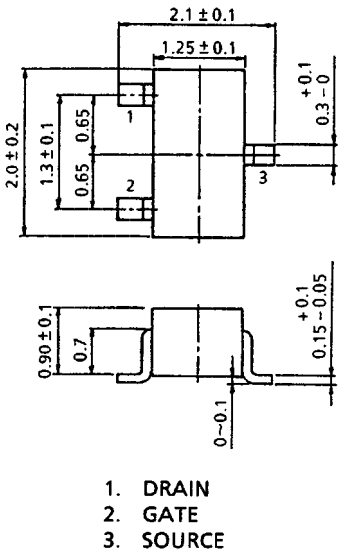
TOSHIBA Field Effect Transistor Silicon N Channel MOS Type

2SK882

FM Tuner, VHF RF Amplifier Applications

- Low reverse transfer capacitance: C_{rss} = 0.025 pF (typ.)
- Low noise figure: NF = 1.7dB (typ.)
- High power gain: G_{ps} = 28dB (typ.)
- Recommend operation voltage: 5~15 V

Unit: mm



JEDEC	—
JEITA	SC-70
TOSHIBA	2-2E1C

Weight: 0.006 g (typ.)

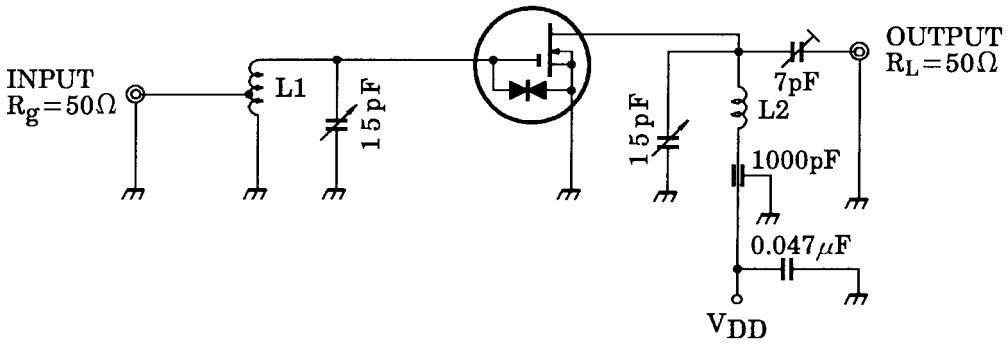
Maximum Ratings (Ta = 25°C)

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	100	mW
Channel temperature	T_{ch}	125	°C
Storage temperature	T_{stg}	−55~125	°C

Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Gate leakage current	I_{GSS}	V_{DS} = 0, V_{GS} = ±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	3	—	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, f = 1 kHz	—	10	—	mS
Input capacitance	C_{iss}	V_{DS} = 10 V, V_{GS} = 0, f = 1 MHz	—	3.0	4.3	pF
Reverse transfer capacitance	C_{rss}		—	0.025	0.04	pF
Power gain	G_{ps}	V_{DS} = 10 V, f = 100 MHz (Figure 1)	20	28	—	dB
Noise figure	NF		—	1.7	3.0	dB

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

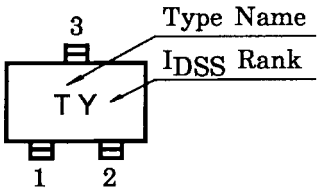


L1: 1.0 mmϕ silver plated copper wire 4.0 T, 8 mmϕ ID TAP at 1.0 T from coil end

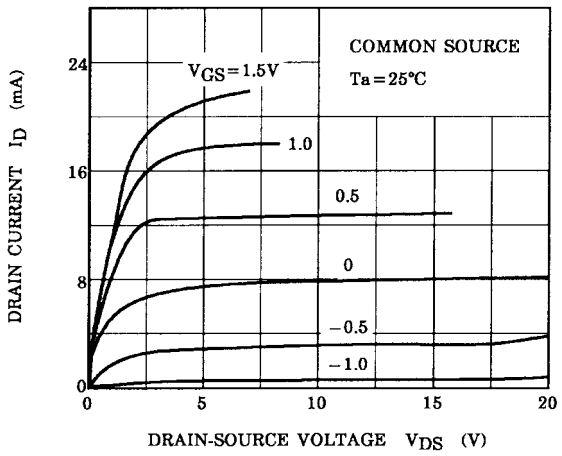
L2: 1.0 mmϕ silver plated copper wire 3.0 T, 8 mmϕ ID, 10 mm length

Figure 1 G_{PS}, NF Test Circuit

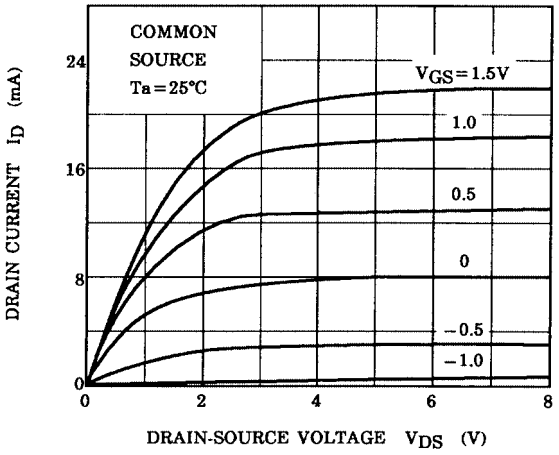
Marking



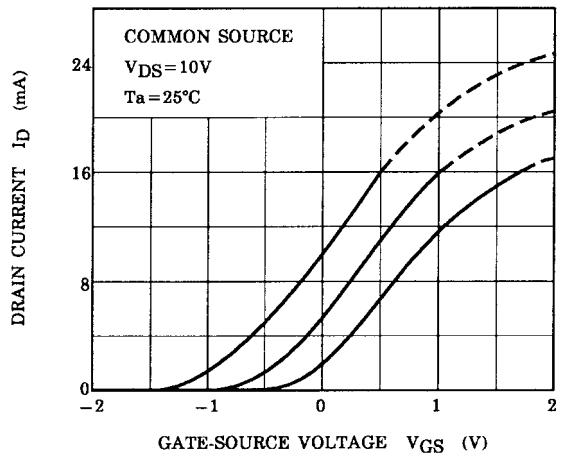
I_D – V_{DS}



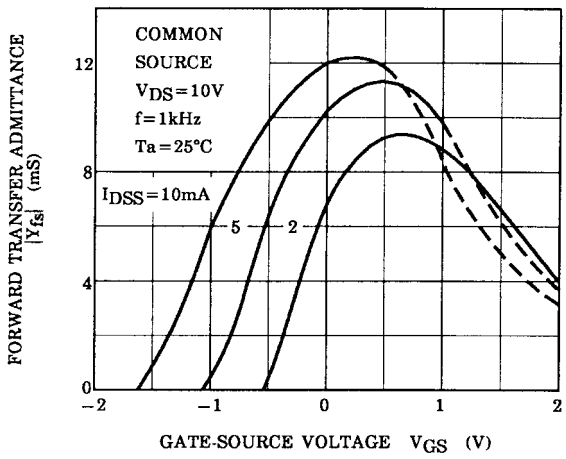
I_D – V_{DS} (LOW VOLTAGE REHION)



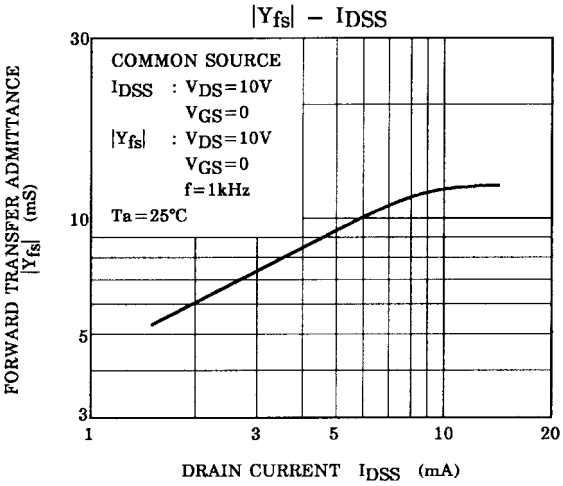
I_D – V_{GS}



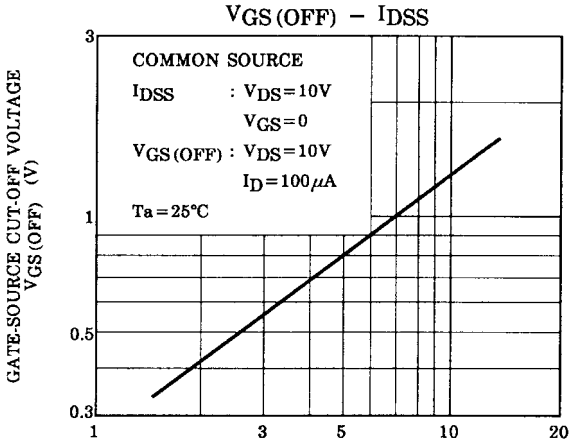
$|Y_{fs}|$ – V_{GS}



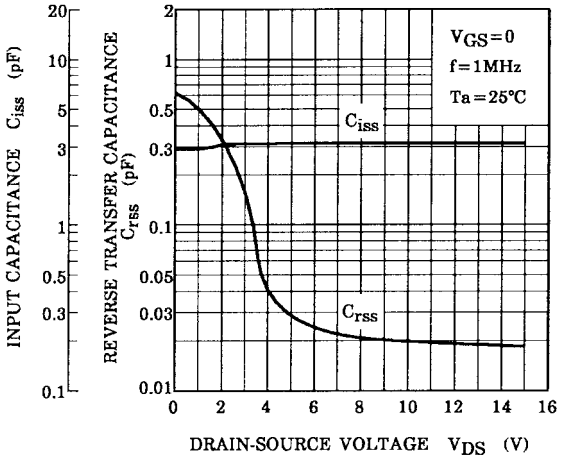
$|Y_{fs}|$ – I_{DSS}



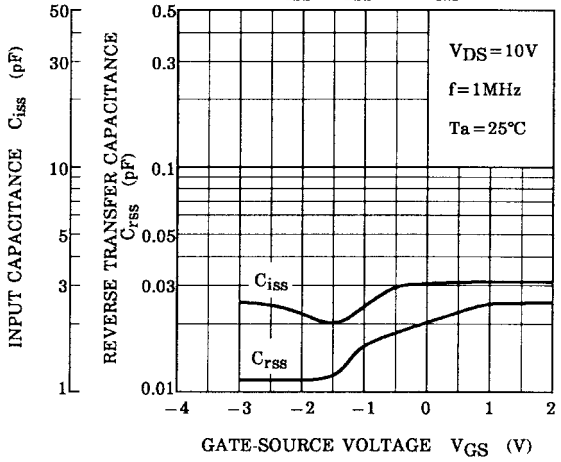
$V_{GS\,(OFF)}$ – I_{DSS}



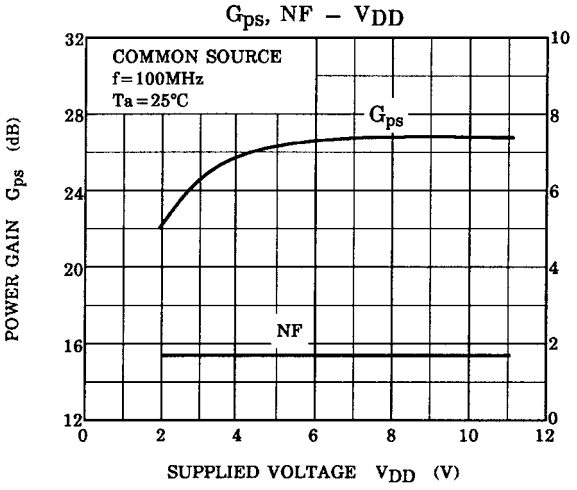
C_{iss}, C_{rss} – V_{DS}



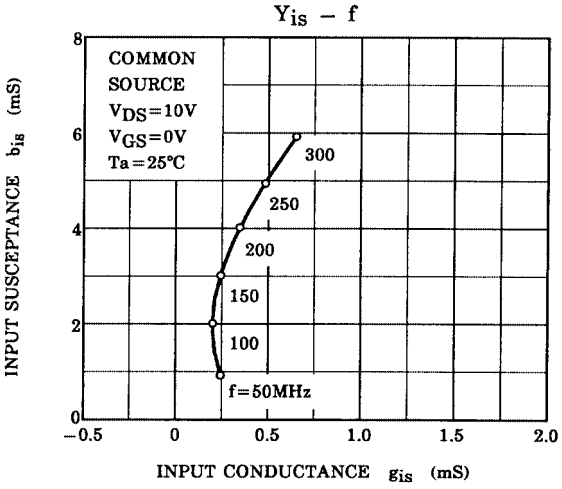
C_{iss}, C_{rss} – V_{GS}



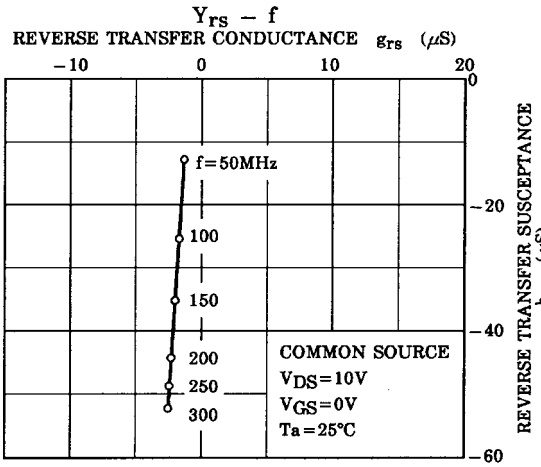
G_{ps}, NF – V_{DD}



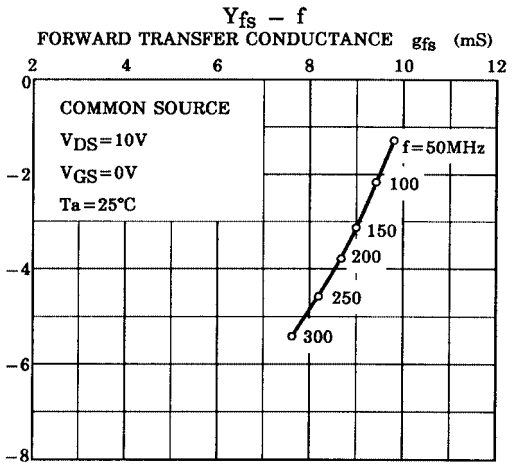
Y_{is} – f

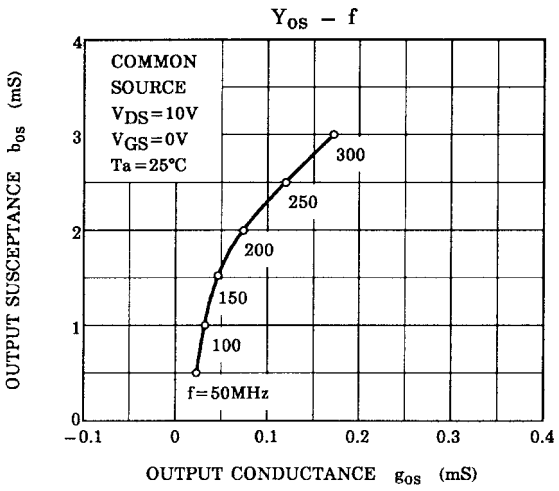


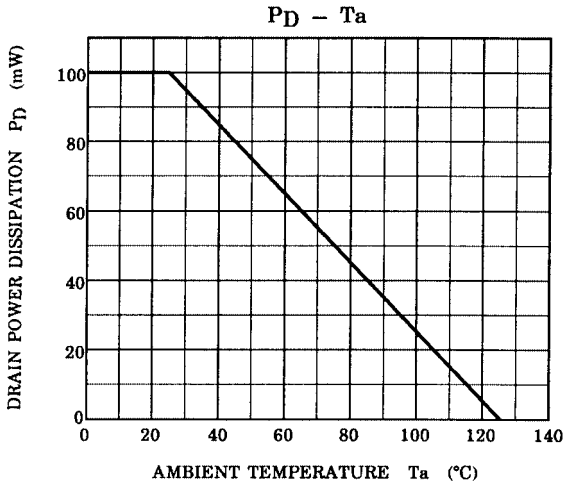
Y_{rs} – f



Y_{fs} – f




Y_{os} – f
COMMON
SOURCE
V_{DS}=10V
V_{GS}=0V
Ta=25°C
300
250
200
150
100
f=50MHz
OUTPUT SUSCEPTANCE b_{os} (mS)
OUTPUT CONDUCTANCE g_{os} (mS)
4
3
2
1
0
−0.1
0
0.1
0.2
0.3
0.4


P_D – Ta
DRAIN POWER DISSIPATION P_D (mW)
AMBIENT TEMPERATURE Ta (°C)
100
80
60
40
20
0
0
20
40
60
80
100
120
140

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