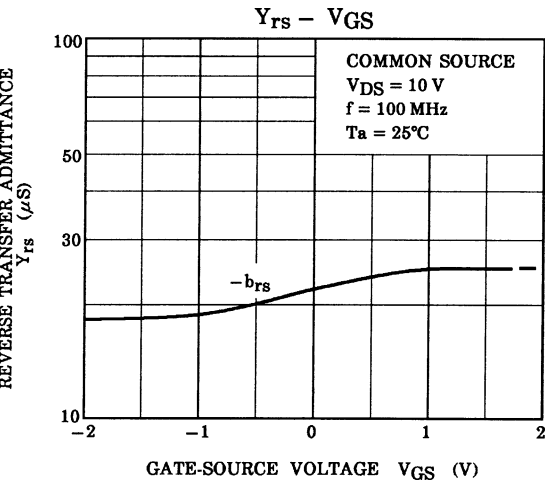
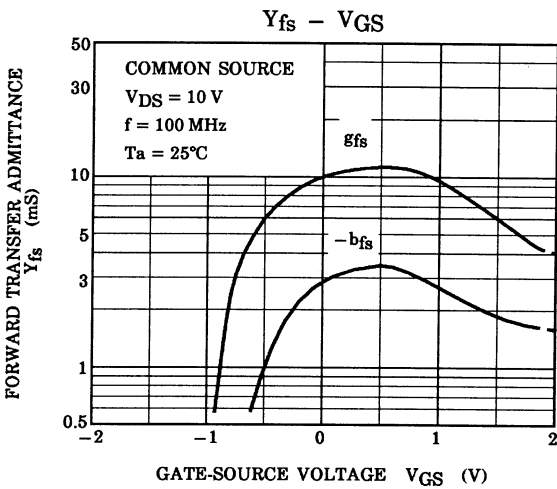
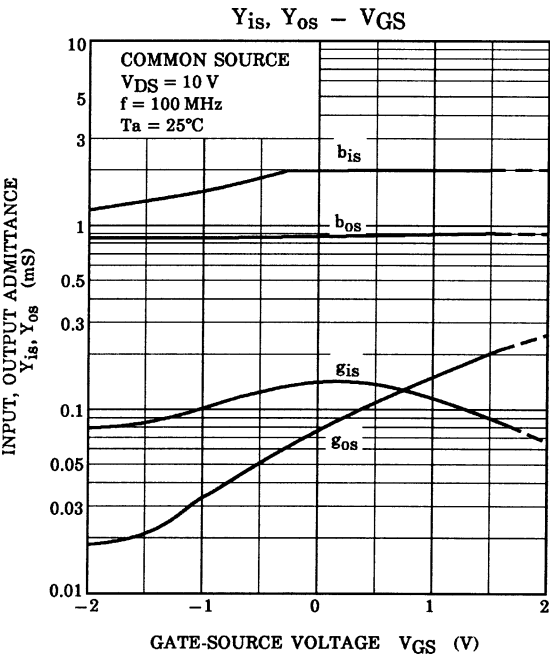
L_1 : 1.0 mm ϕ silver plated copper wire 4.0 T, 8 mm ϕ ID TAP at 1.0 T from coil end

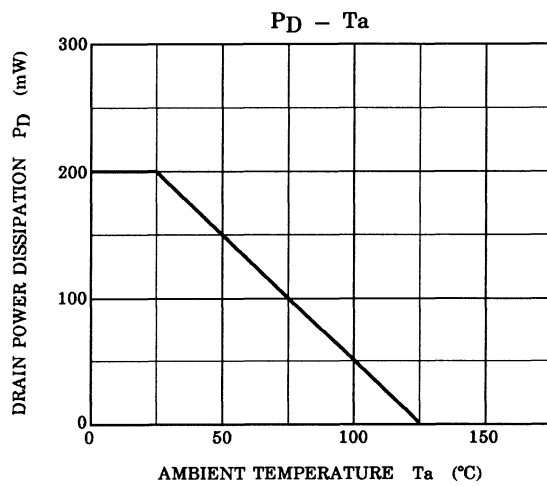
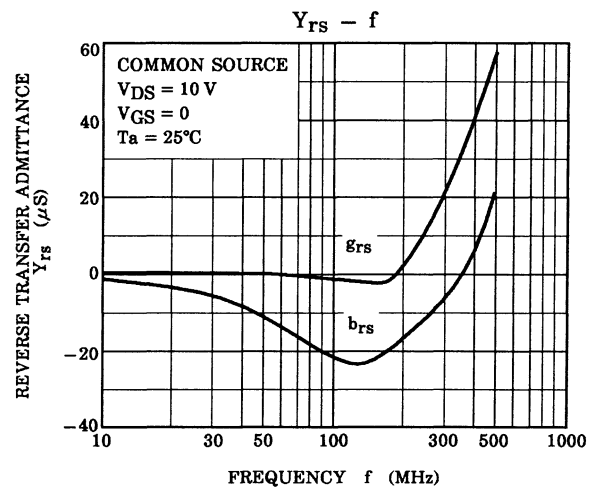
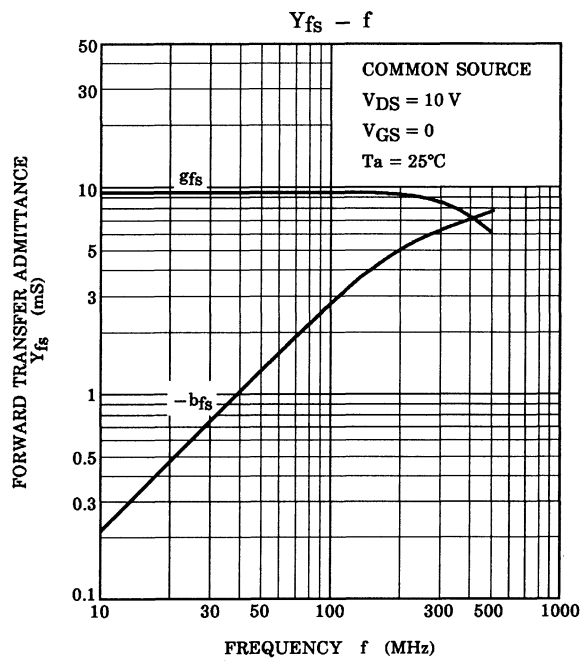
L_2 : 1.0 mm ϕ silver plated copper wire 3.0 T, 8 mm ϕ ID, 10 mm length

Figure 1 G_{ps} , NF Test Circuit









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