

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL MOS TYPE

# 2SK302

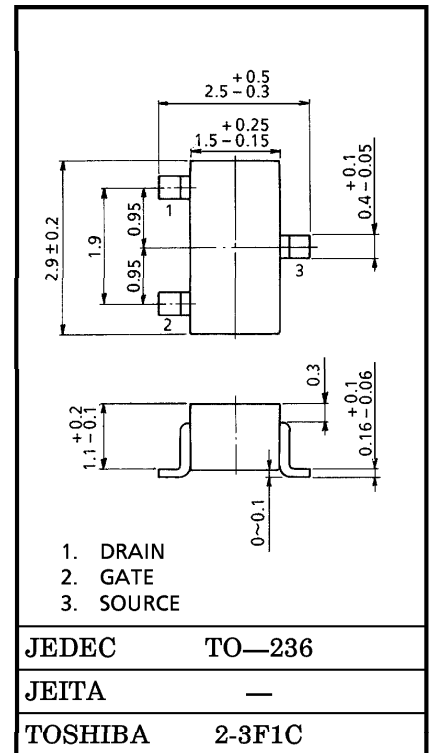
FM TUNER, VHF RF AMPLIFIER APPLICATIONS

Unit in mm

- Low Reverse Transfer Capacitance :  $C_{RSS} = 0.035\text{pF}$  (Typ.)
- Low Noise Figure :  $NF = 1.7\text{dB}$  (Typ.)
- High Power Gain :  $G_{PS} = 28\text{dB}$  (Typ.)
- Recommend Operation Voltage :  $5\sim 15\text{V}$

MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	$V_{DS}$	20	V
Gate-Source Voltage	$V_{GS}$	$\pm 5$	V
Drain Current	$I_D$	30	mA
Drain Power Dissipation	$P_D$	150	mW
Channel Temperature	$T_{ch}$	125	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	$-55\sim 125$	$^\circ\text{C}$



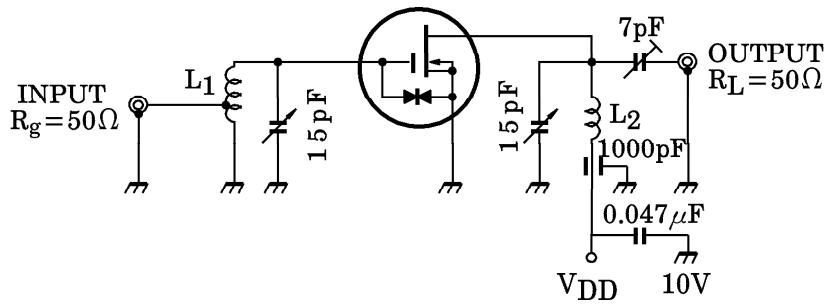
Weight : 0.012g

ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current	$I_{GSS}$	$V_{DS} = 0\text{V}, V_{GS} = \pm 5\text{V}$	—	—	$\pm 50$	nA
Drain-Source Voltage	$V_{DSX}$	$V_{GS} = -4\text{V}, I_D = 100\mu\text{A}$	20	—	—	V
Drain Current	$I_{DSS}$ (Note)	$V_{DS} = 10\text{V}, V_{GS} = 0\text{V}$	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} $	$V_{DS} = 10\text{V}, V_{GS} = 0\text{V}, f = 1\text{kHz}$	—	10	—	mS
Input Capacitance	$C_{iss}$	$V_{DS} = 10\text{V}, V_{GS} = 0\text{V}, f = 1\text{MHz}$	—	3.0	—	pF
Reverse Transfer Capacitance	$C_{rss}$		—	0.035	0.050	pF
Power Gain	$G_{PS}$	$V_{DS} = 10\text{V}, V_{GS} = 0\text{V}, f = 100\text{MHz}$ (Fig. 1)	—	28	—	dB
Noise Figure	NF		—	1.7	3.0	dB

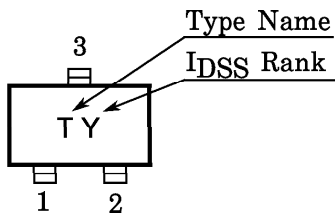
(Note) :  $I_{DSS}$  Classification    O : 1.5~3.5mA,    Y : 3.0~7.0mA,    GR : 6.0~14.0mA

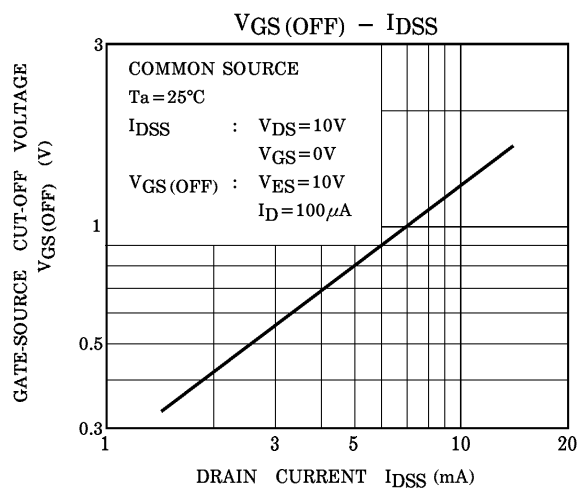
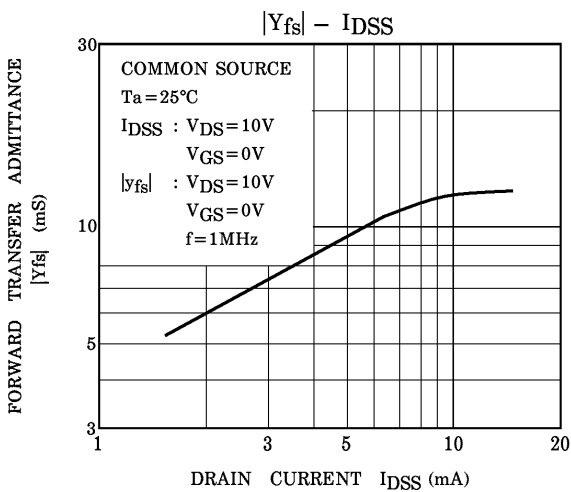
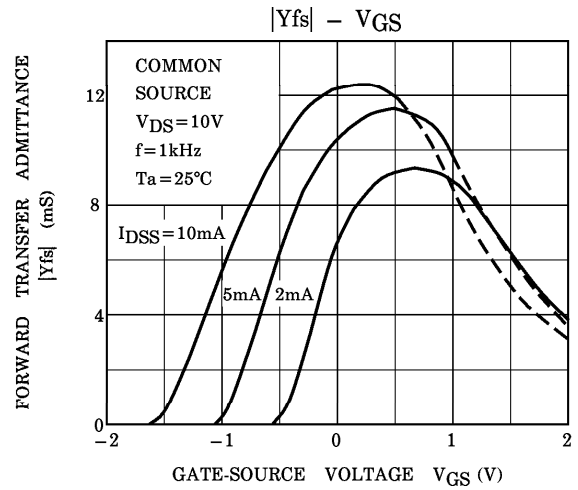
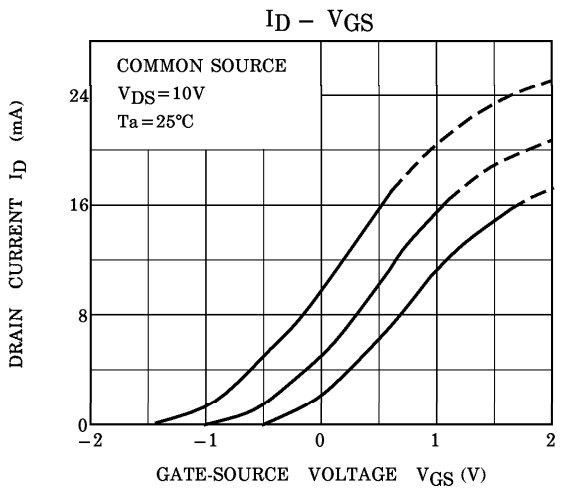
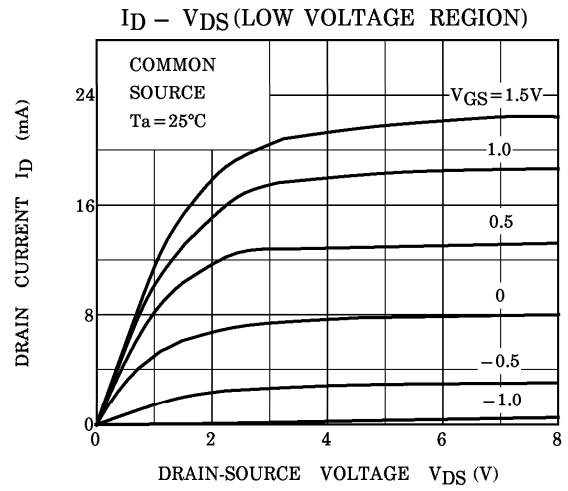
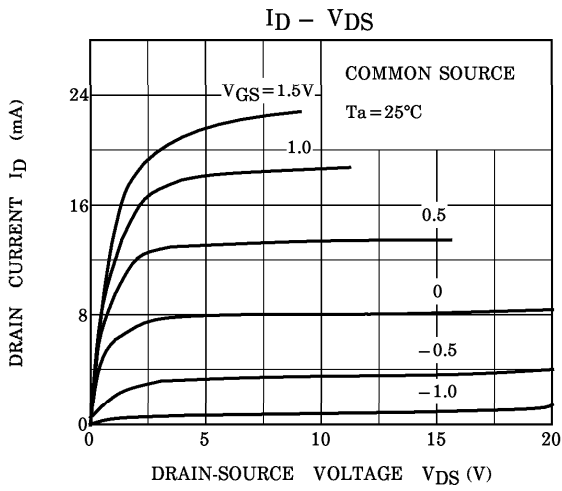
Fig. 1  $G_{ps}$ , NF TEST CIRCUIT

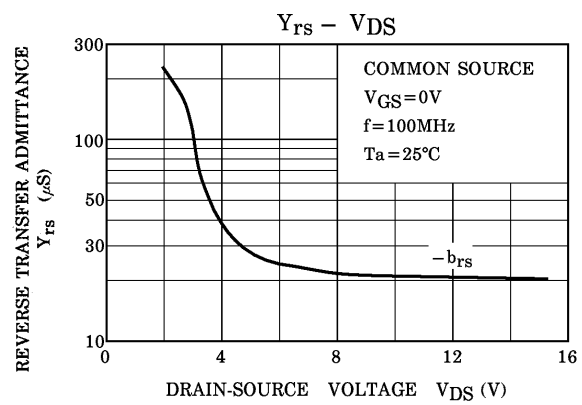
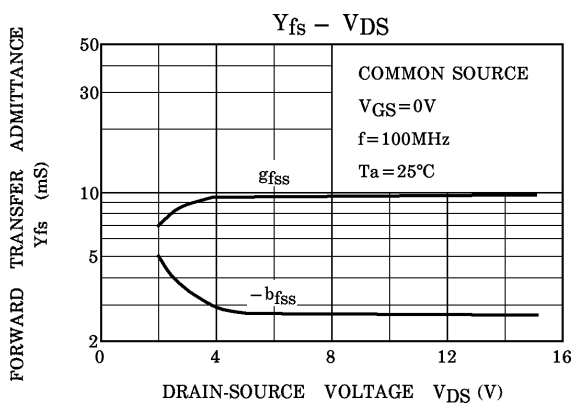
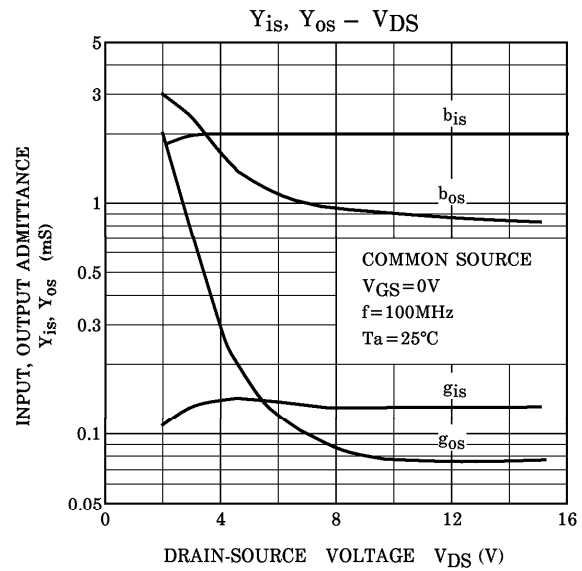
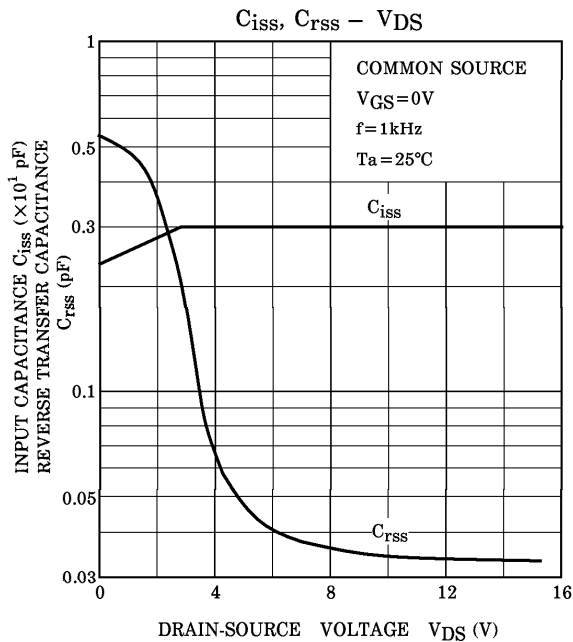
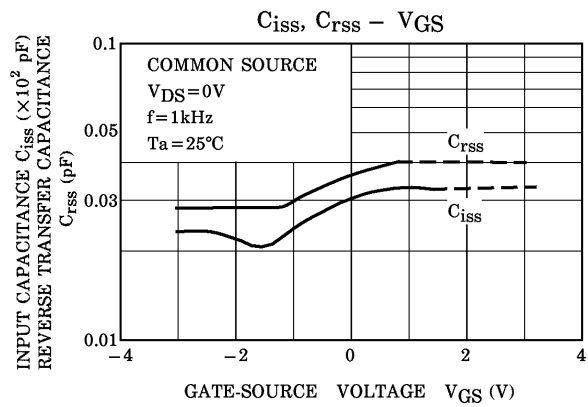
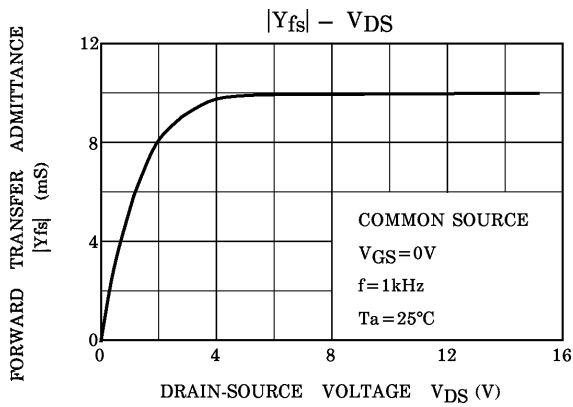


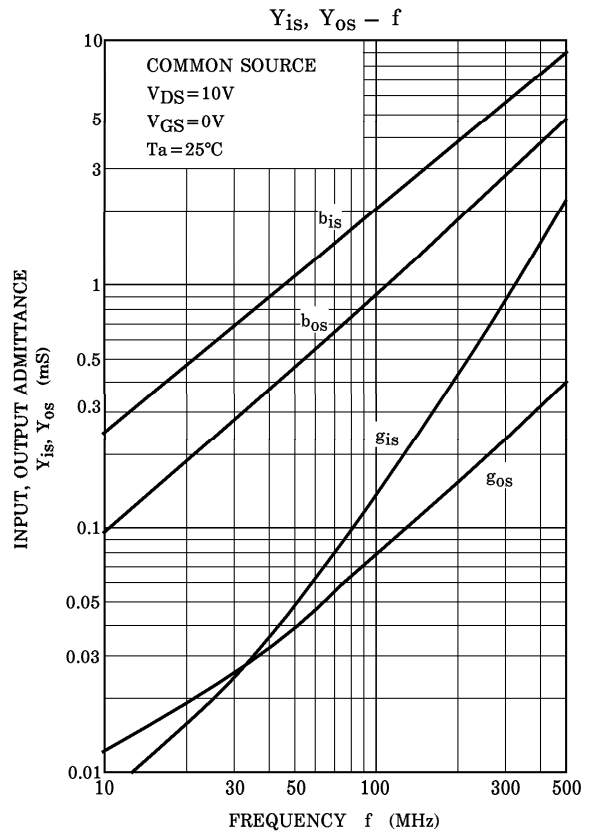
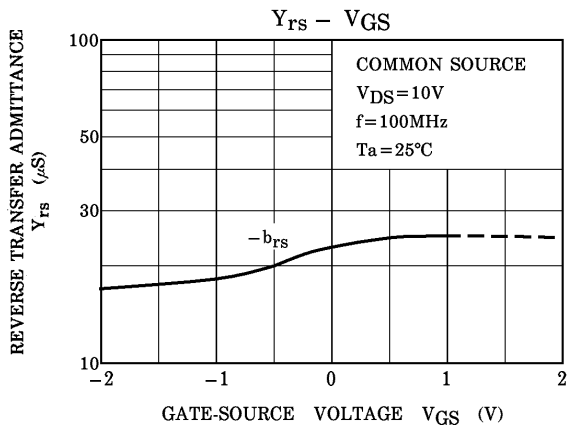
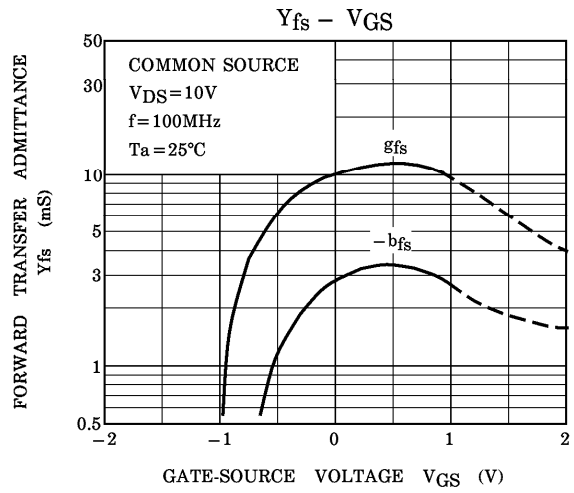
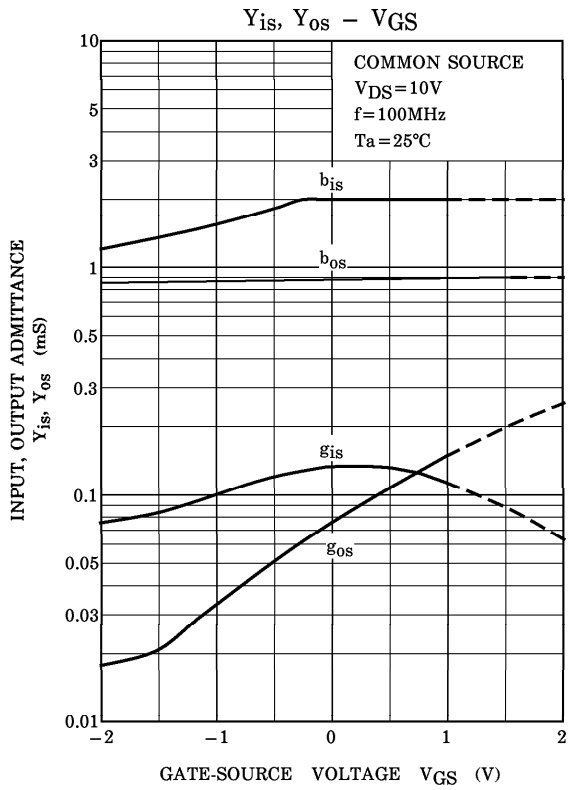
- L<sub>1</sub> : 1.0mm  $\phi$  SILVER PLATED COPPER WIRE 4.0T, 8mm  $\phi$  ID  
TAP AT 1.0T FROM COLD END
- L<sub>2</sub> : 1.0mm  $\phi$  SILVER PLATED COPPER WIRE 3.0T, 8mm  $\phi$  ID,  
10mm LENGTH

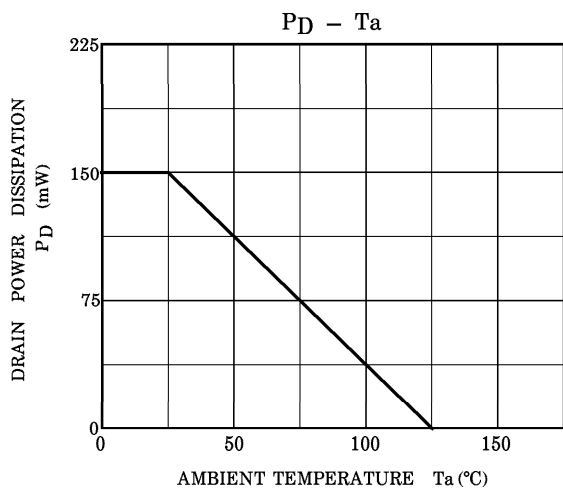
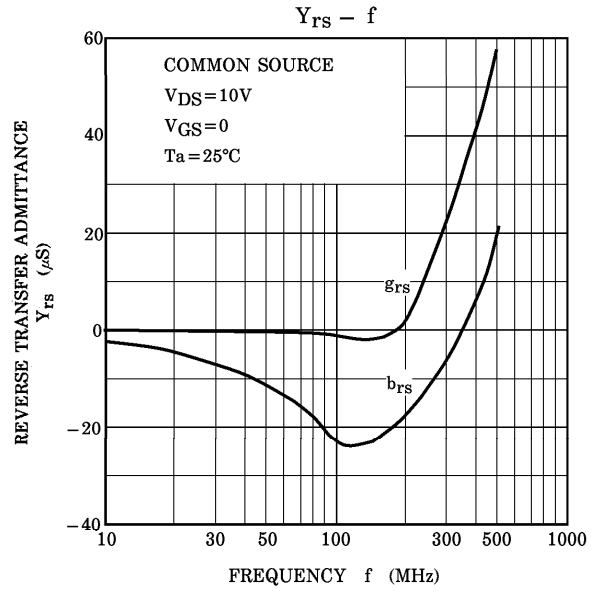
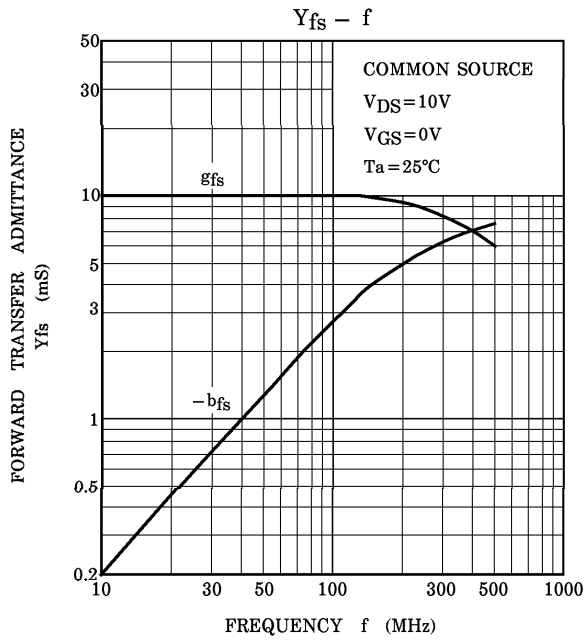
Marking











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